Booklet

Contents

Oral

How is the distribution of Neurosurgeons per population worldwide? Where are we?

S. Maysam Alimohamadi[1], S. Abolghasem Mortazavi[2], Firooz Salehpour[3], Masih Saboori[4], S. Ebrahim Ketabchi[5]

1-Assistant Professor of neurosurgery, Sina hospital, Tehran University of Medical Sciences
2-Assistant Professor of neurosurgery, Sina hospital, Tehran University of Medical Sciences
3-Full Professor of neurosurgery, Tabriz University of Medical Sciences
4-Full Professor of neurosurgery, Isfahan University of Medical Sciences
5-Full Professor and chairman of Sina hospital department of neurosurgery, Tehran University of Medical Sciences (*president of Iranian Neurosurgical Society*).

Introduction: Neurosurgeons provide surgical services for neurological conditions. They provide expert care atsecondary and tertiary level for neurosurgical emergencies and also surgical care for conditions such as space-occupying lesions. In some places, neurosurgeons also provide medical care for people with neurological disorders. They also provide training, support and supervision to primary health-care providers in care of neurological conditions, especially emergencies.

Methods: In this study, we performed a web based review of the available data about the number of neurosurgeons per capita in different countries and compared them to our national data.

Results: Considering all neurosurgery residents at second year or higher level and all registered neurosurgeons, a total of 33,193 neurosurgeons are reported to be available in 103 countries. The median number of neurosurgeons in the responding countries is 0.56 per 100 000population (interquartile range 0.07–1.02).

The distribution of neurosurgeons across regions is variable. The median number of neurosurgeons per 100 000 population is 0.01 in Africa, 0.03 in South-East Asia, 0.37 in the Eastern Mediterranean, 0.39 in the Western Pacific,0.76 in the Americas, and 1.02 in Europe.

For instance, in Sweden there are about 100 neurosurgeons with a population of about 9 million, around 1000 neurosurgeons in India with a population of 1030 million and over 6000 neurosurgeons in Japan with a population of 130 million (Japan: 1 neurosurgeon / 22.000, Sweden: 1 neurosurgeon / 90.000, India: 1 neurosurgeon / 1.03 million).

One of the most important findings is that in many developed countries such as USA, England and Germany the mean age of practicing neurosurgeons is tending to get older. i.e. in USA 44% of practicing neurosurgeons are over the age of 55.

In Iran, there about 730 graduate neurosurgeons and it is estimated to be at least about 150 residents at 3rd, 4th and 5th years of residency (overall 880).

Therefore, we have got about 2.5 percent of all neurosurgeons of the world (103 most important countries for neurosurgery practice). There is near 1 neurosurgeon for each 100,000 population in Iran. More importantly since the majority of the neurosurgery training programs of Iran have been developed in the last 15 years, a great fraction of the population of active neurosurgeons of our country are young neurosurgeons and the mean age of neurosurgeons in Iran is much less than the developed countries.

The major problem with neurosurgery and few other specialties is maldistribution of them among different areas. The reason is that they need high population areas to sustain quality practice.While in US 25% of people live in cities without neurosurgeon, the distribution of neurosurgeons in Iran (while still not-optimal) covers many of the far reached areas and small cities.

Conclusion: The above evidence clearly demonstrates that to increase the absolute number of neurosurgeons in Iran is not a national priority. The more important goal would be to design programs and facilities to reach a better distribution of the neurosurgeons across the country. The even more (if not most) important point in designing and monitoring neurosurgery training programs in Iran, is to increase the competency of neurosurgical graduates and to keep up with the new developments in this demanding field by designing subspecialty training programs in very precisely selected and elected centers of excellence. To overcome the territorial difficulties unique to our country for optimal care of trauma patients, the best solutions would be to design and implement customized patient transfer systems and to optimize the mechanism of patient referral between different health care centers.

The Quality of the Reporting of Randomized Controlled Trials after CONSORT 2010 Statement in the Neurosurgery Prestigious Journals

Mohammad Mirza-Aghazadeh-Attari[1], Behnam Mansorian[2], Jamal Ahmadzadeh[2], Iraj Mohebbi[2], Javad Aghazadeh-Attari[3,*]

[1]Medical philosophy and history research center, Tabriz University of Medical Sciences, Tabriz, Iran.
[2]Social Determinants of Health Research Center, Occupational Medicine Center, Urmia University of Medical Sciences, Urmia, Iran.
[3]Department of Neurosurgery, Urmia University of Medical Sciences, Urmia, Iran.

Objectives: The aim of this study was to assess the CONSORT 2010 Statement is associated with the improved completeness of reporting of randomized controlled trials (RCTs) in the neurosurgery prestigious Journals.

Materials and Methods: We conducted a qualitative study and selected four top neurosurgery journals, including Journal of Neurology, Neurosurgery, and Psychiatry; Journal of Neurotrauma; Neurosurgery; Journal of Neurosurgery among the most prestigious and important neurosurgery journals indexed in international databases. Twenty RCTs articles from each of the journals were randomly selected. We assessed all CONSORT 2010 statement items to examine how many items were reported, not reported and not applicable in the articles published in the each included journals.

Results: A total of 80 RCTs was included in the full text. All sub-items were reported in 79.90% (95% confidence interval [CI], 75.7% to 84.1%), not reported in 17.47% (95% CI, 9.87% to 25.07%), and not applicable in 2.64% (95% CI, 1.85% to 3.43%) of the RCTs studies. Of the 37 sub-items investigated in this survey, seven sub-items were reported 100%, 11 sub-items were addressed in more than 90% of the articles, 26 sub-items were included in more than 75% of the studies, and 33 sub-items were applied in more than 50% of the articles assessed from the journals included in this study.

Conclusion: The results of this study reveal that the quality reporting of RCTs studies published in the most prestigious neurosurgery journals was moderate and not yet sufficient.

Key words: CONSORT 2010 statement; RCTs studies; Editor; reviewer; author; journal

Brain–heart interactions: neuromodulation of cardiac physiology and pathophysiology

Fariborz Ghaffarpasand*[1], Nizal Sarrafzadegan[2], Shahram Oveis-Gharan[2,3], Mustafa Toma[4] and Vladimir Hachinski[5]

1Student Research Commmittee, Department of Neurosurgery, Shiraz University of Medical Sciences, Namazi Hospital, Namazi Square, PO Box 71973-11351, Shiraz, Iran.
[2]Isfahan Cardiovascular Research Centre, Cardiovascular Research Institute, Isfahan University of Medical Sciences, Khorram Avenue, PO Box 81465-1148, Isfahan, Iran.
[3]Department of Neurology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.
[4]Division of Cardiology, St. Paul's Hospital, University of British Columbia, Vancouver V6Z 1Y6, British Colombia, Canada.
[5]Department of Clinical Neurological Sciences, University Hospital, University of Western Ontario, London, Ontario, Canada.

Brain–heart interactions were first described by Claude Bernard >150 years ago. The brain modulates cardiac physiology by various pathways, and knowledge of these pathways is the basis of targeted therapy in several cardiovascular disorders. Cardiac physiology is mainly modulated by the autonomic nervous system centres, which are located in the lower pons and upper medulla, and which control the sympathetic and parasympathetic nervous systems. The autonomic nervous system is itself modulated by higher central nervous system centres, including the prefrontal cortex, cingulate gyrus, amygdala, insular cortex, subfornical organ, and suprachiasmatic nucleus. The complex circuity of these structures underlies the physiology and pathophysiology of several phenomena, including haemodynamic changes (heart rate, heart-rate variability, and blood pressure), cardiac arrhythmias, the physiological responses to emotions and cognitive functions, circadian rhythm and cardiac health, the trigeminocardiac reflex, and sudden cardiac death owing to epilepsy. In this Review, we discuss the major brain–heart interactions and the neuromodulatory mechanisms of cardiac physiology.

Orbitaltumor surgery Extracranial Versus Intracranial approach Report of 9 cases

Masoud Fallahi Motlagh, Dariush Rohi

Azarbijan Hospital, Urmia-Iran

Purpose: Several approaches to the intraorbital space have been described in the literature. Selection of a proper approach to intraorbital lesions depends on various factors including the location of the tumor, the size of the lesion, and the probable pathology anticipated. The approach should provide a good exposure of intraorbital anatomical structures, allow their functional preservation, and provide good cosmetic results. In this paper we try to explain the selection criteria for approaches to the orbit.

Methods: The authors performed a retrospective analysis of a series of all cases involving patients who underwent surgery for treatment of orbital tumors in Azarbayjan hospital between April 2014 and April 2017. Data were collected from the patients' files in the hospital's outpatient clinic, operative notes, and pre- and postoperative imaging studies. We find nine cases of tumors involving the orbit and discuss the surgical challenge, which involves tumor removal, preserving visual function and cosmetic reconstruction.

Results: The authors identified 9 patients who met the inclusion criteria (age range 2–70 years, mean 18 years. The most common presenting symptoms were proptosis 6 cases [66.7%]) and visual impairment (5 cases [55.6%]). In 6 (66.7%) cases, the tumors were primary intraorbital lesions, and in 2 cases (25%) they were secondary. one patients had metastases to the orbit. The most common lesion types were ossifying fibroma (4 cases) and sarcoma (2 cases). In 3 cases a transcranial approach was used and the rest approached via extracranial accses.Maxillectomy through a Weber–Ferguson approach or a facial degloving approach was added in 2 cases to complete tumor removal. Duration of follow-up was 1–38 months (mean 20 months). None of the patients died as a result of the procedure, and there were relatively few complications. Excluding the patients who underwent orbital exenteration, none of the patients had visual deterioration following surgery, and most had no change in their visual condition. Two patients had temporary diplopia, 1 had a cerebrospinal fluid leak, and 3 had enophthalmos following removal of an orbital tumor.

Conclusions: There are many different approaches to orbite. Selection of these approaches depend on the size, site and nature of the tumor. Preoperative imaging can accurately define the compartments involved and the surgical approach needed for tumor removal. A multidisciplinary team of surgeons facilitates optimal tumor removal and skull base sealing as well as good cosmetic results.

The best approach is procedures that have the potential to reduce operative morbidity, to facilitate patient,s recovery, to speed up the surgical procedure and thus improve cost-effectiveness in case management.

Keywords: Orbital tumor surgery

Posterior Transpedicular Intracorporal Endoscopic Discectomy Approach forCalcified Midline Thoracic Disc Herniation

Mehdi Sasani

Professor of Neurosurgery, koc University School of Medicine, American Hospital,Istanbul-Turkey

sasanim@gmail.com

Thoracic disc herniations (TDH) are relatively rare and less symptomatic patients account for 0,19 to 4% of all disc herniation that are going to surgical treatment. The entity of TDH is known so the assessment and diagnosis of thoracic disc herniation patients are well performed. Otherwise select of appropriate approach and effective surgical strategy has still challenged because of poor outcome after many surgical technique which have been defined up to now. In consequence choice of favorite surgical treatment for TDH is controversial due to the location and consistency of the TDH. The approaches for treat of TDH are anterior or anterolateral and posterior or posterolateral. The posterior or posterolateral approaches use mostly for lateral location and soft or hard consistency of TDH. Only laminectomy was abandoned itself because of more neurologic detoriation after surgery. Few posterolateral alternative approaches as transpedicular without laminectomy or transfacet pedicle-sparing techniques have explained up to now. Although in posterior –lateral approaches morbidities due to transthoracic approach as anterior and anterolateral approaches do not occur, substantial paravertebral muscle dissection is needed to gain access to centrally located disc herniations, but even then, adequate ventral dural decompression can be challenging result in not good exploration for very limited range of visualization of central disc herniation. Whereas central calcified TDH can be safely removed through an anterolateral approach for it creates direct surgical dissection borderline between the dura and calcified disc herniation which adhesive together that is high risk for tearing of dura, on the other hand anterolateral approach for TDH provides secure surgical management. However, it has many disadvantage with compare of posterolateral approach, it is known that extensive open thoracotomy was recently modified into less disruptive techniques, such as the mini-open transthoracic and thoracoscopic approaches. However they have also significant transthoracic approach-related morbidities as pleural effusion, lung tissue contusion pneumonia particularly intercostal neuralgia.

It is comprehensively concluded in literature that central calcified thoracic discs should be treated through an anterolateral approach, whereas lateral soft or hard discs can be removed from a posterior or posterolateral approaches.

A good surgical procedure which has either posterolateral or anterolateral advantages to treat calcified central TDH as well as it create good anterior vision to avoid poor results due to spinal cord manipulation may occur in posterolateral approach as well as.

In this presentation all approaches to treat TDH was discussed and an endoscopic transpedicular intracorpural discectomy to treat midline calcified TDH as well.

Doserelatedefficacy of Mannitol intraumatic BraininjurybasedonIntracranialpressure monitoring

Kashif Sultan, Shahzad Hussain, Prof.Naveed Ashraf

Consultant Neurosurgeon DHQ Hospital Jhang Pakistan

Abstract

Posology of Mannitol administration has been controversial subject ever since it came into clinical use. Our study was conducted in Deptt of Neurosurgery Jinnah Hospital/Allama Iqbal Medical College Lahore to substantiate the effect of varying doses of mannitol and develop a guideline for our patients.

Method: Despite the widespread use of mannitol to treat elevated intracranial pressure (ICP), there is no consensus regarding the optimal dosage. The objective of this study was to retrospectively characterize the dose-response relationship between mannitol and ICP with a continuous monitoring of the intracranial Pressure bya very sensitive intraparenchymalmicro chip catheter for ICP monitoringby using a continuous high-frequency physiological data collection system. We measured ICP of twenty patients continuously. Two groups were made each group having 10 patients each. Group A was given30 gm Mannitol (150ml) at every surge of ICP and the group B was given 50gm of mannitol at every surge of IallP, and then results were collected at 1m, 5m, 30m, and 90m.Cerebral perfusion pressure was maintained above 60 mm Hg

Results: ICP fell immediately after dosing, and continued falling for approximately 30 min to 15.7 +/- 8.1 mm Hg across all patients. After 30 min, ICP was equal in the 50-g group (15.6 +/- 10.9) versus the 30-g group (15.7 +/- 6.3). However, at 90 min, ICP started increasing in the 30-g group but was still lower in the 50-g group (18.6 +/- 7.6 vs. 14.2 +/- 6.7 mm Hg) and no significant increase wasobserved in ICP of that group.

Conclusion: Osmotic agents such as mannitol have been used for decades to treat cerebral edema, but there has been no definitive quantitative information regarding the dosing of mannitol. In a large, retrospective study of high-frequency ICP data, we have quantitatively shown that effectof mannitol on ICP is dose-dependent and that higher doses provide a more durable reduction in ICP.

Keywords: intracranial pressure monitoring, mannitol, traumatic brain injury,

Endospine- Endoscopic Anterior Cervical Discectomy & Cord Decompression – Destandau's technique

Dr. Shrinivas M. Rohidas

Center for Minimally invasive spine and Neurosurgery India

Objective – We are using endospine in degenerative lumbar pathologies like disc herniation, radiculopathy due to disc hernia & bony canal & foraminal stenosis since 2002. After going through the initial steep learning curve we started using endospine for posterior foraminotomies & disc removal with canal decompression for cord compression since 2004. Since 2006 we started using Endospine for anterior cervical endoscopic microforaminotomy and cord decompression. We report use of Endospine for anterior cervical endoscopic discectomy & cord decompression.

I used Jho's technique with Endospine for endoscopic anterior cervical discectomy and cord decompression in 60 cases between 2006 and 2016. Their demographic data, clinical presentation, and surgical outcomes were recorded. 43, patients were males and 17patients were females. Their ages range from 24 to 74 yrs. There were 29 disc herniations at C5/6, followed by 16 at C4/5. In 10 patients there were nerve root compression at C6/7. One patient had disc herniation at C3/4. One patient had disc herniation at C3/4 & C4/5, one had at C4/5 & C5/6 level, and two patients had disc herniation at C5/6 & C6/7 vertebral level. Seven patients had myeloradiculopathy at C4/5, and 11 had myeloradiculopathy at C5/6 leval. One patient had myeloradiculopathy at C6/7.

Results – In anterior endoscopic cervical approach, out of 60, 59 patients had excellent results, 1 had fair results considering modified MacNab criteria. Dural puncture was seen in one patient in anterior approach. Muscle piece with fibrin glue was used to seal the puncture. In anterior cervical approach 2 patients had Horner's symdrome and 2 patient had transient recurrent laryngeal nerve paresis which recovered in 2 weeks to 8 weeks period completely. Pseudoaneyrysm of VA was reported in one case in anterior approach. This was a case demonstrated in one of the workshop & not included in the study but for the purpose to know the technique related complication we are mentioning this.

The complications can be reduced by selecting the cases for approach, and by exact knowledge of endoscopic anatomy through small incision. Opposite canal decompression in both the approaches can be safely done with help of ultrasonic bone dissectors of various types. It reduces surgeons stress while working in these narrow corridors. Bleeding from vertebral artery in anterior approach should not be tackled with bipolar cautery. Rather we use surgicell packing over vertebral artery venous plexus which helps in reducing oozing from VA.

Conclusion – Endospine in cervical region can be used for both anterior as well as posterior approaches. Endospine has a very steep learning curve. Endospine with Jho's approach is a better technique for disc

preserving functional spine surgery. Cord decompression also can be achieved with anterior approach. Use of endospine with posterior and anterior, Jho's approach should be by experienced surgeon to avoid complications like dural injury.

Keywords: Cervical disc herniation, cervical foraminotomy, Jho's technique, endospine, intervetebral disc, radiculopathy.

Ultrasonic bone dissector in Endoscopic spine surgery.

Dr. Shrinivas M. Rohidas

Center for Minimally invasive spine and Neurosurgery India

Introduction:

In recent years, spinal surgery has greately progressed with the help of operating microscopes and high speed mechanical drills, especially microdrills. Last few years of 1900's and initial years of 20's has seen minimalisum in spine surgery with the use of endoscope to treat degenerative spinal diseases. Very recent introduction of high definition camera with HD screen has helped the endoscopic spinal surgeon to understand the anatomy better because of the panoromic view with an endoscope. When the high speed drills are used near to soft tissues like dura, nerve roots, the spinal cord and vessels, there is always some risk of damaging these tissues by drilling even under magnified view of microscope or even endoscope. Ultrasonic aspirators have been succefully used to remove brain tumours, even a fibrous,calcified tumour like meningioma at the skull base. (E. S. Flamm, J. Ransohoff, D. wuuchinich et al, Preliminary experience with ultrasonic aspiration in neurosurgery, Neurosurgery 2(3)(1978) 240-245, T.Inoue, K.Ikezaki, Y.sato Ultrasonic surgical system (Sonapet) for microsurgical removal of brain tumours, Neuro Res. 22(50(2000) 490-494,). We report the clinical application of ultrasonic bone dissector in endoscopic spinal surgeries- Destandau's technique. And we discuss its advantages and disadvantages in comparison with drills. Every spinal surgeon has in his mind an idea of an instrument which will remove bone near to important structures like dura, nerve root, cord and vessles, safely, easily & fast. And at the same time there is no iatrogenic trauma to these structures.

Materials and methods:

As an ultrasonic bone dissector we used, Sonoca 300, (SoringGmbh, Germany), which comprises a power supply unit with suction and irrigation, foot switch, handpiece. The handpiece tip height and width is 3.1 x 4.5 mm, with longitudinal and deformational motions, which are effective in scrapping and cutting bone tissue. The handpiece is lightweight 81 g , with bayonet angle, and both irrigation and aspiration channels. From April 2010, 55 cases of spinal disorder , degenerative spine diseases were operated on using Sonoca 300, involving, lumbar canal stenosis, cervical disc herniation and cervical cord compressive myelopathy etc. Out of 55 cases 30 were lumbar spinal stenosis, 15 posterior endoscopic cervical approach and 10 anterior cervical microforaminotomy cases. In lumbar endoscopic approach, bilateral canal decompression using unilateral approach was performed. Opposite lamina and hypertrophied medial facet undercutting was performed with ultrasonic bone dissector. In cervical region both anterior & posterior endoscopic approaches were used. In anterior cervical transuncal approach, bone near cord, nerve root and near vertebral artery was removed with ultrasonic bone dissector. In

posterior cervical approach for foraminotomyderoofing of neural foramen to decompress the nerve root and in canal decompression opposite lamina undercutting was performed with ultrasonic bone dissector. The mechanisum is based on ultrasound frequency vibration of the the tip produced by a piezoelectric element exposed to alternate current. The stack of piezo-electric quartzes transforms the electricalenergy of the Generator into a longitudinal, mechanic vibrationof the sonotrode tip. The sonotrode is designed such that theentire system (converter, final mass, sonotrode) is in resonance.

The stroke at the distal tip is up to 120 micrometers.The direction of movement of the tip are both longitudinal and deformation. The longitudinal movement is around 120 micrometers and deformation is around 10 to 20 micrometers. The frequency is 35 kHZ. The base of the device's neck has much less motion than the operating end of the tip. The particular tip motion emulsifies bone near the contact area, with benefit of fine selective dissection with minimal heat production as there is continuous irrigation of the tip. After placing the tip of ultrasonic bone dissector at the bone surface , the bone is emulsified by applying the ultrasonic vibrations.

Surgical techniques and results.

From August 2009 to Dec 2016 out of 849 lumbar endoscopic spine surgery cases Authour used UBD/rasp/cool knife in 120 cases. UBD/rasp is used to shave off thick osteophyte stretching the nerve root, undercut the opposite lamina, and opposite medial facet. Also in transforaminal approach for foraminal&extraforaminal discs, neural foramen is enlarged at isthumus to decompress the exiting nerve root. Ultrasonic bone cutter/rasp/cool knife is used to undercut thick base of spinous process to reach with Endospine the opposite lateral recess and spinal canal.

Out of 55 cases of anterior cervical endoscopic discectomy author used UBD /rasp/cool knife in 47 cases. In anterior cervical approach we use ultrasonic bone dissector to widen the transuncalforaminotomy window. The foraminotomy is medial to the vertebral artery. To use drill medial to VA is really difficult. Also once we are over the cord /dura to use drill is difficult and needs lots of experience. For this we use different currets and 1 mm Kerrison punch. Ultrasonic bone dissector is more safe near the vertebral artery and cervical cord with outgoing root. By angulating the endoscope ultrasonic bone dissector can be used to decompress the anterior surface of cord as it can work end on and upwards through a small window.

Out of 31 cases, Ultrasonic bone dissector was used in 23 cases of cervical radiculopathy and compressive myelopathy where we used posterior cervical endoscopic approach. In posterior endoscopic cervical approach we use ultrasonic bone dissector to de-roof the foramen and toremove hard bone in the axilla of the nerve root where Kerrison punch and drill is too difficult to use. In patients with cervical cord compressive myelopathy we perform ipsilateral laminectomy and then we use ultrasonic bone dissector safely to obliquely undercut the opposite lamina from below. The deepness of contralateral corridor requires very small tip instruments and microdrill. One of the major task is the removal of the

bone without injuring dura and nerve root. In cervical region space between the opposite lamina and cord is too small, and to use microdrill is too difficult. The kicking movement of drill or sudden slippage of drill is dangerous, particularly in such deep and delicate areas. There is always high risk of serious sequaelae of iatrogenic trauma in cervical region. Ultrasonic bone dissector is very effective in avoiding injuries to the dura and nerve roots as it can be used without damaging soft tissues and without tangling cottonoids used to protect dura. Another advantage of this ultrasonic bone dissector is that it can be used with one hand as it is light weight.

Discussion:

The regular use of high speed drill and microscope / endoscope has improved the surgical results. But while using drill in spine surgery we always face some risk of iatrogenic injury to dura, neural tissues and vessels. In order to avoid accidents , we have to use both hands to hold the drills in spine surgery. Also the tip of the drills had to be angled away from the suction tip and cottonoidswhich are used to protect dura or nerve root. Also with use of endoscope there is always chance of getting lens tip dirty due to bone dust spreading over it. For this frequent removal of endoscope to clean the tip is mandatory. Due to fear of accidents in drilling , training of young spinal surgeons is not an easy task. Complications related to spinal injury are reported to occur with a frequency of 8.6% (1569/18334 cases)–Yamamoto H, (1999), Nation wide survey for spine surgery, Japanspine research society, a committee report. Spine surgery 10(2): 332-339 .These complications include general complications, neurological and meningeal complications, vascular complications, infections, bone graft failure, mechanical problems, and so on. Among these complications related to drilling procedures include spinal cord and root injury. These iatrogenic complications although rare are serious and sometimes lifethtreatening in cervical region.

The development of ultrasonic bone dissector handpiece for endoscopic use has resulted in value addition in safety of our techniques in minimally invasive spine approach. The ultrasonic bone dissector is able to scrape and cut bone tissues without fear of injuring the dura and nerve roots, or tangling of cottonoids in various approaches of spinal pathology with endoscope. Fear of bleeding from epidural veins is also less while using ultrasonic bone dissector. One more advantage of this light weight handpiece is that one can use dissector with one hand, usually the dominant right hand, but it can also be used with left hand when ever it is absolutely necessary. Long duration use with one hand is also not tiresome due to light weight. The thermal effect of the ultrasonic bone dissector is well controlled with in built irrigation in the handpiece. (A.T. Brooks, C.L. Nelson, C.L. Stewart, et al. Effect of an ultrasonic device on temperature generated in bone and on bone cement structure. J. Arthroplast. 8(4)(1993) 413-418.)

Suetsuna et al. (F. Suetsuna, S. Harata, N. Yoshimura, Influence of the ultrasonic surgical aspirator on the dura and spinal cord. An electrohistologic study, Spine 16(5) (1991) 503-509.reported an elecrtophysiological study on the influence of the ultrasonic bone aspirator on the duraand spinal cord, which suggested that there is a certain safety limit at 60% energy and maximum time duration at one

point less than 10 s.Therefore when using ultrasonic bone dissector on dura constant irrigation and intermittant usage is advisable.

At present we can not think ultrasonic bone dissector as complimentory to high speed drill. But we can use high speed drill for rough drilling as like in anterior cervical approach to remove bone end on at uncovertebral joint, and Sonoca 300 ultrasonic bone dissector for bone removal in deeper and more delicate area adjacent to dura and nerve roots, with complete understanding of advantages and disadvantages of both the appliances.

The ultrasonic bone dissector definitely has advantage while working near important structures. There were no complications realted to the use of the device. The ultrasonic bone dissector removes bone in a shaving scrapping like manner. The bone is removed in thin layers. The ultrasonic bone dissetor enables easy removal of bone with minimal compression pressure against the bone surface. This is one of the biggest advantages in respect to the microdrill where the extent of bone removal is directly related to the power/ pressure used over the bone surface.

This ultrasonic bone dissector is easy to use, and surgeon gets familier with the device in a short time. This device does not require a long training curve. But like any other surgical instruments, use of ultrasonic bone dissector is also skill dependent and its use in endoscopic spine surgery should be by surgeons already experienced in endoscopic spine surgery by Destandau's technique.

Conclusion: The ultrasonic bone dissector is a valuable instrument in removing the bone in critical areas, thus increases the overall safety of the endoscopic spine surgery techniques. Even if the ultrasonic bone dissector can not replace conventional high speed drill at present, it is useful and unavoidable instrument for endoscopic spine surgery, as far as safety of the procedure is concerned.

A 56-year old man with intrasellar arachnoid cyst: A case report and review of the literature

Saffarian A[1], Shamspour S.Z[2], Behjat R[2], Dehghanian A[3], Taghipour M[1].

1- Division of tumor and skull base surgery, Department of neurosurgery, Shiraz university of medical sciences
2- Resident of neurosurgery, Student research committee, Shiraz university of medical sciences
3- Department of pathology, Shiraz university of medical sciences

Introduction: Arachnoid cysts (ACs) are benign lesions, frequently found on brain imaging studies. However, arachnoid cysts in the intrasellar region are rarely encountered.
Presentation: A 56-year old man who presented with headaches and progressive decrease in visual acuity since 3 months ago. Imaging studies revealed a cystic sellar mass. Routine and hormonal assays were all within normal limits. Endoscopic resection via by transnasal transsphenoidal route was performed. Our intraoperative impression was an arachnoid cyst and pathologic evaluations verified our observation.
Conclusion: Although intrasellar arachnoid cyst is a rare entity, but should be included in the differential diagnosis of cystic sellar region.

TransvermianTransvelar Approach to the Trochlear Nerve Schwannoma Locating in the Pineal Region; A Technical Case Report

Majid Reza Farrokhi, MD[1], MousaTaghipour, MD[2],Fariborz Ghaffarpasand,MD,[3]

1. Professor of Neurosurgeryand SpineFellowship,Shiraz Neuroscience Research Center , Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran
2. Professor of Neurosurgery, Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran
3. FariborzGhaffarpasand, MD, Resident of Neurosurgery, Department of Neurosurgery – Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Background: The schwannoma of the trochlear nerve is extremely rare and is mostly located in the pineal region. The surgical approach to this region for resection of trochlear nerve schwannoma has not been well documented due to the rarity of the disease. We herein describe an innovative approach for successful resection of the trochlear nerve schwannoma.

Case Description: A 12-year-old boy presented with headache, abnormal gait and disturbed conjoined eye movement. He was diagnosed to have a lesion in the pineal region compressing the superior medullary velum into the forth ventricle. Bilateral midline suboccipital craniotomy was performed and the vermis was divided in its inferior portion. The lesion was approached through the superior medullary velum (transvermiantransvelar approach). Total resection of the lesion was performed and histopathology examination revealed trochlear schwannoma. The patient's symptoms resolved and he had no recurrence in 6-year follow up.

Conclsuion: Transvermiantransvelar approach could be a feasible and safe approach to the lesion of the pineal region compression the superior medullary velum.

Analysis of the Angio-Architectural Factors Affecting Early and late Clinical and Angiographic Outcome after Treatment of Brain Aneurysms Using Pipeline Flow-Diversion Stents

Parviz Dolati[1], Olutayo Olubiyi[1], Christopher S Ogilvy[1], and Ajith Thomas[1]

1: BIDMC, Harvard Medical School, Boston, USA

Introduction: Angio-architectural factors affecting early clinical and angiographic outcome after treatment of brain aneurysms using pipeline embolization device (PED) has not been fully studied.

Methods: Aneurysm size, aspect ratio (AR), aneurysm segment tortuosity (AST), aneurysm transition (junctional vs mid-segment), aneurysm-parent artery angle (APA), and number of pipeline curvatures (after deployment) were evaluated for impact on the primary outcome measure, early stagnation. Based on the duration of contrast stagnation inside the aneurysm after deployment of the pipeline, we graded stagnation status as follows: grade 1: arterial phase, grade 2: capillary phase, grade 3: venous phase, grade 4: persistence of crescent after end of venous phase, and grade 5: complete occlusion. Effect of aneurysm segment tortuosity on intraoperative and postoperative complications was further evaluated using a Chi2 method for the categorized data analysis. A multivariate analysis was also performed to report adjusted statistical outcomes.

Results: Forty-five patients with fifty-six aneurysm with mean age 56.25 (±9.74) years, 84.9% females, a mean aneurysm size of 8.93 (±6.11) mm and average aspect ratio (AR) of 1.75 (+1.12) were included in this analysis. Larger the size of aneurysm and higher the aspect ratio were both significantly associated with higher grades of early stagnation in both crude and multivariate analysis ($p< 0.01$). On the other hand, aneurysm transition ($p=0.892$), APA ($p=0.513$), AST ($p=0.337$), number of pipeline curvatures ($p=0.592$) was not significantly associated with higher rate of early stagnation. Moreover, AST was also not significantly associated with intraoperative complications or postoperative neurological deficit ($p=0.226$, $p=0.259$, respectively). Mean stagnation grade significantly increased from3.54 in early postop period to 4.33 after a mean follow up of 5.14 months (Paired t-test $p<0.01$). However, there was no significant association between early and late stagnation grades ($p=0.17$).

Conclusion: Aneurysm size and aspect ratio are the only angio-architectural factors affecting the early stagnation status after treatment of brain aneurysms using flow diversion stents. Long term Follow up will be required to see if stagnation translate into continued occlusion of aneurysms.

Cervical Magnetic Resonance Imaging (MRI) Findings in Patients with Neck Pain; A Cross Sectional Study in Southeast of Iran

Mohammad Safdari[1*], Zahra Safdari [2],Sadegh Sadeghi Ferezghi[1], Mohammad Shirdeli[2], Zohre Safdari[3], Masoud Pishjoo[4]

1. Department of Neurosurgery, Zahedan University of Medical Sciences, Zahedan, Iran.
2. Department of Radiology, Zahedan University of Medical Sciences, Zahedan, Iran.
3. Resident of Radiology, Zahedan University of Medical Sciences, Zahedan, Iran.
4. Resident of Neurosurgery, Mashhad University of Medical Sciences, Mashhad, Iran.

Abstract

Aim: Neck pain is a common problem in human societies; around 67-70% of adults experience it throughout their lives. There is much controversy in the literature about chronic neck pain causes and the role of imaging in the evaluation of it. In this study, we aimed to investigate the MRI findings in patients with neck pain.

Materials &Methods: This cross-sectional study was conducted in 2015 in Zahedan, Iran. The study population was consisted of the patients with neck pain, in which a total of 700 patients were studied. After the MRI imaging, the study subjects were asked some questions and the required information was collected.

Results:32.3% of the subjects were males and the average age of the participants was 35.62±10.15 years. 76.8% of people had chronic pain and also 86.4% of people didn't show any abnormal finding and in the rest of them spondylosis and trauma were the most common abnormal causes. Disc bulging and protrusion were the most common finding and C_3-C_4 and C_4-C_5 were the most common level of these damages.

Conclusion: In this study, like previous studies, the most common causes of neck pain were non-specific causes and they followed by spondylosis and neck trauma.

Key words: Cervical - MRI - Findings - Neck Pain

Alloplastic cranial reconstruction with hydroxyapatite: prospective styudy versus autologus bone and retention magement after septic complication

Reza Ghadirpour (1), Corrado Iaccarino (1), Edoardo Viaroli (2), Marco Fricia (3), Elena Serchi (4), Tito Poli (5), Pier Paolo Mattogno (6), Bruno Zanotti (7), Silvio Bellocchi (8), Giulia Pastorello (9), Francesco Sgulò (10), Franco Servadei (11)

1 Emergency Neurosurgery – IRCCS "ASMN" of Reggio Emilia – Reggio Emilia, Italy
2 Department of Clinical Neurosciences, Service of Neurosurgery, University Hospital of Lausanne (CHUV), Lausanne, Switzerland
3 Department of Neurosurgery, Cannizzaro University Hospital, Catania, Italy
4 Neurosurgery Unit, IRCCS Neuroscience Institute, Bologna, Italy
5 Unit of Maxillo-Facial Surgery, Department of Biomedical, Biotechnological and Translational Sciences (S.Bi.Bi.T.), University of Parma, Parma, Italy
6 Institute of Neurosurgery, A. Gemelli Hospital, Rome, Italy
7 Neurosurgery Clinic, University of Udine, Reggio Emilia, Italy.
8 Neurosurgery Unit ASST Lariana Sant'Anna Hospital of Como, Italy.
9 S.C. Neurochirurgia, Department of Neurosurgery, Azienda Sanitaria Universitaria Integrata di Trieste, University Hospital of Trieste, Trieste, Italy.
10 Department of Neuroscience, Neurosurgery Operative Unit, Benevento, Italy
11 Department of Neurosurgery, Humanitas University and Research Institute, Milan, Italy

Background: When autologous bone is not available or must be replaced, an alloplastic cranioplasty is required. No agreement has been reported about the best material for heterologous cranioplasty, neither about the material with a significant lower risk of septic complications. This is due to extremely heterogeneous prognostic factors related not only to the material used but also to the surgical procedures and/or to the patients features.

Materials And Methods: Patients older than 14 years who underwent repositioning of autologous bone or 3-dimensional image-guided reconstruction with prostheses made of an alloplastic material after cranial decompression were enrolled prospectively from January 2008 through December 2013. The collected data included the prosthesis material, the type of cranioplasty (primary or secondary), and complications that required surgical removal of the prosthesis. More recently four cases of severe septic complication following cranioplasty with porous hydroxyapatite (HA) prosthesis are observed. Patients were conservatively treated, without heterologous bone flap removal.

RESULTS: 96 patients met the prospective study criteria. Fifty cases were reconstructed with HA, 31 with bone, 13 with polymethylmethacrylate, and 2 with polyetheretherketone. Seven patients (7.3%) developed complications related to the cranioplastic implant that required reoperation. Statistical analysis showed a higher rate of complications with the use of autologous bone versus alloplastic materials (P = .03).

Among four patients presented reasons for delaying HA cranioplasty removal: Patients 1, 3 and 4 had an associated shunted hydrocephalus and the need for non- removing the prosthesis was related to the predictable recurrence of overshunting and/or sinking skin flap syndrome. In case 2 the patient refused revision surgery. In all cases systemic and/or radiological signs of infection were observed. In Case 2 the infective process surrounded completely the HA prosthesis, while it was located in the epidural region in Case 1 and 4. In Case 3 a surgical curettage of the infected wound was performed over the HA prosthesis. Following prosthesis retention management with antibiotic therapy, all patients revealed systemic and/or radiological signs of sepsis resolution at follow-up

Conclusions: cranioplasty conducted using alloplastic 3-dimensional reconstruction materials have a lower rate of complications than those conducted using autologous bone. The possibility to avoid a prosthesis removal with effective antibiotic treatment is mainly due to the combination of three factors: targeted antibiotic therapy, good anatomical area revascularization (resulting of an “in situ” intake of antibiotics), and the biomimetism of HA prosthesis. Further investigations in a larger number of cases need to confirm these observations.

Subsets of glial lesions defined by molecular genetic analysis

Ahmad Pourrashidi Boshrabadi, Maysam Alimohamadi, Abbas Amirjamshidi, Seyed Ebrahim Ketabchi, Mohamad Shirani, Kourosh Karimi Yarandi

Address: Tehran, Hasan abad square, Sina hospital, E-mail: purrashidy_68_2008@yahoo.com

Introduction: Gliomas are the most common primary tumors of the brain. Literature shows several markers that have role in outcome or response to the treatment among these tumors. In this article, we evaluated some markers in patients with glial tumors and compared their outcome.

Materials and methods: This is a prospective cohort study that enrolled 18 patients with newly diagnosed glioblastoma multiform (GBM). They were operated and were reviewed for six parameters including BRAF mutation, TERT (Telomerase reverse transcriptase) mutation, MGMT (O6-methylguanine-methyltransferase) metylation, EGFR (epidermal growth factor receptor) amplification, (Isocitrate dehydrogenase) IDH1, and IDH2. All the patients were followed just post operative period, 1 month, 3 month, 6 month, and 1 year later.

Results: 18 patients with GBM were evaluated. 8 of them were female and the others (10) were male. Mean age of patients was 48.5 (ranging from 28 to 69 years old). Ten cases underwent awake craniotomy. 4 patients died that two of them were early post operative period, and two of them in one year follow-up. Extend of resection (EOR) had ranging from 55% to 100% with mean EOR 77.5%. In molecular genetic analysis, MGMT metylation was negative (less than 10%) in 5 cases (20.8%). BRAF oncogen was not mutated in our patients except one case. It should be mention that only early recurrence (1 month after operation) was seen in single case that had positive BRAF oncogen. This patient suffered massive recurrence and operation was done again. Only four cases (16.6%) have positive TERT mutation. All patients were negative for EGFR amplification, 45.8% were IDH1 mutant, and no one was mutant for IDH2. Three patients had no recurrence in 1 year follow-up. These 3 cases were positive for MGMT metylation and IDH1, whereas the other markers were negative.

Conclusion: A strong trend toward longer OS and PFS was seen in patients with higher MGMT methylation rate and IDH-1 mutation. Although only seen in 2 patients, our results suggest a strong growth potential for GBMs with TERT mutation.

Keywords: glioma, biology, genetic biomarkers

Comparison of Subtemporal transtentorial with reterosigmoid approach for petroclival meningioma

Dr. Afsoun Seddighi, Dr. Amir Saied Seddighi

1-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.
2-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.

Introduction: Petroclival meningiomas are technically challenging lesions. Although the standard retrosigmoid approach is one of the most effective approaches, this route may have some limitations for the tumors extending into the supratentorial region and middle cranial fossa. Sub temporal transtentorial approach is a less aggressive skull base approach and could provide sufficient exposure for the petroclival area and has additional advantages for a selected group of patients. We aim to compare and summarize our experience with the subtemporal transtentorial approach for resection of petroclival tumors compared with retrosigmoid approach.

Material and Methods: From 2007 to 2017, 20 patients with petroclival meningioma who were operated with subtemporal transtentorial approach were compared with 20 other cases with petroclival meningioma who were treated with retrosigmoid approach.The cases were matched according to sex, age, tumor size neurologic status and the two groups were compared according to the extent of resection and post-operative morbidity and mortality.

Results: In the first group who were treated by subtemporal transtentorial approach, total resection was performed at a rate of 80%. 15% patients suffered from varying degrees of postoperative nerve dysfunction, about 80% improved, during the 6 to 24 month post-operative follow up. In the second group who were treated with reterosigmoid approach, we achieved total resection of the meningioma in 45%of cases.And most frequently encountered early surgical complication were related to cranial nerve paresis (65%). Most of them were transitory (69%). Mortality occurred in 2 cases in the first and 3 cases in the second group.

Conclusion: The subtemporal transtentorial approach is one of the best approaches for resection of petroclival tumors, especially for a tumor at the petrosal apex and upper-middle clival region, and has the advantages of less trauma, easy procedure of craniotomy, and also a good surgical exposure.

Keywords: Microsurgery, Subtemporal transtentorial approach, Petroclival tumor

Intraoperative monitoring of facial motor evoked potential (MEP) in large acoustic schwannoma surgeries.

Arami MA, Shirvani M, Sharifi G, Samadian M.

Neurologist, Tehran. Milad General Hospital
arami_ma@yahoo.com

The preservation of facial nerve function is one of the primary goals in large acoustic schwannoma surgeries. We present our method of continuous intraoperative facial motor evoked potential (MEP) monitoring and criteria for the preservation of facial nerve function.

Our study included 15 patients with large tumors who undergo facial MEP monitoring during surgery. We stimulated the facial motor cortex during tumor resection. Concomitant Electromyography were recorded from the contralateral orbicularis oculi- and orbicularis oris muscles. The patients were followed by researchers for about one year every 3 month to evaluate outcome of facial nerve function.

Our results showes that continuous facial MEP monitoring helps to predict postoperative facial nerve function and it is an additional useful modality for facial nerve monitoring during acoustic neuroma surgery. We recommend facial MEP monitoring in all large cerebellopontine angle tumors like this region schwannoma.

Endoscopic assisted, controlled micro suctioning of intra ventricular brain tumor

Ahmad soltani

Shiraz University of Medical Scinces
drahmadsoltani@gmail.com

Deep brain tumor biopsy usually performed by stereotactic biopsy, Stereotactic biopsy of intra ventricular mass caries a significant risk of hemorrhage from ependymal layer of ventricle or any injury to vasculatures of the tumor and surrounding area because it is performed blindly and the target cannot be seen change the entry point over the tumor surface accordingly. Endoscopic approaches for intra ventricular tumor offers a direct visualization of tumor and biopsy but due to the small size of biopsy forceps, repeated sampling is needed to obtain a sufficient sample that could potentially increase the risk of hemorrhage and there are reports that show less diagnostic results in endoscopic biopsy compare to the stereotactic biopsy.

Here we introduce a method in endoscopic biopsy in which the assisted controlled micro suctioning of certain tumor make it possible to more safely obtain a larger amount of tissue sample and even in some selected cases of well circumscribed suctionable tum , near total intra capsular tumor removal can be done . We oporated 27 case of interaventricular lesion and obtain sufficient sample with no significant hemorrhage.

Key word: Endoscopic biopsy ,stereotactic biopsy , interaventricular mass ,hemorrhage

Intra abdominal pseudocyst after ventriculoperitoneal shunting

SeyedAli Mousavinejad

alimousavi65@yahoo.com

Background: since 1905 ventriculoperitoneal has been used in patient with hydrocephalus.abdominal complication occure in 5-20% of patient.abdominal pseudocyst is a rere complication after VP SHINT.

Case: A 10-year-old girl had undergone a VP shunt for hydrocephalus and posterior fossa cyst at 2 years of age and shunt revision 2 years later.

She presented in our emergency department with abdominal distention and vomiting. Abdominal examination revealed a moderate distension without any tenderness.Systemic examination was normal. Ultrasound examination of the abdomen revealed gross amount of encysted fluid with internal septations and tip of shunt catheter within it. Abdominal CT scan show massive, loculated cyst like structure in the peritoneal cavity at the distal tip of VP shunt.her brain CT scan showed normal ventricular size. Shun removed and cyst excision with laparotomy with dranage of about 2 liter fluid was done.the patient admitted to icu for 5 days. CSF obtained from cyst and shunt was sterile.

Conclusion: Abdominal pseudo cyst formation at distal end of VP shunt can result in both features of shunt malfunction and abdominal signs and symptoms. Post VP shunt pseudo cysts whenever suspected should be evaluated properly by imaging. Open exploration should be performed to manage the cyst.

Collision of different types of meningioma in one patient: A case report and review of literature

Amir Azarhoamyoun, M.D

Sina trauma and surgery research center, TUMS, Tehran, Iran
Dr.azarhomayun@gmail.com

Objective: To report a rare case of collision of two different types of meningioma in 60 years old female.
Methods: A 60-year-old woman with history of hypertension presented with Headache and blurred vision.Her MRI revealed an extra-axial lesion in Right frontal region.The patient underwent craniotomy and two distinct lesion was removed.
Results: The patient had no new deficit after surgery and discharged two days after surgery. The pathologic examination of tumor showed Fibroblastic (fibrous) meningioma type and microcystic type distinctively.
Conclusion: The collion of different tumors such as meningioma and pituitary adenoma or meningioma and glioma or metastatic tumor and meningioma have been reported in the literature.To our best knowledge this is the first report of collision of different types of meningioma the literature.
Keywords: Meningioma, collision tumor, Brain tumor

Efficacy and Safety of Adenosine-Induced Transient Asystole for Complex Intracranial Aneurysm Clip Ligation

Abdolkarim Rahmanian MD[1], Mohammad Ali Sahmeddini MD[2], Saman Asadi MD[3], Mohammadhossein Eghbal MD[2], Fariborz Ghaffarpasand MD[1]

[1]Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran.
[2]Department of Anesthesiology, Anesthesiology and Critical Care Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.

Background & Aim: In surgical clip ligation of intracranial aneurysms, when temporary arterial occlusion of the parent artery is difficult for anatomical reasons, or when inadvertent aneurysmal rupture occurs during surgical dissection, adenosine administration can be used to produce transient asystole and flow arrest and brief, profound systemic hypotension that can facilitate intracranial aneurysm clip ligation. There is a concern, however, that the flow arrest and profound hypotension produced by adenosine, although brief, may cause cerebral ischemia and therefore worsen neurologic outcome compared with other techniques to facilitate aneurysm clip ligation. Therefore, we aimed to report the efficacy and safety as well as the functional outcome of patients with complex intracranial aneurysm undergoing surgical clipping using the adenosine-induced transient asystole.

Methods: This retrospective cross-sectional study was conducted during a 7-year period in Shiraz, Iran. We included 10 patients with complex intracranial aneurysms undergoing microsurgical clip ligation after adenosine-induced transient asystole. The baseline characteristics (demographic, Hunt and Hess, Fisher and GCS) were recorded. The Glasgow Outcome Scale and Modified Ranking Scale were recorded, 3 and 6 months after the surgery.

Results: The mean age of the patients was 48.2 ± 10.6 years. There were 7 (70.0%) women and 3 (30.0%) men among the patients. There were 5 (50.0%) ophthalmic segment aneurysm and 3 (30.0%) basilar tip aneurysms among our series. The outcome determined by GOS was good recover in 8 (80.0%) patients, moderate disability in 1 (10.0%) and death in 1 (10.0%). The outcome determined by MRS was no symptoms in 8 (80.0%) patients, slight disability in 1 (10.0%) and death in 1 (10.0%). None of the patients experienced adverse effects.

Conclusions: When used to facilitate intracranial aneurysm clip ligation, adenosine-induced transient asystole was associated with no more than a 10.0% mortality and no increase in the incidence of a poor neurologic outcome in patients. In addition, adenosine use was not associated with cardiac morbidity in the postoperative period.

Keywords: Adenosine; Transient Asystole; Complex Intracranial Aneurysm; Surgical Clip Ligation

Microsurgical decompresion for traetment of hemifacial spasm; surgical consideration and outcome

Mohammad Samadian, Mohammad Hallajnejad, Amirarsalan amin, Omidvar rezaei

Abstract

Primary hemifacial spasm (HFS) is a disorder that causes frequent involuntary contractions in the muscles on one side of the face, due to a blood vessel compressing the nerve at its root exit zone (REZ) from the brainstem. Numerous prospective and retrospective case series have confirmed the efficacy of microvascular decompression (MVD) of the facial nerve in patients with HFS. However, while MVD is effective, there are still significant postoperative complications. In our study, recent technological advances related to MVD (such as lateral spread response, brainstem auditory evokes potential and surgical techniques) are reviewed for the purposes of improving MVD treatment efficacy and reducing postoperative complications.

Keywords: Hemifacial spasm (HFS), Microvascular decompression (MVD), Lateral spread response

Surgery of Craniosynostosis; Experience of 180 cases

Masoudi, M.S[1], Ramezani, H[2], Shamspour, S.Z[2]

1. Assistant Professor of Neurosurgery, Shiraz Department of Neurosurgery, Division of Pediatric Neurosurgery
2. Resident of Neurosurgery, Shiraz Department of Neurosurgery, Division of Pediatric Neurosurgery

Craniosynostosis is the premature closure of cranial sutures which affects approximately 1 in 1800 to 3000 live births worldwide. The main goal of surgical intervention in these patients is to allow cranium to develop normally. Currently, surgical intervention is in late infancy is suggested which enhances the efficacy of surgery and allows reshaping of the cranial vault. Many attempts have been made to improve the outcome, however, surgery of these patients is still challenging, though attractive! Here, we present our experience and strategies which we have employed for 180 cases of Craniosynostosis. Our strategies include team work and co-management by a neurosurgeon, a plastic surgeon and a neuroanesthesiologist, pre-op precautions to reduce bleeding during surgery, et cetera.

Keywords: Craniosynostosis, Surgical intervention, Neurosurgery, Plastic surgery

A Practical review of the filum terminal myxopapillary ependymoma versus ependymoma of the conus medularis

Eshagh Bahrami, Seyed Ali Ahmadi

1-Assistant prof of NS at IUMS,Department of Neurosurgery, Rasoul Akram Hospital Complex, Niyayesh St, Sattarkhan St, Tehran,
2-Assistant prof of NS at ARAK UMS.
bahrami_eses@yahoo.com

Introduction: Myxopapillary ependymoma of the filum terminal is classically eradicable by a clean microsurgical operation but this is not the case for the tumors which are located from L1-L4. The significant unsolved problem associated with these tumors are the intermediate or late recurrences focally or along the spinal cord with or without application of post-op radiation.
Material/Method: we decided to review our 3 cases and at the same time review the articles. In our personal experiences, the following points regarding such a pathology in the region of L1 to L4 could support us to be sure that eradication of the tumor has been achieved or not and so in that basis to predict the accurate prognosis.
Conclusion: case study including pre-op and early post-op (G+ & G-) MRI + full detection of FT pre-op and intra-op, literature review and F/U are going to be helpful and promising in our cases.

Cortical based Trajectory Screws: Emerging Less Invasive Spinal Fusion Technique

Payman Vahedi[1,2], MD, Srinivas K. Prasad[3]

[1] Assistant Professor of Neurosurgery, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran

[2] AANS/CNS International Spine Fellow, Department of Neurological Surgery, Thomas Jefferson University, Philadelphia, PA

[3] Associate Professor of Neurosurgery, Department of Neurological Surgery, Thomas Jefferson University, Philadelphia, PA
payman.vahedi@gmail.com

Pedicle screw fixation is currently regarded as the standard technique in spine fusion; however critical concerns exist regarding their role in the fragile spine. As trabecular bone is affected primarily in osteoporotic patients, the fixation strength of these screws is less than optimal and increased rates of failure have been reported in attempted cases.

Cortical bone trajectory (CBT) screws have been recently added to the neurosurgical armamentarium as an alternative to defeat the drawbacks of traditional pedicle screws in osteoporotic spine. Contrary to traditional pedicle screws, CBT screws have the advantage of all-cortical path through the pedicle and vertebral body and thus seem to perfectly address loosening and pullout rates in osteoporotic vertebrae. This novel instrumentation technique follows a laterally oriented path in the transverse plane and a superiorly directed tract in the sagittal plane (up and out trajectory). The more medially and inferiorly placed starting point has also the advantage of lesser tissue dissection and obviates the need to expose transverse processes, which diminishes blood loss, operative time and facilitates recovery. This modified technique would provide enhanced screw purchase and interface strength independent of trabecular bone mineral density, which may be advantageous in the setting of compromised bone. Herein, we demonstrate the detailed technique and discuss the potential grounds as indications and contraindications.

Traumatic Atlantoaxial Dislocation with Odontoid Fracture: A case report

Dr. Hamid Jangiaghdam

Address: Department of Neurosurgery Azarbaijan Hospital urmia Iran
Hamid.jangiaghdam@gmail.com

I am reporting a case of traumatic atlantoaxial dislocation associated with an odontoid fracture. This injury combination is rare and serious because of its resulting instability. After an unsuccessful attempt at closed reduction with traction, an open reduction with occipitocervical fixation was performed using a posterior approach. Based on my experience and a review of the published literature, the method for managing such an injury is discussed. If closed reduction with traction is successful, subsequent treatment is based on the algorithms for isolated odontoid fractures. If the closed reduction fails, surgical treatment consists of an open reduction using a posterior or lateral retropharyngeal approach, and then fixation of Occiput -C1-C2 which is the key procedure.

Results of surgical site infections in patients undergoing posterior spinal surgery of using vancomycin powder

Shafizad Misagh MD *, Shafiee Sajad*

Mazandaran university of medical sciences*
mi.shafizad@ gmail.com

Introduction: Surgical site infection (SSI) is one of the most important post-surgical complications. Various studies have investigated the effect of Vancomycin powder, which has controversial results. The aim of this study was to investigate the effect of topical vancomycin in preventing site infections in posterior spinal surgery.

Method: In a double-blind clinical trial, 200 patients were randomly divided into two intervention groups (including vancomycin powder) and control (non-use of vancomycin powder). In the case group, at the end of the surgery, before the closure of the wound, 1 g of vancomycin powder was used locally in wounds below 10 cm and 1.5 g for wounds greater than 10 cm. In both groups, 1 g of cefazolin was administered before surgery and Injured 24 hours after surgery. All patients were examined again for two weeks, one month and two months after surgery, and the condition of the wound was examined for infection. In cases of suspected surgery site infections, including the secretion and opening of the wound, from the site of operation of the secretions culture was used to confirm the presence of the infection. The data collected was analyzed by SPSS 23.

Results: Gender, age, body mass index, type of injury, surgical technique, duration of surgery, duration of infection, postoperative hemorrhage, infection rate at weeks 2, 4 and 8 after surgery, necrosis rate, ESR level and There was no significant difference in CRP level between the two groups (P> 0.05). However, the degree of dehisence of the wound was higher in the vancomycin group (P0.041). There was no significant correlation between the incidence of infection and sex (P> 0.05). In the case of age, only patients with vancomycin group were significantly older than the other patients (P = 0.038). Increasing BMI significantly increased the incidence of infection in both week 2 and week 4 in both groups (P <0.05). There was no correlation between the type of postoperative injury and post-surgical infection and the type of surgery with post-surgical infection (P> 0.05). However, an increase in the length of antisense in both groups was associated with an increased incidence of infection (P = 0.001). The incidence of infection in weeks 2 and 4 was significantly higher in patients with longer duration of surgery (P <0.05). Increasing the rate of bleeding in both groups was associated with an increase in the incidence of infection (P = 0.001).

Conclusion: The results of this study showed that increasing age, increasing body mass index, increasing insensitive length, longer surgical period and higher bleeding rate with higher incidence of ulcerative infection. Also, the use of vancomycin powder did not have an effect on reducing the incidence of spinal surgical site infection, but the degree of dehisence was higher in the group receiving vancomycin.

Key words: Surgical wound infection, spinal column, complications, ancomycin

Mimicking cerebrovascular accident by Spontaneous epidural hematoma of cervical spine; a case report

Mohammad Jamali[1], Sepehr Entezam[2], Sulmaz Ghahramani*[3]

1- Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran
2- Student Research Committee, Fasa University of Medical Sciences, Fasa, Iran
3- Health Policy Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran

Objective: Herein is report of a case of a 57 years old female with controlled hypertension who presented with Spontaneous spinal epidural hematoma (SSEH) mimicking cerebrovascular accident (CVA) and treated successfully by surgical decompression.

Methods: A 57-year-old woman with a past medical history of hypertensionpresented with sudden onset weakness in the right upper & lower extremity. Weakness of grade 3/5 was noted in her right upper & lower extremity while there was no motor weakness of right facial muscles operation. Magnetic resonance imaging (MRI) of cervical spine revealed epidural hematoma extending from C5 to C7 causing spinal cord compression.

Results: During surgery about 5 cc epidural hematoma was evacuated.Post-operative, the power in both limbs improved to grade 5/5 just after surgery.

Conclusions: High degree of suspicion and meticulous history taking and physical examination has great importance in these rare conditions because anti-coagulant therapy as a routine treatment for ischemic CVA could be life threatening.

Key words: spontaneous, spinal epidural hematoma, cervical spine

The Role of hypocalcemia as a prognostic factor in mortality and morbidity in patients with moderate to severe brain injury

Shafizad Misagh MD, Shafiee Sajad

mi.shafizad@ gmail.com

Importance of the issue and the necessity of the project: Based on the definition of the Centers for Disease Control and Prevention (CDC) traumatic brain injury is defined as a disturbance in brain function following head injury or penetrating injury by. Traumatic brain injury is a major public health problem. This is despite the fact that 1.7 million new people per year suffer only in the United States. In 2010, 3.5 million people died of brain damage and 50,000 people died of traumatic brain injury. Despite the advances in technology and the recognition of molecular cells in the pathophysiology of traumatic brain injury, there is currently no diagnostic method to predict mortality in patients suffering from this condition. Considering the pathophysiology of neuronal damage following traumatic brain injury, many markers have been developed to predict and determine the prognosis of mortality in these patients.

Objectives of the project: The main goal of this study was to investigate the role of hypocalcemia (defined with calcium less than 8.5 mg/dl) on the third day as a prognostic factor in the mortality of patients with moderate to severe brain damage.

*Mazandaran university of medical sciences

Effect of Tranexamic Acid on Prevention of Hemorrhagic Mass Growth in Patients with Traumatic Brain Injury

Esmaeil Fakharian* - Masoumeh Abedzadeh** - kalahroudi - Fatemeh Atoof***

*Professor of Neurosurgery; Trauma Research Center, KashanUniversity of MedicalSciences, Kashan, Iran

**Assistant Professor of Trauma; Trauma Research Center, Kashan University of Medical Sciences, Kashan, Iran

***Assistant Professor of Biostatistics; Trauma Research Center, Kashan University of Medical Sciences, Kashan, Iran

e.fakharian@gmail.com

Background: Intracranial hemorrhage (ICH) is a common complication of traumatic brain injury (TBI). The purpose of this study is evaluation of the effect of Tranexamic Acid (TXA) on hemorrhagic mass growth in TBI patients.

Patients and Methods: In this randomized double blind clinical trial, 149 patients with TBI and any kind of blood on their CT scan, enrolled to the study and randomly allocated to receiving TXA or placebo. After 24 hours, CT scan was repeated for assessing the changes in hemorrhage, new bleeding, and mass effects of the blood on the brain tissue. The primary outcome was growth of the hemorrhagic lesion. Data were analyzed by SPSS software using Fisher Exact, Chi-square and Mann Whitney U tests as well as linear and logistic regression models.

Findings: The incidence of hemorrhagic lesion growth was 20.5% in TXA group and 22.7% in placebo and the difference was not significant [(p=0.87) RR=0.89].The mean (SD) of hemorrhagic lesion growth was 9.4 (15.3) in the TXA group and 10.2 (10.1) in the placebo group without significant difference (p = 0.27). The frequency of deaths (2.7% versus 4%), the adverse outcome at discharge (10.8% vs. 17.3%) and three months later (6.8% vs. 14.7%) in the TXA group was lower than the placebo, but the difference was not statistically significant. No side effect was observed with the administration of TXA

Conclusion: Administration of a short dose of TXA does not lead to significant prevention of growth of post-traumatic hemorrhagic lesion or improvement of clinical outcomes.

Keywords: Intracranial hemorrhage - Traumatic Brain Injury - Tranexamic acid

Neuroprotective Effects of Minocycline and Melatonin against Traumatic Spinal Cord Injury in Rats

Reza Hamed Gholamshahi

Hacettepe Ünıversıty, Faculty of Medıcıne, Department of Neurosurgery

Abstract

Objective(s): Spinal cord injury (SCI) often causes serious and irreversible neurological deficit leading to disability or impairment of normal physical activity.This experimental study was performed to investigate the benefit of minocycline and melatonın via neuroprotective effects on spinal cord injury (SCI) ın rats.

Materials and Methods: Twenty male adult Sprague - Dawley rats weighted between 225 - 275 grams were randomized into four groups. SCI was performed by the weight - drop model.Group 1 underwent laminectomy followed by SCI and received no medication. Group 2 underwent laminectomy followed by SCI and received melatonin (10mg/kg sıngle doz intrperitoneally). Group 3 underwent laminectomy followed by SCI and received minocycline (50 mg/kg twice daıly for 3 days intraperitoneally). Group 4 underwent laminectomy followed by SCI received melatonin (10mg/kg sıngle doz intrperitoneally) and minocycline (50 mg/kg twice daıly for 3 days intraperitoneally). 7 days later Tissue samples were evaluated for apoptosis, inflammation, and oxidative stress, along with histopathological examination and neurological evaluation. Tıssu samples were obtained from all rats; malondialdehyde(MDA) and oxidized glutathione, İNOS, eNOS, AFAF-1 levels were determined, and obtained results were comapred.

Results: MDA and Oxidized glutathione levels in group 4 was lower than in the control group ($p<0.05$). Similiary administration of melatonin and minocycline (group 4) significantly reduced (İNOS,eNOS and APAF-1) levels compared to the control group ($p<0.05$).

Conclusion: The results of the present study showing meaningful neuroprotective effects of minocycline and melatonin in SCI through anti-apoptotic, anti-inflammatory, and antioxidant effects by reducing lipid peroxidation, which was confirmed by biochemical, histopathological and the functional evaluation.

Key word: Spinal cord injury, Minocycline, Melatonin, Apoptosis

Correlation between the Fibrinogen Level and Re-Operation in Patients with Traumatic Brain Injury undergoing Decompressive Craniectomy

Hosseinali Khalili*, Amin Niakan, Fariborz Ghaffarpasand

*Presenting Author; Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran.

Background and Aim: Several lines of evidence demonstrate that coagulopathy which occurs in patients with traumatic brain injury (TBI) is associated with poor outcome. The fibrinolysis during the early stage of TBI results in increased risk of hemorrhage and re-operation. The aim of the current study was to determine the correlation between the fibrinogen level and reoperation due to formation of the intracranial hematoma in those undergoing decompressive craniectomy due to TBI.

Methods: This cross-sectional study was conducted during a 2-year period from 2014 to 2015 in Shahid Rajaei (Emtiaz) hospital, a level I trauma center in Southern Iran affiliated with Shiraz University of Medical Sciences. We included all the patients with TBI who underwent decompressive craniectomy in our center during the study period. The initial serum level of fibrinogen was determined. All the patients were followed and the rate of the re-operation due to formation of intracranial hematoma was recorded. The Data was analyzed according to the level of fibrinogen regarding the outcome measured by –month Glasgow outcome scale (GOS), hospital length of stay and ICU admission duration.

Results: Overall we included a total number of 413 patients with mean age of 37.78 ± 17.2 years. There were 355 (86.2%) men and 58 (13.8%) women among the patient. The mean GCS on admission was 7.92 ± 3.54. Overall 67 (16.2%) patients underwent re-operation among whom 31 (7.5%) underwent the same side surgery and 36 (8.7%) underwent contralateral operation. We found that those undergoing reoperation had significantly prolonged INR (p=0.042), longer hospital (p=0.002) and ICU length of stay (p=0.048) while level of fibrinogen (p=0.827) and GOS (p=0.131) was comparable.no correlation was found between the serum fibrinogen level and the rate of re-operation as well as the outcome.

Conclusion: The results of the current study demonstrates that the initial serum level of fibrinogen does not predict the rate of re-operation and the final outcome. Further studies measuring serial serum fibrinogen level is recommended.

Keywords: Traumatic Brain Injury; Decompressive craniectomy; Fibrinogen level; Coagulopathy; Outcome

Causes of hemodynamic instability in children after Applying Negative Pressure to epidural Draining catheter after Craniotomy (Negative pressure epidural syndrome)

Mohammad sadegh masoudi.Elahe rezaee

Shiraz University of medical science,Aja trauma research center Tehran IRAN
masoudims@gmail.com

Unexplained death after uneventful neurosurgical intervention is not rare, especially in pediatric patients. Many of these cases can be explained by negative pressure epidural syndrome.Use of negative for prevention of epidural or subgaleal blood collection is a common technique in neurosurgical procedures. utilization of this system unguardedly can created several complications. In this article we report three child that present with hemodynamic instability after a neurosurgical operation.
me (NPES).
I**ntroduction:**lethal suction syndrome (LSS) or NEPS is very dangerous but preventable event in neurosurgical patients especially in children. Good and gentle hemostasis and donot use of negative pressure suction system or use of this system with careful control are major ways for prevention of it. LSS also can be triggered by very low negative pressure stimulation.Manipulation of dura in both infra and supratentorial compartments can provoke this syndrome.

Key words: hemodynamic instability, children, Craniotomy, Negative Pressure

Bilateral V-Y Flap with Latissimus Dorsi and Gluteal Advancement for Repair of Large Myelomeningocele Defects; a Single Center Experience

Mohammad Sadegh Masoudi*, Mohammad Ali Hoghughi, Fariborz Ghaffarpasand, Ghazal Ilami

*Presenting Author; Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran.

Background and Aim: Rapid closure of the back defect in the early postnatal period is mandatory to reduce the frequency of infection-related complications of the central nervous system in patients with myelomeningocele defects. Several methods have been introduced for repair of large myelomeningocele defects. However, the outcome of surgical site results is still not promising. In the current study we report out experience with a novel bilateral V-Y flap with latissimus dorsi and gluteal advancement for repair pf large myelomeningocele defects.

Methods: This cross-sectional study was conducted during a 3-year period from 2014 to 2017 in Namazi hospital, a tertiary pediatric neurosurgery referral center in Southern Iran affiliated with Shiraz University of Medical Sciences. We included all the patients with large myelomeningocele defects referred to our center. All the patients underwent surgical repair of the dural defect. The skin defect was closed by standard bilateral V-Y flap along with unilateral latissimus dorsi and gluteal advancement. Surgery was performed with a neurosurgeon and a plastic surgeon. All the patients were followed for at least 1 year and was checked for wound dehiscence, leakage, flap necrosis, infection and mortality.

Results: Overall we included a total number of 16 patients with mean age of 20.56 ± 19.5 days. There were 9 (56.3%) male neonates and 7 (43.8%) female neonates among the patients. The defect was thoracolumbar in 8 (50.0%) and lumbosacral in 8 (50.0%) patients. The mean length and width of the defect was 7.25 ± 1.84 and 6.1 ± 1.86 cm, respectively. Two (12.5%) passed away due to necrotizing entrocolitis (6.3%) and sepsis (6.3%). CSF leakage was recorded in 2 (12.5%) and 1 (6.3%) developed meningitis. Wound dehiscence was recorded in 1 (6.3%) while surgical site infection was in 5 (31.3%). Overall 7 (43.8%) patients developed hydrocephalus and 4 (25.0%) underwent CP shunt insertion.

Conclusion: Bilateral V-Y flap with latissimus dorsi and gluteal advancement could be an alternative to the conventional methods for repair of large myelomeningocele defects. The method requires experience and joint surgery with plastic surgeons.

Keywords: V-Y flap; Gluteal advancement; Latissimus dorsi advancement; Myelomeningocele; Plastic Surgery

Percutaneous Interventions for Chronic Spinal Pain and Failed Back Surgery Syndrome: A Neurosurgeon's Perspective

Ali Razmkon, MD

Center for Neuromodulation and Pain, Kowsar Hospital, Shiraz, Iran
Faraparto Medical Imaging Center, Shiraz, Iran
ali.razmkon@gmail.com

Introduction: Patients with non-surgical chronic low back pain (LBP), Failed Back Surgery Syndrome (FBSS), or those not tolerating open surgical interventions are usually referred to pain specialists and interventionists for management of chronic pain by percutaneous interventional techniques. Although neurosurgeons must be considered as an integral part of the pain multidisciplinary commission, they are not usually involved in these procedures. In this study, evidence –based approach towards these interventions is discussed, and a case series considering different cases managed by a neurosurgeon will be presented.

Methods: One-hundred twenty patients with either non-surgical chronic low back or radicular pain, or failed back surgery syndrome who failed conservative management, underwent different percutaneous pain interventions. Outcome was assessed at 2 weeks, 8 weeks and 6 months after the intervention. Seven FBSS patients with refractory pain underwent implantation of spinal cord stimulators.

Results: Although the indication and type of the procedures were rather heterogeneous among patients, a strong efficacy was obtained in 84% of patients in short-term (8 weeks). The effects were reduced at 6 months to 67%. Interestingly, there was a high rate of success for patients receiving another treatment previously by a pain specialist.

Conclusion: Interventional pain procedures for the spine remains an integral part of neurosurgeons' skills. Careful selection of the appropriate procedure based on a neurosurgeon's perspective may result in better outcomes.

Giant sacral schwannoma. A case report

Majd Mohseni Birjandi 1, Maryam MoghadamQaeini 2, Zahra SheidaeMehne 2,Mahyar Mohseni Birjandi 3

1.Department of Neurosurgery, Farabi Medical Center, Mashhad, Iran.

2. Student Research Committee, Facuilty of Medicine, Islamic Azad University, Mashhad Branch, Iran.

3.Students Research Committee, Faculty of medicine, Mashhad University of Medical Sciences, Mashhad

Abstract

OBJECTIVES: To present a rare case of giant schwannoma located in the sacrum.Intraspinal schwannomas localized in the sacrum are infrequent, that contain 1-5% of all spinal axis schwannomas.They frequently grow to significant size before detection.Sacral schwannomas originate from the sacral nerve roots.Only a few case reports and have been published.There is no established agreement regarding diagnostic modalities, necessity for histologic diagnosis, or best surgical choice.

Methods:A 32-year-old woman visited the outpatient clinic complaining low back pain, intractable pelvic pain and constipation for twelve years.Her symptoms have been worse during the last several months and there has been no improvement after conservative cares.She had no history of previous surgery or trauma.Neurologic examination was normal.After a histopathologic analysis and a complete set of imaging studies, schwannoma was diagnosed and the resection of the tumoral mass was planned posteriorly.During surgery we have not NCS monitoring equipment to keep the rootlets.Intralesional excision of a sacral schwannoma is a less invasive procedure than total or partial sacrectomy.

Results:The patient underwent surgery to treatment of the lesion, which revealed a solid mass We underwent a grossly-total tumor resection with lumbosacral reconstruction via posterior approach.There was not any unstability in L5-S1 joints. Histopathological examination of the tumor confirmed the diagnosis of schwannoma.During the postoperative course patient has had no significant pain and decreased sensation and motor weakness of lower extremities but she had been suffering from bowel and bladder dysfunction.

Conclusions: This report is a rare clinical entity.A successful surgical outcome depends on early appropriate diagnosis and total excision.According to the complex anatomy of the sacrum, the surgical treatment is a big challenge.

Considering the experience of the few cases reported in the world, the management of this tumor appears to achieve acceptable results.

Keywords: Giant Schwannoma, Sacral, low back pain

Endoscopic trans sphenoid sinus surgery for cushing disease; exprinces of 64 patients

Guive sharifi, Mohammad Hallajnejad, Nader akbari Dilmaghani, Ali mousavinejad, Omidvar rezaei

Background: Endoscopic transnasal approach to pituitary adenoma surgery has been recently introduced as an efficient alternative for traditional transcranial and conventional microscopic transnasal approaches. Surgery for secreting microadenoma has been always a big surgical challenge in term of achieving full treatment especially in Cushing's syndrome.

Methods: In our study we reviewed 64 case of cushing disease(49 female and 15 male). Mean follow up was 21 months.

Results: in 64 corticotrph pituitary adenoma (52 microadenoma and 12 macroadenoma),92% presented with coshingoid phenotype. One patient was presented with osteoprotic fracture and 3 cases presented with nelson sella syndrome. 78% remission rate was achieved in microadenoma and remission rate in macroadenoma was58%.

Conclusions: Endoscopic tss is safe and efficient treatment modality for cushing disease with good remission rate and low morbidity

Keywords: Endoscopic Transplanum Tran intercavernous sinus (ETPTICS), Pituitary, Endocrinological

The Endoscopic Endonasal Resection of Pediatric Craniopharyngiomas: short-term outcomes and technical nuances

Mehdi Zeinalizadeh,[1]Seyed Mousa Sadrehosseini[2]

1- Department of Neurological Surgery, Imam KhomeiniHospital Complex, Tehran University of Medical Sciences, Tehran, Iran.

2- Department of Otolaryngology, Head, and Neck Surgery, Imam Khomeini Hospital complex, Tehran University of Medical Sciences, Tehran, Iran.

Abstract

Object: The majority of pediatric craniopharyngiomas are treated using a transcranial approach.The aim of the study is to assess the feasibility and to describe the short-term outcomes of endoscopic endonasal approach (EEA) for the resection of suprasellar craniopharyngiomas in pediatric patients. Also, we review our experience with EEA and its technical nuances.

Methods: An extended EEA was performed in 8 patients who were 18 years of age or less at the time of surgery. Short-term outcomes were analyzed over a mean follow-up period of 24 months.

Results: All tumors involved the sellar and/or suprasellar space and contained some cystic component. Using a binostril approach, a gross or near total tumor resection was obtained in all patients. All subjects with preoperative visual dysfunction demonstrated postoperative stable or improved vision. New or stable panhypopituitarysm was observed in all cases.

Conclusions: Complete radiologic resection of pediatric craniopharyngiomas can be achieved via a purely endoscopic endonasal approach. New endocrinopathy occurs in the majority of patients and few experience improvement in their preoperative panhypopituitarysm.

Keywords: Craniopharyngioma, Transsphenoidal surgery, Pediatric, Endoscopic endonasal approach

Neuroblastoma cells showed a high capacity for neuro-molecular researches: Promising results for overcoming the hypoxia-reoxygenation-induced impacts on neuronal cells

Malekinejad H[1], Aghazadeh J[2]

[1] Department of Pharmacology and Toxicology, Faculty of Pharmacy, Urmia University of Medical Sciences, Urmia, Iran

[2] Department of Neurosurgery, Urmia University of Medical Sciences, Urmia, Iran

Abstract

Neuroblastoma (Neuro-2a) cells, a mouse neural crest-derived cell line, commonly used in neurotoxicity testing. This cell line is considered to be suitable for neurotoxicity studies due to its high sensitivity allowing an accurate estimate of neurotoxicity in functional assays. We in this study normalized Neuro-2a cells for chemically-induced hypoxia using 2-deoxy glucose and Antimycin A. Cellular endpoints including cell viability, intracellular ATP content, reactive oxygen species and nitric oxide concentrations were analyzed. The expression of hypoxia inducible factor-1 a (HIF-1□) was evaluated by quantitative PCR. Hypoxia resulted in 80% ATP depletion, while more than 80% of the cells remained viable. We also studied the neuroprotective effects of allopurinol on hypoxia-reoxygenation induced cellular injuries. Co-exposure to H/R and allopurinol protected cells from ATP depletion. Allopurinol lowered the hypoxia-induced upregulation of HIF-1□ . Data suggest that chemically-induced hypoxia could be a useful research tool to evaluate neuroprotective agents and that the protective effects of allopurinol against H/R-induced molecular injuries are attributed to the regulation of HIF-1□ .

Key words: Hypoxia; Neurotoxicity; Neuroprotection; Reoxygenation

Intramuscular compared with subcutaneous transposition for surgery in cubical tunnelsyndrome

Mohammadreza Emamhadi*, A Emamhadi S Andalib

Brachial Plexus and Peripheral Nerve Injury Center,, Department of Neurosurgery, Guilan University of Medical Sciences, Rasht,Iran
Emamhadi42@yahoo.com

Background: There is no consensus on the most effective surgical technique in the treatment of cubital tunnel syndrome. Anterior subcutaneous transposition (AST) and anterior intramuscular transposition (AIT) are common surgical treatments. The aim of this study was to compare the clinical outcomes of these two surgeries for cubital tunnel syndrome.
Methods: In a retrospective study, we compared surgical outcomes (pain, sensation, motor recovery, atrophy, and total satisfaction) in 40 patients undergoing AIT and 43 undergoing AST of the ulnar nerve.
Results: The patients undergoing AIT showed a significant improvement in all the outcomes after the surgery (P = 0); however,those undergoing AST only experienced an improvement in pain and sensation after the surgery (P = 0). Comparing the two surgeries, we found that there was a high total satisfaction with AIT compared with AST (P = 0). When we independently compared each outcome in the two groups, we found that the muscle force recovery was significantly improved in the AIT group compared with the AST group (P = 0).
Conclusions: AIT is preferable to AST for the surgical treatment of cubital tunnel syndrome. In particular, AIT achieves a better motor recovery of the ulnar nerve compared with AST.
Keyword: cubital tunnel syndrome, transposition, intramuscular, subcutanous

Impact of Electromagnetic Field with Predatory Stress on Functional and Histological Index of Injured-Sciatic Nerve

Saboory E[1], Tasbih-Forosh M[1], Zarei L[2],Bahrami-Bukani M[3]

[1]Neurophysiology Research Center, Urmia University of Medical Sciences, Urmia, Iran.[2]Department of Anatomoical Sciences, Faculty of Medicine, Lorestan University of Medical Sciences, Khorramabad, Iran.

[3]Student Research Committee, Urmia University of Medical Sciences, Urmia, Iran.

saboory@umsu.ac.ir

Abstract

Introduction and objective: Sciatic nerve injury is commonly seen in clinical practice predominantly associated with trauma or sports injuries. The aim of this study was to assess the effect of combination of pulsed electromagnetic fields (PEMF) with predatory stress on transected sciatic nerve regeneration in rats.

Methods: In sham- operated group (SOG) the nerve was manipulated and left intact. The 10-mm rat sciatic nerve gap was created in rats. In transected group (Transected) nerve stumps were sutured to adjacent muscle and in vein graft group (VG) the gap was bridged using an inside-out vein graft. In VG/PEMF group the transected nerve was bridged using vein graft, phosphate buffered saline was administered into the graft and the whole body was exposed to PEMF. In VG/PS group the transected nerve was bridged using vein graft, phosphate buffered saline was administered into the graft and the rats underwent predatory stress (PS). In VG/PEMF/PS group the transected nerve was bridged using vein graft, phosphate buffered saline was administered into the graft, the whole body was exposed to PEMF and the rats underwent predatory stress. The regenerated nerve fibers were studied within 12 weeks after surgery.

Results: Functional, gastrocnemius muscle mass findings and morphometric indices confirmed faster recovery of regenerated axons in VG/PEMF and VG/PEMF/PS groups compared to those in the other groups (p=0.001). The whole body exposure to PEMF improved functional recovery. Predatory stress did not affect nerve regeneration in the animals undergone predatory stress (p=0.343).

Conclusion: Pulsed electromagnetic fields could be considered as an effective, safe and tolerable treatment for peripheral nerve repair in clinical practice.

Keywords: Functional recovery; Regeneration; PEMF; Predatory stress; Sciatic

Primary central nervous system lymphomas. Our Experience

Noubari A.B., Boschi A., Morone F. Muscas G., Laiso A., Najaran A., Tabahtabai S.A.F., Ammannati F.

Azienda Ospedaliera Universitaria Careggi
Department of Neurosurgery
Via Largo Alinari CTO Italy

Primary central nervous system lymphomas (PCNSL) are rare neoplastic lesion of the brain. It is now known to be a form of extranodal, high-grade non-Hodgkin B-cell neoplasm, usually large cell or immunoblastic type. Usually rare, with a frequency between 0.85 and 2.5% of the CNS tumors, PCNSL is being seen with increasing frequency in immunocompetent patients. The best treatment strategies are not yet identified, and the role of the surgery in the last 5 years seems to have changed. With this work we want to show our experience in the diagnosis and treatment of the PCNSL.

MOVEMENT DISORDER SURGERY

Selçuk Peker

KocUniversityHospital, Department of Neurosurgery, Istanbul, Turkey

Parkinson'sdisease, tremor anddystoniaareamongthemostfrequentneurologicalproblems in theworld. Theyaffectmillions of peopletoday.
Medicaltreatment is theprimarytreatmentfortheseconditions. However in manypatientsmedicaltreatmentbecomesuneffectiveorcausesmanysideeffectsaftersomewhile.
Today, deepbrainstimulation, RF lesioningand gamma kniferadiosurgeryarethesurgicaltreatmentoptionsforthosepatients. Surgery can be appliedwith minimum risk. Thequality of life forthepatientsbecomebetterwiththesetreatments.

HOW GAMMA KNIFE RADIOSURGERY EFFECTED THE PRACTICE OF NEUROSURGERY

Selçuk Peker

KocUniversityHospital, Department of Neurosurgery, Istanbul, Turkey

Withalmost 50 years of experience, gamma kniferadiosurgeryeffectedthepractice of neurosurgerysomuch. Manytumors, vascularmalformationsandfunctionaldisorders can be treatedwithradiosurgery. Forsmallskullbaseorsinusinvadingmeningiomas, vestibularschwannomas, metastasis, deepseatedbenigntumorstodayradiosurgerybecometheprimarytreatmentmethod. Comparingclassicalsurgery it giveslow risk andhighquality of life forthepatients. TodaymanypatientswithAVM'sarereceivingradiosurgeryinstead of surgeryorembolisation. Radiosurgery can be used as a minimallyinvasiveneurosurgicaltechniquefortrigeminalneuralgiaand tremor. Thenumber of theradiosurgerycentersaroundtheworldexceedingexponentially. Thisfactshouldbringthe problem of correctindicationandfollow-up in radiosurgerytothemind.

Correlation curve correction and spinal length gain in patients with adolescent idiopathic scoliosis (AIS)

Mir Bahram Safari, Hasan ghandhari, Ebrahim Ameri, Ali Tabrizi

Urmia University of Medical Sciencess
mirbahramsafari@yahoo.com

Background and objective: The spinal correction and fusion surgery has the potential to increase height by correcting the curvature in scoliosis. Despite its clinical significance particularly in skeletally immature patients, this effect has been rarely investigated. We aimed to examine the relationship between curve correction and spinal length gain in patients with adolescent idiopathic scoliosis (AIS).

Methods: A total of 102 consecutive patients with AIS and the main curves in the thoracic spine who underwent posterior spinal correction and fusion (PSF) alone or in combination with anterior spinal correction and fusion (ASF) were studied. T1-L5 spinal length gain, Cobb angle correction, and T1-L5 spinal length gain/ Cobb angle correction (L/C value) were calculated on pre and postoperative anteroposterior radiographs.

Results: The patients were 80 females and 22 males with the man age of 14.16±15.13 years (range: 10-19). PSF alone and with ASF was performed in 80 and 22 patients, respectively. The L/C value was not significantly associated with sex, fusion approach, or the number of levels fused. The following second-degree equation described best the relationship between Cobb angle correction and T1-L5 spinal length gain (R square=0.16, p=0.001): Surgical T1-L5 spinal height gain in mm = (70.20)-(3.51) × (degrees of Cobb angle correction) + (0.08) × (degrees of Cobb angle correction)2.

Conclusions: A simple, univariate relationship could be demonstrated between Cobb angle correction and increased T1-L5 spinal length gain after spinal correction and fusion surgery in AIS. The type of fusion- PSF versus PSF and ASF significantly affected the mean Cobb angle correction and T1-L5 spinal length gain.

Melkersson Rosenthal Syndrome in a 14-month old girl:a case report

Dr.Ali Riazi

Address: Isfahan University of Medical Sciences, Department of Neurosurgery, Alzahra Hospital
aliriazi1353@gmail.com

Introduction: Recurrent facial palsy is uncommon in children and includes 6% of children with facialpalsy.It can be due to various causes such as infections, truma, malignancy and inflammatory disorders however the majority of cases are idiopathic. Recurrence of facial palsy may be ipsilateral or contralateral to the site of first episode.The mean recurrence interval is about one year and more than four episodes are rare.It has been reported that recurrence is more common in younger patients. Complete resolution has been reported in majority of children with Bell's palsy. Some studies found that ipsilateralrecurrence has a worsen prognosis compared to contralateral recurrence.Melkersson Rosenthal syndrome(MRS) is a rare inherited disorder with the incidence of 0.36 in 100000 per year.MRS has a triad of recurrent facial palsy, facial swelling and fissured tongue and should be considered in differential diagnosis of recurrent facial palsy in both adults and children.

Case presentation: We report a 14-month old girl who presented with sudden onset weakness of left half of the face, no wrinkle on left side of the forehead ,inability to close left eye and and deviation of mouth angle to the right since 3 days ago. She had no fissured tongue and facial edema. She had no history of fever,pain,hearing loss and cold exposuretoo.In her past medical history, she had another two episodes of facial palsy about one months ago and at the age of 11- month old that had resolved with treatment. She had positive family history of recurrent facial palsy in her two elder sisters(3 episodes in each sister that resolved without any treatment).Oral prednisolone,oralacyclovire and artificial eye drops and eye care was started for her and her facial palsy completely resolved in two weeks.

Conclusion: Melkersson Rosenthal syndrome is more common in females and has a familial and genetic pattern. In many cases recurrent facial palsy is the only sign without facial edema and fissured tongue. Melkersson Rosenthal syndrome must be differentiated from recurrent facial palsy because its prognosis is worse than recurrent facial palsy .According to clinical manifestations and family history, ourpatient diagnosed with Melkersson Rosenthal syndrome and was referred for genetic evaluation.

Key words: Recurrent facial palsy, Melkersson Rosenthal syndrome

Poster

The Results of Intraoperative Radiotherapy in Patients with High Grade Glioma

Dr. Afsoun Seddighi, Dr. Amir Saied Seddighi

1-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.
2-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.

Introduction: Malignant gliomas including anaplastic astrocytoma and glioblastoma multiform are the most aggressive and most common primary brain tumours in adults and have extremely poor prognosis and high rates of recurrence.Since the main pattern of recurrence is local proliferation, the local control could significantly increase the survival. Intraoperative radiation therapy deliveres concentrated doses of radiation to the tumor site, sparing healthy nearby parenchyma.

Materials and Methods: From September 2015 to December 2016, all patients with suspected high-grade glioma, referred to the neurosurgical clinic of our hospital were considered and cases with tumors that could be surgically accessible for total resection based on imaging were selected. These patients were randomized into two groups. The first group (cases), were treated by surgery and the adjuvant therapy consisted ofintraoperative radiotherapy plus external beam irradiation. In the second or control group, the treatment protocol consisted of surgery followed by external beam radiotherapy. The surgical outcome, and survival and the quality of high cortical functions were assessed and compared in the two groups.

Results: The two groups were matched in age, sex, tumor size, pathological grade and tumor location. Mean KPS score in anaplastic astrocytoma was 84.5 for the case group and 72 for the control group.. Mean Bartel index for the case group was 18.3 and 16.5 for the control group.The 2 y survival was 48.8% for the case group and 33.3% for the control group. (P value = 0.072)

Conclusion: We found no significant improvement in the two year survival in patients who received intraoperarive plus external beam radiotherapy compared to conventional radiotherapy. Although in the case group the post-operative quality of life was significantly more favorable.Intraoperative radiotherapy should be performed in a specially equipped center and treatment planning should be done precisely to

ensure complete target volume coverage. There is no clear Survival benefit for this radiation modality so far and patients should be included in multicentric study protocols.

Key Words: Glioma, Intraoperative, radiotherapy.

Physiotherapy in Patients with Neuropathic Guillain-Barre Syndrome with Axonal Degeneration: case report

Touba Mamahmoudzadeh[1], katayun Ghorbanalipour[2], Mandana Rezae[3], Mehri Fardis[4]

1. Msc student, rehabilitation faculty, Tabriz University of medical sciences, physiotherapist, Tabriz ostad alinasab hopital
3. Assistant professor, rehabilitation faculty, Tabriz University of medical sciences, mandana.rezae@gmail.com
4. Nurse, razi hospital, Tabriz University of medical science, m.fardis1361@gmail.com
T.mahmoudzadehmscpt@gmail.com

Purpose: Guilin Barre syndrome is known as acute inflammatory demyelinating neuropathy in the peripheral nervous system. Due to the disabling complications of this disease, physiotherapy is very important in this disease. The aim of this study was to report a case of patients with neuropathy syndrome guillain-barre with axonal degeneration and physiotherapy in this patient.

Method: A 12-year-old male patient was diagnosed on april 5, 2016 with severe axonal degeneration and quadriparesis of trunk and extremities with further weakness on the right, especially in the anterior tibialis, proneous lungos and brevis, difficulty in performing fine movement of fingers, imbalance in walking was referred to the physiotherapy clinic. The patient used bilateral ankle orthosis. Physiotherapy was performed for 4 months using training, neuromuscular relaxation techniques and electrical stimulation modalities of the nerves and muscles, with emphasis on reinforcement training flexibility, postural modification, balance and proprioception, skills Hand movement, cardiac endurance, central stability.

Results: After physiotherapy, the strength of the muscles of the lower limb was improved, although the patient still had difficulty walking. Individual trunk and balance control improved and was able to stand on two legs with closed eyes for 10 seconds. Early onset of physiotherapy in this disease is recommended.

Conclusion: Physiotherapy in Guillain's syndrome can be effective in improving the quality of life of patients.

Key words: Guilin Barre Syndrome, Degeneration, Axon, Physiotherapy

Neurolinguistic approach to awake brain craniotomy: A review

Ghazal Akhavan Masoumi, Pourya Kamfar

Address: West Azarbaijan, Urmia, Plain 40, Shahid Aghaie St., Babatier St., Saadi St
ghazalakhavan@yahoo.com

Objectives: Intraoperative direct brain stimulation (DES) is considered as a gold standard treatment for gliomas in critical language areas. Nevertheless, current literature about the linguistic tasks and methods applied during the surgery is limited and no standardized linguistic protocol exists. Available linguistic tasks and methods applied in awake brain surgeries are reviewed in the current article.
Method: Based on the related literature, researchers reviewed and analyzed the techniques applied in language mapping, linguistic tasks, their duration and language processes assessed by task.
Results: Findings suggest that tasks utilized in awake brain surgery are limited and unsatisfactory and little detail and information is provided about the preparation and duration of the tasks. In other words, there are no reliable and standard guidelines to be applied during intraoperative phase of language mapping and there exists no consensus about the appropriateness of tasks used in the awake brain surgery.
Conclusion: Awake craniotomy with DES presents advantages over prior tumor resection methods for patients and surgeons. However, lack of a standard neurolinguistic approach decreases the reliability of this surgery. So, tailoring a standardized protocol that fulfills necessary requirements (reasonable duration and ease of administration) can improve the lesion of the affected site and improve the quality of life in patients.
Key words: Neurolinguistic; Direct brain stimulation; Language mapping

Prevalence of spinal pain (upper and lower) and its related factors in nurses employed in Urmia hospitals

Roya Ebrahimi[1], Shirin Khantan[2*]

1. MSc, in PsychiatricNursing of Islamic Azad University Urmia
2. Nursing Student of Islamic Azad University Urmia

*Corresponding author: nil.khantan@yahoo.com

Introduction: Musculo-skeletal disorder is an occupational disease. It occurs due to the inappropriate conditions in the workplaces. The purpose of this study was to determine the prevalence of low back pain and some related factors in nurses employed in Urmiahospitals.

Methods: This study was cross-sectional and multi-stage random sampling research on 120 nurses employed in Urmia hospitals. International Nordic questionnaire was used with 21 SPSS software and descriptive statistics.

Results: 34.4% had secondary job, and 62.3%, nearly a year after starting nursing, had been experiencing back pain. 82.5% nurses with back pain due to lifting heavy objects or pushing, pulling and moving patients and equipment. Pain in the upper spine (neck and shoulder) between samples 42.3% and the prevalence of pain in the lower spine (lumbar) in the Women was 84.2%.because of this pain 63%nurses were decreased their jobs activity. 73.4% had changed in life style. Based on body mass index (BMI) was determined 72.4% of obese nurses had spinal pain. But there was no significant difference between BMI index and spinal pain. There was a significant statistical relationship between pain and age (p= 0/01), pain and sex (p =0/02), pain and kind of wards (p =0/02), pain and marital status (p =0/00) and pain and work experience (p= 0/01).

Conclusions: The prevalence of LBP among nurses is high and is necessary for proper planning to reduce pain, to organize training and supplying facilities to reduce workload for nurses.

Keywords: Pain, Calumne pain, nurses

Evaluation of histopathologic characteristics of brain tumors in pathology department of Urmia Imam Khomeini Hospital from March 2007 to March 2015

Masoumeh pourjabali*, farzaneh hosseine gharalari and hadi ghaffari

Department of Pathology, Faculty of Medicine, Urmia University of Medical Sciences, Imam Khomeini hospital, Ershad avenue, Urmia, Iran.

m.pourjabali@gmail.com

Introduction: Brain tumors are the third leading cause of patients with neurological problems and these tumors are the most common cause of death in neurological patients after stroke

Materials and Methods: In this cross – sectional, descriptive and retrospective study, the samples of patients with brain tumor sent to Urmia Imam khomeini hospital from march 2007 to march 2015, were collected through referals to the offices of the pathology department and recorded in the checklist and then analyzed.

Results: Among 318 cases with brain tumors, 164 (51.6%) were males and 154 (48.4%) were females. The mean patient age was 47.34±17.69 years.The results for tumor types were as below: Meningioma 124 (39%) the most common brain tumor; astrocytoma 118(37.1%),pituitary adenoma 28(8.8%), metastatic carcinoma 23(7.3%), medulloblastoma 7(2.2%), oligodendroglioma and diffuse large B – cell lymphoma, each with 5(1.6%) cases, craniopharyngioma 3(0.9%), hemangioblastoma 2(0.6%), each of ependymoma, neurocytoma and choroid plexus papilloma1(0.3%).The number of 88 (71%) meningioma cases were female and 78(6.%) male. 37 (31.4%) of Astrocytoma and 61(49.2%) of meningioma cases had more than 50 years. Meningioma tumor grading were as: 85.9% grade 1, 6.5% grade 2 and 4% grade 3. Astrocytoma tumor grading were as: 65.7% grade 4, 24.6% grade 2 and 4(3.3%)grade 3.In this study, the most common sites of brain tumors were frontal lobe 57 (17.9%) and temporal lobe 40(12.6%) of cases, respectively.

Disscussion:As a conclusion, since patients with astrocytoma have been diagnosed at high grade, thus special attentions to clinical findings and more investigations for early diagnosis and treatment appears essential.

Neurotoxicologically Outcomes of Perinatal Chlordiazepoxide Exposure on the Fetal Prefrontal Cortex Pyramidal Cells in Rat Pup

Yekta Parsa, Zahra Nadia Sharifi, Tina Parsa, Mohammad-Reza Zarrindast, *Fariborz Ghaffarpasand**, Ehsan Jangholi, Soheila Yadollah-Damavandi, Mohammad Hossein Aghazadeh, Farshad Shahi, Shabnam Movassaghi

*Presenting Author; Student Research Committee, Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran

Background and Aim: Few data are available regarding the teratogenic effects of chlordiazepoxide. Although some congenital anomalies such as microcephaly, duodenal atresia and cardiovascular anomalies have been linked to chlordiazepoxide, some others have eliminated the risk of congenital anomalies. Thus the aim of the current experimental study was to determine the effects of prenatal exposure to chlordiazepoxide on development of the prefrontal cortex (PFC).

Materials and Methods: In this experimental study we included a total number of 9 pregnant Wister rats that were randomly assigned to three groups receiving standard rat food and drinking water ad libitum (n=3) or chlordiazepoxide (40 mg/kg) (n=3) and an equal volume of vehicle (0.9% NaCl) (n=3) intraperitoneal (i.p.) injection once daily from first to 21st day of gestation, respectively. At the end of the experiment, fourteen-day-old neonatal rat pups (n=8 per each group) were sacrificed and their PFC cells were extracted. Mitochondria were extracted from the PFC cells and their level of reactive oxygen species (ROS), protein density, Glutathione (GSH) content, mitochondrial membrane potential (MMP), swelling, cytochrome c release and ATP level was identified. We also performed the Nissl staining, DNA fragmentation assay and RNA extraction and real-time polymerase chain reaction (PCR) on PFC cells.

Results: The results were compared between chlordiazepoxide (E), control (C1) and vehicle-treated (C2) groups. We found that isolated mitochondria from rat pups receiving chlordiazepoxide (E), had significantly higher ROS formation, decreased GSH, lower MMP, higher mitochondrial swelling, decreased ATP level, increased cytochrome c release and higher Bax, p53, cytochrome c and caspase 8 mRNAs. We also demonstrated that maternal chlordiazepoxide administration significantly induced the caspases-3 activity in the prefrontal cortex of pups in E group. The Nissle-stained neurons decreased while the apoptosis significantly increased in E group.

Conclusion: The results of this in vivo study provide evidence regarding negative effects of prenatal exposure to chlordiazepoxide on PFC.

Keywords: Chlordiazepoxide; Prefrontal cortex (PFC); Prenatal; Neonatal; Pyramid Cells

Prevalence of Traumatic Brain Injury in Urmia, Iran

Dr. Nader Aghakhani, Dr. Anirodа Broomand, Hamideh Karimi, Dr. Samereh Eghtedar, Narges Rahbar
Address: Patient Safety Research Center, Urmia University of Medical Sciences

Background and Aim:Traumatic brain injury (TBI) occurs when an external force injures the brain that can be classified based on severity, mechanism (closed or penetrating head injury), or other features (e.g., occurring in a specific location or over a widespread area). is a major cause of morbidity and mortality after myocardial infarction in the world with many complications in somatic, psychosocial and disabilities.

Materials and Methods: In this retrospective and population-based epidemiologic study, TBI-patients records in Mottahari hospital in Urmia was reviewed during 2 years. The medical records based on the ICD items, TBI-related death based on the death certificate and demographic data were collected.

Results: From the total of 1796 hospitalized patients for TBI, 721 patients (40.1%) have acute TBI that 1392 (77.5%) of them were males. The male ratio to female was 3 to 1. Most of patients (395=54.8%) lived in Urmia and remaining patients lived in Khoi (17.8%), Miandoab (13.3%) and Salmas (14.1%). The most common age group was 20-29 years (24.3%). The most frequent mechanism of trauma was motor-vehicle accident. 81.7% of injuries were mild in severity. Mean age of dead persons was 31.9 years old. Most of injuries were in Farvardin, because of trips were increasing this time. Most of the victims were motorcyclist (42%). Accidents rate in road was more than urban streets and most of them happened in spring and summer season, respectively. Most of the mortalities took place in the first minutes and in place of accident (66%).

Discussion: The findings demonstrate that the lack of a system to road-user safety was the main cause of injury; therefore the focus of all preventive activities should be done in this field. More attention is necessary for researchers and health-policy makers to published TBI related articles to increase public knowledge in Iran. It must be remembered that prevention of TBI is vital as there remains no cure for the moderate-to severe TBI. As the evidence for effectiveness and specific treatment is limited so it must be subjected to rigorous research.

Keywords: Epidemiology, Traumatic, Brain Injury

Trigeminal neurinoma presenting as a Sphenoethmoidal Mass

Dr. Afsoun Seddighi, Dr. Amir Saied Seddighi

1-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences. E Mail:afsounseddighi@gmail.com

2-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.

Introduction: About 25–45% of all schwannomas arise in the head and neck region. Less than 4% of these tumors are found in sinonasal regions and usually affect nasal ethmoid. There are very few case reports of a schwannoma arising from the sphenoid sinus. Schwannomas are common slow growing benign tumors.

Case Presentation: We report a case of sphenoid sinus schwannoma treated by microscopic decompression and review the relevant literatureThe patient is a 42-year-old woman presented to our clinic with progressive bifrontal headache, visual blurring and hyposmia from 6 months ago. Physical examination showed impaired olfaction and decreased right sided visual field in the superior lateral part. Brain CT scan showed a skull base mass that was hypodense and invaded the sphenoid and ethmoid sinuses and expanded the skull base sinuses. Brain MRI showed that the skull base mass was hypointense in T1 and hypertense in T2 and enhanced with contrast. We decided to proceed with surgery to get the pathologic specimen and resect the mass to prevent intracranial extension. The mass was grayish pink and semi firm and not suctionable with modest vascularity that invaded and widened the sphenoid sinus and ethmoid sinuses.Surgery was event free and the pathologic assay showed that the mass is trigeminal neurinoma.

Keywords: trigeminal, sphenoid sinus, schwannoma

Electrical Bioimpedance Spectroscopy for Cerebral Monitoring

Dr. Maryam Ahmadi

Physical Chemistry (Electrochemistry)
dr.maryam.ahmadi63@gmail.com

Abstract

Introduction: Bioimpedance analysis is a noninvasive, low cost and a commonly used approach for body composition measurements and assessment of clinical condition. Electrical Bioimpedance (EBI) is now a mature technology in medicine, with applications in clinical investigations, physiological research, and medical diagnosis.

Methods: EBI has been used to study the effect in the brain of spreading depression, seizure activity, asphyxia and cardiac arrest since 1950s and 1960s, but the most important activities in electrical cerebral bioimpedance research has been during the last 20 years. Examples of areas of study are brain ischemia, spreading depression, epilepsy, brain function monitoring, perinatal asphyxia, monitoring of blood flow, and stroke.

During the last two decades theory and technology have been developed in parallel with animal experiments aiming to confirm feasibility of using bioimpedance-based technology for prompt detection of brain diseases.

Results: An important feature of the application of EBI for cerebral monitoring is that it is applicable in some of the situations where brain is particularly at risk as well as for long-term monitoring situations where available imaging techniques: MRI, CT-scan are not suitable. Other features of bioimpedance technology are that it is harmless for the patient, portable and very affordable in comparison with other monitoring techniques already in used.

Conclusion: This article describes the materials and methodology for an individual with little background in designing bioimpedance instrumentation to build and operate a system that measures tissue impedance, specifically in the brain. The system consists of a custom-designed circuit board, a programmable function generator, and an oscilloscope in conjunction with a laptop computer. This system differs from others found in literature by using common “off the shelf” equipment instead of single-application devices or microcontrollers that require embedded programming experience, while still providing suitable mobility. This system represents the first step toward developing a multi-electrode system that will

perform impedance analysis of a region of brain tissue that could discriminate between areas of injury and noninjury.

Keywords: Electrical Bioimpedance Spectroscopy- Cerebral Monitoring- Brain Tissue- Electrical Impedance Tomography (EIT).

Appropriate nursing assessment of patients with traumatic brain injury

Kobra Jahannavard[1], Dr. Nader Aghakhani[2], Monireh Samadi[1],Hamideh Karimi[2], Gholam Reza Salahi[2]

1. Mottahari Hospital, Urmia University of Medical Sciences, Urmia, Iran
2. Patient Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

Traumatic brain injury can be devastating and cause lifelong and rippling emotional, cognitive, physical, and social disabilities that leave patients totally dependent and needing placement in long-term care facilities.

Its injuries include motor vehicle accidents, sports injuries, falls, assaults, penetrating injuries, blast injuries, and combat injuries that can result in conditions such as epidural, subdural, subarachnoid, or intracerebral hemorrhage or hematoma; diffuse axonal injury resulting from shearing injury; and open skull fractures with concurrent brain injury.

Patients with severe TBI are highly compromised and usually can't communicate, either because of the injury itself or the need for mechanical ventilation. Nonetheless, basic elements of a neurologic assessment should be conducted.

A TBI patient may require surgery to stop the bleeding or create more room in the skull for the swollen brain.

A coordinated, multidisciplinary healthcare team should be established at the time of the patient's admission and implemented for the duration of hospitalization. It should include one or more physicians (such as trauma surgeons, intensivists, and neurosurgeons), nurses, respiratory therapists, pharmacists, nutritionists, physical therapists, occupational therapists, speech language pathologists, phy-siatrists, case managers, social workers, and elergy. The patient's family should be involved as well.

Patients with traumatic brain injury currently constitute a major portion of the rehabilitation population. Although agitated, restless, and wandering behavior is an expected stage in the recovery process of these patients, issues involving the patient's and nursing can arise when these behaviors are excessive and hard to control. In addition, patients may have a difficulty achieving their rehabilitation goals because of these behaviors. Specialized interventions, and a structured approach often are necessary and beneficial if patients are to achieve rehabilitation goals. After identification of assessment as a crucial part of the nursing role, aspects of nursing care of head-injured patients are discussed. The discussion of respiratory support measures includes the controversial use of hyperventilation in reducing ICP, the prevention of hypoxia, the risk of respiratory complications, the use of suctioning and turning to prevent these and the

problems associated with these nursing care measures. Not all head injuries are the same. Patients recover at different rates and to varying degrees. It is difficult to determine at what point a patient will start understanding and interacting with their caregivers or family in a meaningful way. It is important to have patience; recovery from a brain injury can take weeks, months, or even years. Other aspects of care are also considered, including careful positioning and temperature control, and the benefits of mild hypothermia.

Keywords: assessment, traumatic, brain injury

12 months follow-up of thoracolumbar injured patients following a short segment fixation

Jamali M. M.D.*, Taheri R. M.D., Goorakani Y. M.D., Solat N. M.D.

Shiraz university of medical sciences*
jamalimo@sums.ac.ir

Abstract

Introduction: Short segment posterior fixation with fusion is our current preference for the fractures of the TL region because of reduced intra-operative the blood loss, preservation of segmental motion with an acceptable anatomic and functional outcome and short term follow-up results which suggest a favorable outcome with SSPF.

Methods: Study population From December 2014 to July 2016, a total of 19 patients with a new thoracolumbar burst fracture and a local kyphotic angle >20, or anterior height collapse >50%, or spinal canal encroachment >50% (15 males and 4 females) with an average age of 30.7 years (range18-59 years) were enrolled in this study. Fractures were managed with short-segment posterior fixation with fusion and augmented with two additional screws by a single surgeon in the Valiasr hospital, Fasa.

Results: There was no implant failure in follow ups. Laminectomy was performed for 9 patients and cross link applied for 13 patients. The Mean surgical time was 70.26 minutes (SD 70.76, range 60–90 minutes) and mean intraoperative blood loss was 126.2 ± 89.7 ml (range 87-170ml). The mean hospital stay was 4.6 days. 2 of patients experienced a postoperative complication, one sphincter problem and one motor defect that in follow ups with treatment resolved. In terms of outcome, the average pain according to visual analog scale were 1.63 ± 1.25

Discussion: The results of our study corroborate the reported benefits of inserting pedicle screws in the fractured vertebra and the efficacy of the six-screw construct for the treatment of thoracolumbar burst fractures. F Pellisé et al. showed that the six-screw construct, a short-segment instrumentation including pedicle screws at the fractured level, is effective for the treatment of nonosteoporotic thoracolumbar burst fractures.(22) It was reported that the prevalence of the failure of posterior instrumentation ranged from 9 to 54 %.(23, 24) However, no implant failure was observed in this study, which was thought to be the result of intermediate screws.

Keywords: thoracolumbar, short segment fixation

Superparamagenetic Iron Oxide Nanoparticles (SPION) as T2-weighted MRI Contrast Agents in Neuroimaging Platforms

Dr. Maryam Ahmadi

Physical Chemistry (Electrochemistry)

dr.maryam.ahmadi63@gmail.com

Abstract

Introduction: As a widely used imaging technology, magnetic resonance imaging (MRI) is playing an increasingly important role in the imaging of the CNS disorders. For in vivo brain imaging, the selection of contrast agents for MRI detection is critical because MRI is relatively insensitive to exogenous agents. Manganese-enhanced MRI (MEMRI), which uses manganese as a T1 contrast neural tracer for MRI, is increasingly of interest for use in animal studies. Because high doses of manganese induce cellular toxicity, a critical issue for the eventual extension of MEMRI for use in humans is minimizing the dose required.

Methods:Like any contrast agent used for biomedical imaging, NPs must be designed to have a reasonable blood half-life, minimal nonspecific binding and uptake, selective binding to desired epitopes, such as cell surface receptors, effective elimination from the body (when NP components have any potential for toxicity), a high SBR, and little or no toxicity. In general, the physiologic behavior and pharmacokinetic parameters of NPs can be optimized by adjusting their HD, composition, shape, and surface characteristics, such as charge and hydrophobicity, which are also key mediators of potential cytotoxicity and in vivo toxicity.

Results: Superparamagnetic IO NPs (SPIONPs) and paramagnetic contrast agents, such as gadolinium, manganese or perfluorocarbons, have also been considered major players in tracking single or clustered labeled cells in target tissues.

Among them superparamagnetic iron oxide (SPIO) nanoparticles have garnered interest due to their large surface area, magnetic properties and low toxicity. In comparison to gadolinium, USPION-enhanced MRI can provide a novel in vivo surrogate marker of cellular inflammation in stroke and other CNS disorders.

Super paramagnetic iron-oxide nanoparticles (SPIONs) possess unique magnetic properties and the ability to function at the cellular and molecular level of biological interactions making them an attractive platform as contrast agents for magnetic resonance imaging (MRI), as miniaturized heaters capable of killing malignant cells and as colloidal carriers for drug delivery targeted at cancer diagnosis and therapy.

Conclusion: The superparamagnetic property of iron oxide particles originates from the large magnetic moment they acquire in the presence of an external magnetic field; removing the field eliminates the paramagnetism. Therefore, these nanomaterials are well suited as T2-weighted MRI contrast agents and present an attractive neuroimaging platform due to their potential to permeate an intact BBB, improved half-life within the vascular system, minimum adverse effects, and clearance by phagocytic cells. The large magnetic moment results in higher signal change or contrast per unit of particles and thus small quantities of SPIO are needed for imaging thereby limiting cellular toxicity.

Keywords: Superparamagnetic Iron Oxide Nanoparticles (SPION)- MRI Contrast Agents- Neuroimaging- Magnetic Properties.

Operative Findings in Telovelar Approach to the Fourth Ventricle

Kaveh Ebrahimzadeh

Assistance Professor of Neurosurgery, Loghman Hakim Hospital, Shahid Beheshti University Of Medical Sciences, Tehran, Iran

BACKGROUND: The cerebellomedullary fissure as a corridor for exposure of the fourth ventricle without vermian splitting is enjoying increasing application as a technique for exposure, to avoid the complications related to vermian splitting. The purpose of this study is to describe the operative findings and the results in 16 fourth ventricular tumours removed via telovelar approach. The impact of the pathological nature of the lesion on the degree of tumour removal is also discussed.

METHODS: Telovelar approach to the fourth ventricle was used in 16 consecutive patients. The charts were reviewed retrospectively. The pathological changes in the tela choroidea and inferior medullary velum, degree of tumour removal, and the clinical outcome are described.

FINDINGS: The tela choroidea was thinned out and streched over the tumour surface in 15 cases (large tumours). In epidermoid and dermoid cysts (4 cases), the tela choroidea was amalgamated with the tumour capsule. The inferior medullary velum was infiltrated by the tumour and was not detected as a separate layer in 6 cases (5 cases vermian astrocytomas and 5 cases medulloblastomas). The inferior medullary velum was thinned out and stretched as a neural tissue sheet over the tumour surface in 10 cases (4 ependymomas, 2 meningiomas, 2 epidermoids, one dermoid and one choroid plexus papilloma). Total removal was achieved in 11 out of 16 patients (68.75%). Subtotal removal was achieved in the remaining patients (31.25%); three ependymomas, one medulloblastoma, and one anaplastic astrocytoma. Cerebellar mutism was not observed in any patient and there was no mortality.

INTERPRETATION: Despite the panoramic view provided by the telovelar approach, the pathological nature of the lesion and vital neural tissue infiltration are limiting factors for total tumour removal. Total removal of tumours focally attached to critical areas in the fourth ventricle should not be attempted at the expense of patient's morbidity and mortality. To achieve optimum outcome, near total excision is acceptable in cases where complete removal may endanger function or life.

Key Words: Telovelar, cerebellomedullary, fourth ventricle

The effect of teaching enhancing lifestyle on depression, anxiety, and stress symptoms of car crashed patients suffering amputation and mutilation

*Elham Abdullahi Shahvali, Negin Hemati[2], Hamed Ersali[2], Sohrab Asadi[2]

1. *M.S., Department of Statistics, Shoushtar University of Medical Sciences, Khouzestan, Iran.
2. Nursing,Shoushtar University of Medical Sciences, Khouzestan,Iran. s Faculty, Khuzestan, Iran

Eabdolahi31@yahoo.com,

Introduction: from rehabilitation viewpoint, amputation is a disability resulting in socio-psychological problems for patients. A determining factor in maintaining health and preventing symptom intensification after the crash is self care behavior. Providing self care which can begin during treatment is important in patient's health and healthy lifestyle. The aim of this study, therefore, is to investigate the efficiency of teaching enhancing lifestyle on depression, anxiety, and stress symptoms of car crashed patients suffering amputation and mutilation.

Method: the present study is quasi-experimental and conducted by pretest and posttest design. In this study 80 patients suffering amputation and mutilation visiting rehabilitation centers were sampled randomly. To gather data, demographic questionnaire and depression, anxiety, and stress questionnaire (DOS 21) were used and data was analyzed using SPSS-21.

Findings: analyzing data showed that most patients were dealing with a level of depression. It also showed that educational plans enhances awareness and performance of patients physically and psychologically. Additionally, self care behavior of participants enhanced significantly. Paired t-test showed significant differences in the average viewpoint, mental norms, purposes for behaviors, and enabling behaviors related to healthy lifestyle before and after statistical intervention.

Conclusion: results showed significant difference in the average depression, anxiety, and stress levels before and after intervention. Therefore, an educational plan for enhancing lifestyle can help patients in controlling effects of mutilation and amputation and enhance their lifestyle. So it is suggested that educating these patients be pursued and skill workshops for decreasing depression be held.

Keywords: education, the effect of education, healthy lifestyle, car crashed patients suffering from amputation

Anatomical Variations of Brachial Plexus in Adult Cadavers; A Descriptive Study

Mohammadreza Emamhadi, MD, Shahrokh Yousefzadeh Chabok, MD, Fariborz Samini, MD, Babak Alijani, MD, Hamid Behzadnia, MD, Fariborz Ayati Firozabadi, MD, and Zoheir Reihanian*, MD

Address*:* Department of Neurosurgery, Poursina hospital, Namjou Avenue, Rasht, Iran
Email: zoheir.reihanian@gmail.com

Background: Variations of the brachial plexus are common and a better awareness of the variations is of crucial importance to achieve successful results in its surgical procedures. The aim of the present study was to evaluate the anatomical variations of the brachial plexus in adult cadavers.

Methods: Bilateral upper limbs of 32 fresh cadavers (21 males and 11 females) consecutively referred to Guilan legal medicine organization from November 2011 to September 2014, were dissected and the trunks, cords and terminal nerves were evaluated.

Results: Six plexuses were prefixed in origin. The long thoracic nerve pierced the middle scalene muscle in 6 cases in the supra clavicular zone. The suprascapular nerve in 7 plexuses was formed from posterior division of the superior trunk. Five cadavers showed anastomosis between medial brachial cutaneous nerve and T1 root in the infra clavicular zone. Terminal branches variations were the highest wherein the ulnar nerve received a communicating branch from the lateral cord in 3 cases. The median nerve was formed by 2 lateral roots from lateral cord and 1 medial root from the medial cord in 6 cadavers. Some fibers from C7 root came to the musculocutaneous nerve in 8 cadavers.

Conclusion: The correlation analysis between the variations and the demographic features was impossible due to the small sample size. The findings of the present study suggest a meta-analysis to assess the whole reported variations to obtain a proper approach for neurosurgeons.

Keywords: Anatomical variations, Brachial plexus, Cords, Peripheral nerves, Trunks

Review of brain and kidney talking

Amir kamalifar*, Tohid khojasteh

Urmia University of medical sciences

amirkamalifar@gmail.com

Encephalopathy and altered higher mental functions are common clinical complications of acute kidney injury. Although sepsis is a major triggering factor, acute kidney injury predisposes to confusion by causing generalized inflammation, leading to increased permeability of the blood–brain barrier, exacerbated by hyperosmolarity and metabolic acidosis due to the retention of products of nitrogen metabolism potentially resulting in increased brain water content. Down regulation of cell membrane transporters predisposes to alterations in neurotransmitter secretion and uptake, coupled with drug accumulation increasing the risk of encephalopathy. On the other hand, acute brain injury can induce a variety of changes in renal function ranging from altered function and electrolyte imbalances to inflammatory changes in brain death kidney donors.

Risk Factors of Adjacent Segment Disease After fusion :a review study

Zahra Sheidae Mehne[1*], Maryam Moghadam Qaeini[1]

1 Student Research Committee*, Facuilty of Medicine, Islamic Azad University, Mashhad Branch, Iran.
Sheidae.Zahra@yahoo.com

Introduction: In the fusion surgery, two or more vertebrae are fused. After this, the natural movement between vertebrae is lost.
Mechanical stresses are increased in adjacent segments after fusion and lead to radiologic and clinical symptoms.
These symptoms affect the patient's functional outcome and they may even lead to broad re-surgery. Therefore, surgeons should know ASD's risk factors. The purpose of this review study is determine the ASD's risk factors.

Method: The preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines were adhered to throughout this study, the authors conducted an exhaustive review of numerous electronic databases. This study is based on searching MEDLINE, PUBMED and GOOGLE SCHOLAR database.

Results: In this,we reviewed pre-existing variables includes age, adjacent segment disk degeneration, gender, osteoporosis, smoking, physical activity as potential risk factors.
Number of fusion segments, adjacent segment damage during surgery, fusion methods, sagittal alignment, floating fusion, were studied as surgery related potential risk factors.

conclusion: numerous studies has identified different risk factors that affect the development of ASD. However,they are not always the same in this studies. Spine surgeon should know the risk factors affecting ASD developments.

Keywords: Adjacent segment disease; spinal fusion; risk factors

Initial Results of Deep Brain Stimulation Surgery in Shiraz; Southern Iran

Ali Razmkon, Razieh Rezaee, Ali Nemati, Omid Yousefi, Sina Salehi, Peyman Petramfar, Yalda Amirmoezzi

Center for Neuromodulation and Pain, Kowsar Hospital, Shiraz, Iran
Nemazee Hospital, Shiraz University of Medical Sciences, Shiraz, Iran
ali.razmkon@gmail.com

Introduction: Deep brain stimulation (DBS) is an effective therapy for Parkinson's disease and dystonia, as well as some other evolving indications. This therapy has been utilized since 1990 in many centers across the world.. We established the DBS surgery program in Shiraz in 2014, as the second city in Iran to perform this operation. We report the outcome of deep brain stimulation as a surgical treatment for Parkinson disease patients from 2014 to 2017 in Shiraz.

Methods: Among 32 patients who underwent DBS surgery for different indications by a single surgeon, 25 patients received bilateral subthalamic nucleus (STN) stimulation during the last 3 years. All 25 patients were diagnosed with advanced Parkinson disease categorized as stage 3 or 4 in Hoehn and Yahr scale. To evaluate outcome, subscores of UPDRS were assessed and analyzed in all patients pre-operatively (in both off- and on-medication) and at least 6 months after the operation.

Results: The mean improvement was 67% in UPDRS-3 and 40% in UPDRS-2. Levodopa requirement was reduced by 60% post-operatively. No surgical or hardware complications happened in any of the patients. All patients experienced significant weight gain after the surgery. Stimulation-related complications including increase in falling and worsening of speech, happened in less than 15% of patients.

Conclusion: Bilateral STN DBS resulted in a dramatic effect on motor functions of most patients in our series. Significant reduction in dopaminergic medication dose and its related side effects was also seen among our patients.

Cisternostomy: 1 year follow up of 8 pediatric patients following the severe TBI

Masoudi M.S.*, Taheri R., Hoseini N

*Shiraz university of medical sciences, neurosurgery dept.
masoudims@gmail.com

Abstract

Background: The story of severe Traumatic brain Injury (TBI) faces strong challenges beside the cons and pros. For the last two decades a quite interesting series of technical advancements in handling the above cases had pushed the edges of this entity to a new era which is called the age of Cisternostomy replacing the age old decompressive hemi-craniectomy.

As this title claims to be a new one, yet there is no long term follow-up result available.

We report our work as the one year follow up results of a series of 8 pediatric patients whom had undergone cisternostomy instead of hemi-craniectomy or in conjunction to it.

Materials and Methods: Our study proposes to manifest the immediate, short term and one year outcome of 8 pediatric patients, all had faced a severe TBI event, whom were admitted to Namazee hospital, a qualified trauma center in Shiraz south of I.R. Iran.

The primary modality of treatment for the above cases was Cisternostomy with or without decompressive hemi-craniectomy. All 8 subjects were followed during a one year period.

Results:. 4 out of them underwent cisternostomy & the rest faced a decompressive hemi-craniectomy plus cisternostomy. One patient developed a sustained mean ICP of more than 25 mm.Hg despite of cisternostomy alone. So, we candidate him for hemi-craniectomy, too. In the cisternostomy alone group the mean post- op ICP was 14. In the cisternostomy + DHC group there was no ICP monitoring system available. However, the DHC flap remained loose in the early post up period.

Discussion: We believe that the concept of including a cisternostomy procedure in a TBI patient even if there is no significant subarachnoid hemorrhage would end in a better long term outcome. Except for one subject whom remained minimally conscious in the cisternostomy + DHC arm, the other 6 subjects carried on their life with a GOSe=8.

Patricia Banner' s Theory; from beginner to professional

Akram alefbaei*

*Department of Nursing, School of Nursing and Midwifery, Ardabil University of Medical Sciences, Ardabil, Iran

Abstract

Introduction*:* The most important work of benner is Project From Novic to Expert that Through which she has Achieved significant results. Interview and observation of Clinical nurses during this Project have Showed that work of them is More complicated than Predict of Nursing theories.This is a Paradigm shift in nursing Claiming that Knowledge can progress in Clinical practice not only in use of information but also it Create and Specificate that practice is a way to earn Knowledge In a special way of its own.

Methods:In this study we used books and internet to study content we desire to explor benner's point of view and based on her divid stuff and upbringing stuff from beginner to expert.we study and critique her opinion until we could use this in our stuff teaching. We first have to identifying that each individual is at what stage of knowledge and experience.we have to teaining nurses from one step to another step that is one level higher than which she o he stay. Banner generalizes this classification of 2 brothers in pilot training and extent in nursing. it will also be useful in nursing.

Results: Banner theory would also be useful in nursing.

Conclusion: The results show that knowing the scientific and skillful level of each person makes it possible to classify the personnel in the classroom and raise each person one step further than she or he is.

Keywords Patricia Banner,nurse training,begginer,novic,exprrt,professional

Gold Nanoparticles-Based Platforms to Diagnosis of Parkinson Disease and its Progression

Dr. Maryam Ahmadi

Physical Chemistry (Electrochemistry)
dr.maryam.ahmadi63@gmail.com

Abstract

Introduction: The World Health Organization computed the disability-adjusted life years (DALYs) or the number of years lost of healthy life, due to Parkinson's disease (PD) to be 1,617,000 globally in 2005 and projected it to increase to 2,015,000 years by 2030.

Alpha-synuclein (AS) is a protein that is abundant in the human brain. The human alpha-synuclein protein is made of 140 amino acids and is encoded by the SNCA gene.In the brain, alpha-synuclein is found mainly at the tips of nerve cells (neurons) in specialized structures called presynaptic terminals. Within these structures, alpha-synuclein interacts with phospholipids and proteins. Presynaptic terminals release chemical messengers, called neurotransmitters, from compartments known as synaptic vesicles. The release of neurotransmitters relays signals between neurons and is critical for normal brain function.

Methods:Amyloid aggregates of AS in dopaminergic neurons of the midbrain are the hallmark of Parkinson's disease. The process of aggregation of proteins that are normally soluble involves a series of complex structural transitions from innocuous monomeric AS to oligomeric, presumably neurotoxic, forms and finally to insoluble fibril formation that accumulate in the affected cells, tissues, and organs.

A hallmark lesion of PD is the presence of spherical protein inclusions, called Lewy bodies, in the cytoplasm of dopaminergic neurons of the substantia nigra in the midbrain. Lewy bodies consist of a dense core surrounded by a halo of radial fibrils and are constituted of various proteins, the most abundant of which is AS. Direct control of the oligomerization and fibrillization processes may enable effective therapeutical strategies so far lacking for PD and related neurodegenerative diseases.

Results: To detect protein misfolding of single α-syn molecules, nanotechnology can be paired with atomic force microscopy for enhanced detection of interprotein interactions. Au nanoparticles can be interfaced with plasmon absorbance for assessment of neurotransmitter concentrations that can indirectly reflect PD pathology.

Conclusion: Highly ordered microfabricated arrays using gold-doped TiO2 nanotubes for photoelectrochemical detection of α-Synuclein are developed. For diagnosis, Au-doped TiO_2 nanotube

arrays are designed with a high sensitivity photoelectrochemical immunosensor to detect α-syn. The arrays were effective platforms for the immobilization of primary antibodies while retaining their stability and α-Synuclein binding. Then, the attachment of secondary antibody and gold nanoparticle-conjugated glucose oxidase, allowed excellent sensitivity by signal amplification. Glucose oxidase catalyzed the conversion of glucose into gluconic acid and hydrogen peroxide. Upon irradiating the other side of the titanium foil, the holes that were formed within the valence band of the nanotubes could be scavenged by the peroxide leading to a photocurrent proportional to concentrations of α-Synuclein with a detection concentration in the range of pg/ml.

Keywords: Parkinson's disease - Gold Nanoparticles- α-Synuclein - The Aggregation and Fibrillation of α –Synuclein – Diagnosis.

Type of Body Injury and Clinical Services Provided to the Pedestrians and Motorcyclists Injured in Road Traffic Injuries in Tabriz-Iran: a Hospital based Study

Niloofar Kheiry[1], Ziba Kheiry[1]

1-Abbasi Hospital of Miyandoab City, Urmia University of Medical Sciences, Urmia, Iran
Corresponding author: Niloofar Kheiry
all.starr1456@gmail.com

Abstract

Background: Injuries are the second greatest cause of mortality in Iran. Traumatic brain injury is an important public health problem in the world. This study aimed to calculated type of body injury and prevalence ratio of clinical services to injuries among Iranian pedestrians and motorcyclists.

Methods: A cross-sectional study based hospital data was conducted in hospitals of Imam Reza and Shohad in Tabriz-Iran.Totally, 4399 patients were included in the study. Only inpatients subjects Data of the clinical services provided to the victims were collected according to International Classification of Diseases 9 Clinical Modification (ICD-9-CM). All injury patterns and causes were classified according to International Classification of Diseases (ICD-10) and analyzed using SPSS version 16.

Results: The mean age of subjects was 34.18 (SD= 17.51) years. Head was the highest common injured part of the body. The most frequent injuries were bone fractures and intracranial injuries. And the majority of clinical services given to patients were treatment of fracture and dislocation 15.0 percent and cranial puncture 15.0 percent.

Conclusions: The study demonstrated that the head trauma is the most important injury type occurring road traffic accidents. Providing necessary facilities for injured motorcyclists and pedestrians and management of road traffic injuries could be important in reduction of road traffic injuries -related mortality.

Keywords: Acute Brain Injury, clinical coding, Iran

NIH Stroke Scale as a new prognostic scale for early prediction of ischemic stroke treatment

Dr. Nader Aghakhani, Dr. Aniroda Broomand

Address: Patient Safety Research Center, Urmia University of Medical Sciences

Abstract

As the third leading cause of death following heart diseases and cancer in the world with high incidence, high mortality, severe morbidity, high recurrence rate and serious complications, Ischemic stroke imposes a huge economic burden on society and accounts for the most prevalent cause of the total cerebrovascular diseases. Therefore, the prevention and treatment of it is very important. Therefore, the judgment of stroke prognosis is important for providing of health and economic policy and selection of treatment programs that affect on initial therapy and rehabilitation programs for ischemic stroke patients. However, a precise and comprehensive prognosis scale of ischemic stroke was needed to be created and further developed.

As a valid tool to assess stroke severity in emergency wards, The National Institutes of Health Stroke Scale (NIHSS) is prepared to measure the severity of neurological deficit of ischemic stroke patients. This 15-item scale measures stroke severity in the recombinant tissue plasminogen activator stroke trials that determines level of consciousness, eye movements, integrity of visual fields, facial movements, language, arm and leg muscle strength, sensation, coordination,speech and neglect. Each impairment is scored on scale ranging from 0 to 2, 0 to 3, or 0 to 4. The scores are summed to a total score ranging from 0 to 42 (the higher the score, the more severity of the stroke).

Conclusion: The scale could be used along with scales such as Motor Assessment Scale to diagnose neurological deficits from cerebellar strokes and lacunar infarcts as an important assessment tool of stroke severity that physicians and nurses working in the emergency and ICU wards need to be familiar with it.

Key words: NIH Stroke Scale, prognostic scale, early prediction, ischemic stroke recovery

Surgical Management of Spinal Intramedullary Tumors: A Report of 20 Cases

Kaveh Ebrahimzadeh, Assistance Professor of Neurosurgery, Loghman-Hakim Hospital, Shahid Behshti University of Medical Sciences, Tehran, Iran

Abstract

Background: Surgery for spinal intramedullary tumors remains one of the major challenges for neurosurgeons, due to their relative infrequency, unknown natural history, and surgical difficulty. We are sure that safe and precise resection of spinal intramedullary tumors, particularly encapsulated benign tumors, can result in acceptable or satisfactory postoperative outcomes. General surgical concepts and strategies, technical consideration, and functional outcomes after surgery are discussed with illustrative cases of spinal intramedullary benign tumors such as ependymoma, cavernous malformation, and hemangioblastoma.

Method and Material: Selection of a posterior median sulcus, posterolateral sulcus, or direct transpial approach was determined based on the preoperative imaging diagnosis and careful inspection of the spinal cord surface. Tumor-cord interface was meticulously delineated in cases of benign encapsulated tumors.

Results: Our retrospective functional analysis of 20 consecutive cases of spinal intramedullary ependymoma followed for at least 8 months postoperatively demonstrated a mean grade on the modified McCormick functional schema of 1.7 before surgery, deteriorating significantly to 2.5 early after surgery (< 1 month after surgery), and finally returning to 1.6 in the late postoperative period (> 6 months after surgery).

Discussion: The risk of functional deterioration after surgery should be taken into serious consideration. Functional deterioration after surgery, including neuropathic pain even long after surgery, significantly affects patient quality of life. Better balance between tumor control and functional preservation can be achieved not only by the surgical technique or expertise, but also by intraoperative neurophysiological monitoring, vascular image guidance, and postoperative supportive care. Quality of life after surgery should inarguably be given top priority.

Keywords: astrocytoma, cavernous malformation, ependymoma, spinal intramedullary tumors

The long term prospective follow up protocol for the treatment of chronic subdural hematoma via Dexamethasone- Captopril combo therapy: DEX-PRIL study

Niakan Amin M.D., Taheri Reza M.D., Khalili H.A. M.D., Shamspour S.Z. M.D.

reza.neuro@gmail.com

ABSTRACT

Background: The combo therapy regimen consisting of dexamethasone and captopril (DEX-PRIL) for chronic subdural hematoma (CSDH) seems to overcome the long-term scenario regarding treatment of CSDH despite its nature with waste and wane. In this prospective cohort study, we proposed and evaluated the long-term effect of combo therapy regimen instead of twist drill craniostomy for CSDH.

Materialsand Methods: We prospectively followed and analyzed the data of the patients undergoing a DEX-PRIL regimen (Dexamethasone 8mgr iv q8h while tapered+ Captopril 12.5 mgr po q8h) for a two years period of time, consisting of the size of the hematoma and the neurological status (via extended Glasgow Outcome Scale).

Results: A sum of 57 patients was included in this study. During a period of 1 year follow up, 37 ones experienced an absolute resolution of the hematoma size while it was measured in serial brain CT scans. 2 patients passed away during the follow up period while the cardiac entities found to be the culprit cause. At last 5 patients gave up the follow up sequence. 4 patients suffered a unilateral weakness despite of a significant decrease in size of the hematoma. One patient developed a gastrointestinal bleeding event while not taking regular regimen. Neither of subjects experiences an episode of seizure attack, nor developed an increase in the size of the CSDH thickness.

Conclusion: The precise analysis of our prospectively allocated database revealed that the DEX-PRIL therapy regimen may play a promising role in non-surgical management of CSDH. This combo therapy may overcome the unwanted complications following the more traditional twist drill craniostomy.

Key words: Dexpril, chronic, subdural, hematoma**.**

Investigating the role of nurse in prevention and care for bedsore in brain stroke patients (a review study)

Elham Abdullahi Shahvali

Nursing department, Shustar Medicine Sciences Faculty, Khuzestan, Iran Phone: 091661329547
Eabdolahi31@yahoo.com

Abstract

Introduction:pressure ulcers due to ischemic injuries can involve skin, muscle, soft tissue, cartilage, and bone. This is an important issue in nursery care due to decrement in lifestyle and increase in healthcare expenses. Because of mobility limitations, patients suffering from brain stroke also suffer from lots of other socio-psychological problems, one of the most prevalent of which is pressure ulcers. Outbreak of pressure ulcers is an indicator of nursery care quality. Providing optimized care and prevention through enhancing performance and management of nurses related to prediction, prevention, and treatment of these ulcers can decrease bedsore outbreaks in brain stroke patients. This study was conducted aiming to investigate the role of nurse in prevention and care for bedsore in CVA patients.

Methods and materials: this study is a systematic review using Google Scholar and SID in Persian and PubMed in English under five keywords of pressure ulcers prevalence, prevention, nurse, nursery care and CVA. In the first stage 112 papers were found. 25 papers through them were analyzed which were related to the subject and published in the recent 10 years.

Results: results showed that prompt nursery care can prevent outbreak of pressure ulcers. Factors such as decreasing or removing pressure from apt areas and educating nurses and healthcare providers can lessen the problem. Nurses are actually hygiene surveillants in preventing and noticing bedsores in time. They play roles in in healthcare, educating society, hygiene management, and enhancing patient's lifestyle.

Conclusion: nearly 50 percent of pressure ulcers are preventable. Conducting procedures of skin care can decrease outbreak and prevalence of pressure ulcers and treatment time significantly. Prevention is the most efficient method for solving this problem. According to the results obtained from papers, the best way to prevent outbreak of pressure ulcers is to change position of the patient once in every hour. Therefore, high quality nursery care is the key factor in solving this problem.

Keywords: bedsore, nursery care for bedsore, prevention, brain stroke

The effect of nutrition education on preventing brain stroke inAged (a review study)

***Elham Abdullahi Shahvali negin hemati**

Nursing department, Shustar Medicine B.S. student in Nursing, Department of Nursing, Shoushtar University of Medical Sciences, Khouzestan, Iran Sciences Faculty, Khuzestan, Iran

Eabdolahi31@yahoo.com

Abstract

Introduction: Iran with a rate of 97.4 recorded death due to brain stroke is 90th in the world. According to statistics published by Iran Medical Council, nearly 250 to 300 brain stroke cases are recorded daily. The reason is mostly high blood pressure. This highlights the need to pay attention to nutrition education for preventing this problem. Since it is hard to predict the final stage of a brain stroke and it depends on the conditions responsible for it, it seems essential to preventing policies. Therefore this study is conducted aiming to review the effect of nutrition education on preventing brain stroke.

Material and methods: the present study is a review conducted based on search in information databases and SID, Scopus, Google Scholar, Iran Medex, Magiran, and PubMed websites.

Findings: findings show that metabolic diseases like diabetes, high blood pressure and high fat play roles in enhancing stroke risk, so appropriate nutrition should be provided. A decrease in salt consumption (less than 1800 mg daily) and having a diet full of fruits and vegetables which are high in fiber can lower blood pressure. Undoubtedly, using olive oil, avoiding saturated fat and fast foods, decrease in using red meat and increase in using white meat especially fish would be effective in preventing brain stroke. Also, deficiency in Vitamin D elevates the risk of brain stroke.

Conclusion: according to these findings, some foods are important for preventing brain stroke, therefore the need for nutrition education and devising healthy nutrition plans is apparent for preventing brain stroke.

Keywords: brain stroke, prevention, nutrition education

Comparison between transforaminal lumbar interbody fusion and posterior lumbar interbody fusion in treatment of lumbar spondylolisthesis: a review

Maryam MoghadamQaeini [1], Zahra SheidaeMehne[1]

1. Student Research Committee, Facuilty of Medicine, Islamic Azad University, Mashhad Branch, Iran

Abstract

Background: In this review article, we evaluated the clinical results of transforaminal lumber interbody fusion (TLIF) and posterior lumber interbody fusion (PLIF) to treat lumber spondylolisthesis.The most common surgical treatments used to treat Spondylolisthesis are TLIF and PLIF. In this article, we aimed to find out which method brings us better results in terms of disability, and to compare the problems faced after or during the operation in both methods. We compared the data collected before the operation and the data related to the complication in each method to find out the better choice.

Methods: We used preferred reporting items for systematic reviews and we carried out a comprehensive review of several electronic databases.We will also conduct electronic search on different databases like MEDLINE,PUBMED and GOOGLE SCHOLAR up to 8 October 2017. Based on the inclusion/exclusion criteria, possible articles are screened.

Results: Problems that happened after using PLIF was more than the TLIF method, and TLIF reduced the rate of durotomy.We found out important differences in terms of clinical satisfaction, blood loss, vertebral root injury, graft malposition, infection, or rate of radiographic fusion. Our data showed that PLIF needed longer operation time. Both TLIF and PLIF are good methods that can decrease the the interbody fusion and fix posterior endplates steadied centrum, so it decreases the problems but TLIF has some features that makes it the better choice, such as smaller trauma, low incidence rate of nervous injury.

CONCLUSIONS:TLIF has some features that makes it better than PLIF, such as the complication rate, blood loss, and surgery duration. The information illustrated in this article shows that both of this methods are good surgical treatments for patients with resistant chronic low back pain.Our findings show that TLIF can decrease the problems operative problems and durotomy.Both of the methods can bring a better quality of life and function for operated patients.

Keywords:Lumbar spondylolisthesis, transforaminal lumbar interbody fusion, posterior lumbar interbody fusion

Surgical repair of ulnar nerve lesions; outcome assessment

Mohammadreza Emamhadi, Shervin Ghadarjani

Address: Guilan, Rasht, Guilan University of medical Sciences, Poursina Hospital, Neurosurgery Department
shervin.gh@gmail.com

Background: This study was embraced to examine surgical outcomes for ulnar nerve repairs, so as to help for the optimal management of these lesions.

Methods: We identified 116 patients with ulnar nerve injury who were referred to our brachial plexus and peripheral nerve Injury center and underwent surgery. The demographic data about age, gender, level of injury (arm, elbow or wrist level), type of injury (penetrating or blunt), mechanisms of injury, time interval between onset of injury and surgery and functional outcomes were recorded.

The functional outcomes were scored, taking into account Louisiana State University Health Sciences Center criteria, prior and then afterward the surgery. Type of repair (neurolysis, direct repair, or repair using graft), and length of graft (if any) were gathered.

Results: The most widely recognized mechanism of injury was laceration in all levels. In 95 cases (81%) good functional outcome (Grade 3 or better) was achieved. The best prognosis achieved in the neurolysis (86%) and direct suture (84%), respectively. Good functional outcome was achieved in 86% of patients with nerves in continuity, and 80% of lesions not in continuity. Overall good functional outcome was achieved in 81% (95 cases) of procedures.

Conclusion: Ulnar nerves injuries are inclined to recuperate if undergo proper surgical intervention, and surgical results were for the most part better for lesions in continuity. In lesions not in continuity end-to-end direct suture showed a better prognosis than nerve graft repairs. Knowing the internal topography of ulnar nerve helps to suture more precisely which in turn may be the cause for achieving the best outcome at each level.

Keywords: Ulnar Nerve; Repair; Injury; Outcome

Vasopressin serum level, sodium and water balance in patient with sever traumatic brain injury

Amir kamalifar*, samar kamalifar

Urmia University of medical science
amirkamalifar@gmail.com

Background: Disorders of water and sodium balance are frequently seen in patients with severe Brain injury (SBI), and may worsen their prognosis. Purpose: To evaluate vasopressin (AVP) serum levels and sodium and water balance disorders during the first week post-injury in patients with SBI.

Method: Thirty-six adult patients with SBI (admission Glasgow Coma Scale score ≤8) and an estimated time of injury ≤72 hours were prospectively studied. Clinical and laboratory data were recorded and AVP was measured in venous blood samples collected on the 1st, 2nd, 3rd and 5th days following inclusion.

Results: AVP serum levels remained within the normal range in SBI patients (either traumatic or non-traumatic), although tended to be greater in non-survivor than in survivor patients (p=0.025 at 3rd day). In-hospital mortality was 43% (15/36), and serum sodium and plasma osmolality variabilities were greater in non-survivor than in survivor patients during the observation period (p<0.001).

Conclusion: AVP serum levels remained within the normal range values in these SBI patients, but those who died have shown higher incidence of abnormal sodium
and water balance during the first week post-injury.

Key Words: vasopressin, severe brain injury, hyponatremia, hypernatremia.

Evaluation of non-neurological complications in severe traumatic brain injury outcome

Amir kamalifar*, Hasan torbati, Samar kamalifar

Urmia University of medical sciences
amirkamalifar@gmail.com

Introduction: Non-neurological complications in patients with severe traumatic brain injury (TBI) are frequent, worsening the prognosis, but the pathophysiology of systemic complications after TBI is unclear. The purpose of this study was to analyze non-neurological complications in patients with severe TBI admitted to the ICU, the impact of these complications on mortality, and their possible correlation with TBI severity.

Methods: An observational retrospective cohort study was conducted in one multidisciplinary ICU of a university hospital (35 beds); 224 consecutive adult patients with severe TBI (initial Glasgow Coma Scale (GCS) < 9) admitted to the ICU were included. Neurological and non-neurological variables were recorded.

Results: Sepsis occurred in 75% of patients, respiratory infections in 68%, hypotension in 44%, severe respiratory failure (arterial oxygen pressure/oxygen inspired fraction ratio (PaO2/FiO2) < 200) in 41% and acute kidney injury (AKI) in 8%. The multivariate analysis showed that Glasgow Outcome Score (GOS) at one year was independently associated with age, initial GCS 3 to 5, worst Traumatic Coma Data Bank (TCDB) first computed tomography (CT) scan and the presence of intracranial hypertension but not AKI. Hospital mortality was independently associated with initial GSC 3 to 5, worst TCDB first CT scan, the presence of intracranial hypertension and AKI. The presence of AKI regardless of GCS multiplied risk of death 6.17 times (95% confidence interval (CI): 1.37 to 27.78) (P < 0.02), while ICU hypotension increased the risk of death in patients with initial scores of 3 to5 on the GCS 4.28 times (95% CI: 1.22 to15.07) (P < 0.05).

Conclusions: Low initial GCS, worst first CT scan, intracranial hypertension and AKI determined hospital mortality in severe TBI patients. Besides the direct effect of low GCS on mortality, this neurological condition also is associated with ICU hypotension which increases hospital mortality among patients with severe TBI. These findings add to previous studies that showed that non-neurological complications increase the length of stay and morbidity in the ICU but do not increase mortality, with the exception of AKI and hypotension in low GCS (3 -5).

Keywords: non-neurological, traumatic brain injury

The International Congress of Neurosurgery

Investigation of Trauma Instances "Head Traumas" in patients referred to Emergency ward of elected Hospital of Urmia University of Medical Sciences

Ali Shakibi*, Leyla Alilu

Corresponding author: *Urmia University of Medical Sciences, Urmia, Iran.
Emails: alishakibi336@gmail.com

Introduction and objectives: Unexpected Casualties and accidents are propounded as one of the major socio hygienic and treatmental problems of communities, in the meantime trauma (head trauma) is one of the most prevalent and important causes of illness and mortality in all communities. They also cause a delirious financial load on the society's shoulders, planning for preventing them and their complications requiring having exact information. Therefore we decided to collect necessary information in west Azerbaijan province. Then on the basis of that information recognize the present weak points for future programming.

Methods and Materials*:* This is a descriptive-Analytic study. A group of (Head Trauma) patients refereed to Emergency ward are formed the study population. We used a questionnaire for data gathering, that pertained forms are filled by General physicians and then assessed by quality group and finally the data were statistically analyzed and in rare proportional instances we used X^2 test.

Results: The results indicated that most of the Samples were in 16-64 years age group (%58.7), men to women ratio was 3 to 1. The most prevalent place for head trauma occurring was among the inter city accidents (%42.1) and the more prevalent cause of head trauma collision with motor vehicles (%34.7), form Soberness view points based on Glasco Coma Scale or GCS (%8.5 had mild trauma with GCS>12, %11 had moderate trauma with 13>GCS>8 and%4 had Severe trauma with GCS<8). Form total number of the Samples%30.7 remedied out patiently, %69.3 hospitalized in surgical Neurologic ward and the total percentage of mortality was%4.2. Therefore with quality promotion of problems connected to education in unexpected casualties we can considerably reduce the disabilities and mortality rate of different Kinds of traumas.

Discussion: In addition to hygiene/remedial expenses, Casualties and accidents impose double damage on community. Therefore promotion of community knowledge about the affairs related to prevention from casualties and accidents and education of physicians and medical Emergency personnel about encountering with trauma at the time of casualty incident seems to be necessary.

Keywords*:* Head, Traumas, Emergency ward

The International Congress of Neurosurgery

The role of physiotherapy and rehabilitation after lumbar fusion surgery for degenerative disease: a review.

Maryam MoghadamQaeini [1], Zahra SheidaeMehne[1]

1. Student Research Committee, Facuilty of Medicine, Islamic Azad University, Mashhad Branch, Iran.

Objective: The aim of this study was to show a comprehensive review of the existing article about lumbar fusion rehabilitation after surgery. Rehabilitation has been reported to improve pain and disability for patients post fusion.

Methods: The author conducted an exhaustive review ofnumerous electronic databases.An electronic database search will be conducted up to 8 october 2017 using MEDLINE, PUBMED, CINAHL and GOOGLE SCHOLAR database, also reviewed reference lists of review articles to identify any other potentially relevant trials. Articles were screened using inclusion/exclusion criteria.

Results: The findings of this research is divided into some parts: words used for rehabilitation,time needed for postfusion rehabilitation, the need for rehabilitation relative to surgery-related morbidity, and rehabilitation's relationship results.

If we start physiotherapy at 12-week after the operation, we will have better results compared to earlier onset like 6-week.The data showing an optimal protocol for rehabilitation after the complications are not obvious, but based on the available data, researchers have suggested different crafted recommendations and a model protocol, which is currently undergoing prospective study.

Conclusions: The use of rehabilitation as a common management method after spinal fusion. We hope that new research will be done in this field on the improvement of rehabilitation after lumbar fusion surgery. Also, high-quality research is necessary to evaluate the effectiveness of this rehabilitation programs.

Keywords: degenerative; lumbar fusion surgery; physiotherapy; rehabilitation

Nursing care of intracranial infection following brain surgery

somayyeh Gharagheshlaghi, Dr. Nader Aghakhani, Shirin Asgharzadeh, Dr. Rahim Nejad Rahim, Maryam Mesgarzadeh, Dr. Samereh Eghtedar, Narges Rahbar

Address: Patient Safety Research Center, Fajr hospital of Maku, Urmia University of Medical Sciences.

Abstract

As a serious complication, postoperative infection after cranial surgery needs an immediate recognition and treatment. After brain surgery, patients are usually admitted to ICU for monitoring. Even with strict adherence to sterile techniques and administration of antibiotic prophylaxis in operation room, postoperative infection after cranial surgery may be occurred. In cases that involve subdural empyema, a bone flap infection, or cerebral abscess, however, reoperation is often required. The goal of post-operative neurosurgical nursing care is to prevent or minimize complications related to the surgical procedure and anesthesia. A careful and frequent neurological assessment by neurology-trained nursing staff are the base of post-operative neurosurgical care. However, management of systemic complications is an essential task that can help minimize serious neurological consequences as like as infection. In most cases, post-operative extubating and subsequent examination can be useful soon after surgery. For the patient undergoing an intracranial surgery, post-operative nursing care should focus on smooth and timely emergence from anesthesia while optimizing hemodynamic, respiratory, infection prevention and electrolyte parameters. The postoperative patient is under a significant amount of physiologic stress is affected by changes in sympathetic tone that control their body temperature and vascular tone, and are responsive to pain and nausea with or without vomiting.

In conclusion, some clinical variables including cognitive status, shivering and postoperative nausea and vomiting, metabolism, hemodynamic, ventilation, neurologic and are especially relevant after brain surgery and deserve to be strictly monitored. A qualified surveillance of these variables and a tight communication between health care professionals such as nurses can significantly contribute to improve the post-operative outcome of patients undergone brain surgery and prevention of infection.

Keywords: Nursing care, intracranial infection, brain surgery

Endoscopic endonasal skull base approache in children, a review

Maryam MoghadamQaeini [1], Zahra Sheidae Mehne [1]

1. Student Research Committee, Faculty of Medicine, Islamic Azad University, Mashhad Branch, Iran.
Email:Maryammghdm20@Gmail.Com

Background: Advances in endoscopic endonasal approaches (EEA), show part of the ongoing evolution of skull base surgery. The use of Endoscopic Endonasal approache for skull base pathology in pediatric populations offers unique challenges and is not well-known.The endoscopic endonasal approach has been used in adults and has been applied to an wide range of surgical modules in this population. However, its clinical application in pediatric neurosurgery has been impeded by the variation in anatomical features and the low incidence of diseases to which it is suitable.

Methods:.This review study has been conducted by searching in valid internal and external scientific databases and by using the related key words.An electronic database search will be conducted up to 15 october 2017 using MEDLINE, PUBMED and GOOGLE SCHOLAR database.

Results: The main feature of this method is that it allows us direct access to different anatomical to intercranial and paranasal sinus lesions, and decreases the result of skin cut, craniotomy, and brain retraction. All mentioned consequences are definite when we use old neurosurgical incisions that the cause more death among patient and the make the patient stay longer in hospital and it increases the treatment costs.

Conclusions: Advancement in skills and experience is required, endoscopic endonosal approacheare believed as safe operation for specific patients with different skull base pathologies. Although this method has less invasion than other methods, but it cause some deaths over time. In patients selected carefully, this method is a safe one, effective and minimally invasive to treat skull base lesions in pediatric. Increase experience and knowledge is needed for acquiring the experience with endoscopic techniques to advance to the more complex modularity in approach.

Keywords: Endoscopic endonasal surgery, Suprasellar lesions, Children

Physiotherapy of the patient with brainstem Giloma tumor

Katayun Qorbanalipour1, Mandana Rezaei2, Amirhosein Kazemi3

[1]. Physiotherapist (clinician), MSc.P.T. Urmia University of medical sciences, k.qorbanalipour@gmail.com
[2]. Assistant professor, rehabilitation faculty, Tabriz University of medical sciences, mandana.rezae@gmail.com
2. Physiotherapy student, rehabilitation faculty, Tabriz University of medical sciences,
3. amirhossein2700@gmail.com

Objective: Brain tumors account for 10% of all brain and spinal cord tumors. In addition to surgical procedures, rehabilitation plays a significant role in the functional ability of these patients. The purpose of this study was to report a patient with Giloma tumor and physiotherapy in this patient.

Method: The patient was a 34-year-old man who had been evaluated and received radiotherapy and chemotherapy treatment since 2007 with diagnosis of brain stem glioma tumor. The patient suffered from quadriparysis of the trunk and extremities in the right side, facial sensation parysis on the left, difficulty in performing fine fingers, imbalance, nystagmus, duplex, dysphagia, and dysarthria and come to physicaltherapy center by wheelchair. Physiotherapy was done for 35 sessions, 3 times per week, with emphasis on reinforcement exercises, flexibility, postural modification, balance and sense of deepness, hands-on motor skills with emphasis on handwriting modification, visual field exercises, cardiovascular respiratory and endurance exercises, Centered Stability and Sensory Learning.

Results: After 35 sessions, postural stability and balance of the patient were improved and able to walk without help. Sensory sensation had a significant recovery. Handwriting and lack of skill in fine-handed movements were corrected. Chest movements were symmetrical.

Discussion: In addition to long-term treatment, short-term goals can also improve the quality of life of a person, which receive rehabilitation treatments. The goal of rehabilitation is to maintain individual independence with emphasis on motor, cognitive, and communication activities. Intervention in any phase of disease can be applied, but rehabilitation is planned based on individual abilities. Rehabilitation processes are needed as early as possible to achieve more stable goals and better functional outcomes. Cognitive rehabilitation can reduce the mortality resulting from the disease and increase the patient's ability to do the

work. Unfortunately, because of the lack of familiarity of oncologists with rehabilitation services, this treatment is in the final stage, while many brain tumor patients are good cases for behavioral, cognitive and social rehabilitation.

Key words: Tumor, gilloma, Brain stem, Physiotherapy

Brain Tumor Segmentation with Clinical Application of Wavelet Enhanced Convolutional Neural Network

Mohamadreza Hajiabadi

dr.m.haji55@gmail.com

Introduction: Manual brain tumor segmentation is a challenging task and has its own problems that require the use of machine learning techniques to solve them. One of the machine learning techniques that has been paid attentions and achieved many successes in image processing applications is the convolutional neural network which is stand on deep learning paradigm. The performance of the convolutional neural network can be enhanced combining other data analysis tools such as wavelet transform.

Method: In this study, one of the famous implementations of Convolutional Neural Network called Fully Convolutional Network was used in the brain tumor segmentation and its architecture was enhanced using the injection of the wavelet transformed images in its layers.

Result: Comparing the performance of basic Fully Convolutional Network architecture against the wavelet enhanced form, revealed a remarkable superiority of enhanced architecture in brain tumor segmentation task.

Conclusion: Despite the deep learning significant capabilities in direct feature extraction from raw data and its independency to feature engineering processes, the use of mathematical functions as enhancing tool can improve the performance of this type of machine learning techniques.

Management of Giant Pituitary Macroadenoma

Mohamadreza Hajiabadi

dr.m.haji55@gmail.com

Giant adenomas are defined as tumors >40 mm in diameter and account for 5%-14% of all pituitary adenomas.

Radical resection is achieved in <50%, with a reported complication rate of 10%-20. Surgical outcomes for giant pituitary adenomas are reportedly worse than for other pituitary adenomas.It seems that endoscopic approaches achieved higher resection rates than microscopic or open transcranial resection for giant pituitary adenomas but it depends on multiple factors like tumor consistency, endoscopic learning curve or experience of endoscopic surgery, the kind of neurological deficit. About this topic we tried first to show our experience and then review the results of this type of tumor management in the literature.

Functional outcomes after surgical intervention for pituitary apoplexy

Maryam MoghadamQaeini [1], Zahra SheidaeMehne[1]

[1]. Student Research Committee, Faculty of Medicine, Islamic Azad University, Mashhad Branch, Iran.

Background: Pituitary apoplexy is a rare disease that is caused when a hemorrhage into or infraction of pituitary gland, suddenly happens. We undertook this research to evaluate the predisposing factors, clinical symptoms, treatment, management and clinical recovery in patient with pituitary apoplexy, and we emphasized on long term visual, endocrine and functional results. We investigated whether there was a significant difference in neurological, endocrine, and nonneuroendocrine results for patients with pituitary apoplexy, based on the time between symptom onset and surgical intervention.

Methods: Systematic literature search was performed of MedLine, Pubmed, Googlescholar, and the Web of Science for articles published until 11 October. Studies of the outcomes in consecutive patient's thatundergoing surgical intervention treatment for pituitary apoplexy. Based on the inclusion/exclusion criteria, possible articles are screened.

Results: Early compared to delayed resection couldn't improve visual deficits, total visual loss, resolution of oculomotor palsy, recovery from hypopituitarism, or nonneuroendocrine symptoms and signs like headache and encephalopathiy significantly. Finally, visual improvement, complete restoration of normal vision and resolution of oculomotor palsies before the surgery was seen in patients. Even when considering time to surgery from symptom onset as a continuous variable, there was no difference between early or delayed surgery**.**

Conclusions: Neurological deficits like visual loss and cranial neuropathies appearance moderate improvement after operative decompression, like preoperative hypopituitarism. It seems that the time of the surgery, whether early or delayed, does not change the outcomes significantly. Outcome of most patients with pituitary apoplexy is good. We can manage selected patients conservatively and we can treat patients with severe neuro-ophthalmological deficits with early surgery to achieve excellent recovery.

Key Words: Outcomes, Pituitary apoplexy, Pituitary surgery

Role of CT scan in Head Trauma

Zahra Sheidae Mehne[1*], Maryam Moghadam Qaeini[1]

1 Student Research Committee, Facuilty of Medicine, Islamic Azad University, Mashhad Branch, Iran.
*Sheidae.Zahra@yahoo.com

Introduction: Head trauma is one of the common causes of referral to the emergency department Also, traumatic brain injury is one of the major causes of morbidity and mortality.
Imaging in the initial assessment and management of patients with head trauma is necessary to detect the extent of damage and the rapid diagnosis of treatable injuries.
One of the primary imaging methods is computer tomography scanning, which is used in the emergency department to evaluate traumatic headache.
In this study, We review the role of CT in head trauma.

Method: The preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines were adhered to throughout this study, the authors conducted an exhaustive review of numerous electronic databases. This study is based on searching MEDLINE, PUBMED and GOOGLE SCHOLAR database.

Results: CT scan plays a key role in imaging evaluating of head trauma patients.All patients with a significant level of consciousness (GCS <13 for adults or <14 for children)to reject intracranial hemorrhage should undergo head CT.Non-Contrast head CT Scan is the standard imaging method for moderate to severe traumatic brain injury.This is a sensitive and specific way to show intracranial hemorrhage, extra-axial collections, edema, swelling, midline shift, herniation, and fracture. Availability, speed of performance and lack of contrasts, make it the first-line modality in the management of Traumatic Brian Injury.
Various plans and window / level settings are useful and provide the possibility to optimize detection of different pathologies.

Conclusion:CT scan is the initial study of choice to determine the type, extent and severity of traumatic brain injury as well as to determine the management protocol.
The high yield and diversity of CT scan findings in head trauma patients support the indication for the appropriate use of CT in diagnosis and management of head trauma.

Keywords: Head trauma, traumatic brain injury, CT scan

Microsurgical Outcome of Posterior Circulation Ruptured Intracranial Aneurysms in a Large Neurovascular Referral Center in Southern Iran

Abdolkarim Rahmanian*, Fariborz Ghaffarpasand

*Presenting author; Department of Neurosurgery, Shiraz University of Medical Sciences, Shiraz, Iran.

Background and Aim: Posterior circulation intracranial aneurysms encompass 15% of all intracranial aneurysms. The aneurysms of the posterior circulation rupture more frequently and their morbidity and mortality rates are higher compared to anterior circulation. Although, currently many of these lesions are managed via endovascular approaches, microsurgical techniques are still the mainstay of treatment. The aim of the current study was to determine the microsurgical outcome of posterior circulation aneurysms in Southern Iran.

Methods: This cross-sectional study was conducted during an 8-year period from 2009 to 2017 in Namazi hospital, a large neurovascular referral center in Southern Iran affiliated with Shiraz University of Medical Sciences. We included all the patients with unruptured aneurysms of the posterior circulation who underwent microsurgical clipping during the study period. We report the outcome of the patients based on the Modified Rankin scale (MRS), Glasgow outcome scale (GOS), remnant aneurysm, recurrence and complications.

Results: Overall we have included a total number of 33 patients with posterior circulation aneurysm undergoing microsurgical clipping during the study period. The mean age of the patients was 50.9 ± 12.4 years. There were 12 (36.4%) men and 21 (63.6%) women among the patients. Most of the patients (54.5%) had Fisher 3 grade of subarachnoid hemorrhage and 17 (51.5%) were Hunt and Hess grade 1. Basilar tip was the most common location in 11 (33.3%) followed by posterior inferior cerebellar artery (PICA) in 10 (30.3%) and superior cerebellar artery in 2 (6.1%). The most common utilized approach was pterional transsylvian in 14 (42.4%) patients. After 6-months of follow-up, there were 4 (12.5%) mortality, 1 (3.1%) PVS and 24 (72.7%) had good recovery according to GOS. According to MRS, 23 (69.7%) had no symptoms and 2 (6.3%) had no significant disability.

Conclusion: The results of the current study demonstrates that microsurgical outcome of posterior circulation aneurysms is comparable to the international literature and endovascular approaches. Microsurgery remains an important route of treatment for posterior circulation aneurysms. However, experience and facilities are important indicators of outcome.

Keywords: Posterior Circulation; Intracranial Aneurysms; Outcome; Microsurgery; Clipping

Effects of Acupuncture on Pain and Addiction Severity Index to stimuli in a patient with fibromyalgia, Single-Subject Design Study

Bijan Pirnia[1]*, Kambiz Pirnia[2]

1- Corresponding author) PhD Student of Clinical Psychology, Department Of Psychology, Faculty Of Humanities, University of Science and Culture, Tehran, Iran. b.pirnia@usc.ac.ir

2- Internal Disease Specialist, Baharloo Hospital, Tehran, Iran. bpirnia@usc.ac.ir

Introduction: Fibromyalgia syndrome is a chronic disease that associated with widespread pain, fatigue and psychological problems.

Objective: This study has been carried out with the purpose of evaluating the efficacy of the Auricular acupuncture on reduce the management of addiction severity and pain in an ecstasy dependent person.

Methods: In a Single-Subject Design Study, during October 2015 to June 2016, Thirty-eight-year-old woman with a history of chronic ecstasy consumer with fibromyalgia syndrome, Selected by Purposive sampling and then evaluated twenty-one days (A), for three weeks (B) was performed by Auricular acupuncture treatment. To assess the Adherence, the validity of urine samples by immunochromatography method by using a threshold of 500 ng by kit contains anti-irritant particles bound to monoclonal antibody were evaluated. The primary outcome measures included pain assess, and secondary outcome included the Addiction severity index and Adherence and the results were evaluated by multiple baseline trend control on visual analyses of AB intervention graphs.

Results: The primary outcomeshowed that AA has not a significant effect on reducing in pain index (A mean of 54.66 ± 2.12 in a state *vs.* a mean of 54.22 ± 1.8 in B state, $p > 0.05$). Secondary outcome showed that there was only a significant effect on consumption component ($p< 0/05$). And in other multiple components of Addiction Severity Index were not observed were not observed significant changes (*all*>0/05). However acupuncture could effective the increase adherence to therapy as a avoiding.

Conclusion: Due to the modulation of dopaminergic systems in the management of chronic pain and stimulatory effect on impaired in the production of tyrosine hydroxylase as a prerequisite for the production of dopamine, the effectiveness of acupuncture could be in jeopardy.

Keywords: Auricular acupuncture, Fibromyalgia, Ecstasy, Single-Subject Design Study

Selective Targeting of Brain Tumors with P-Gold Nanoparticle-Induced Radiosensitization

Negar Zamani[1, 2],Farnaz hoseini[2],Sara davari[2]

1.radiotechnologist Bsc, Medical School, Tabriz University of Medical Sciences-Tabriz-Iran
2. Nano medicine Msc, Nanomedicine Department,University of medical Science-tehran

Introduction: Brain cancer is among the most deadly and difficult to treat of cancers, 50% of cancer treatments and relies on the deposition of energy directly into tumour tissue, Successful treatment of brain tumors such as glioblastoma multiforme (GBM) is limited in large part by the cumulative dose of Radiation Therapy (RT) that can be safely given and the blood-brain barrier (BBB), which limits the delivery of systemic anticancer agents into tumor tissue. after studing about nano particles and their features and novel effective ways for radiation enhancement in tumor therapy We describe studies of the potential usefulness of gold nanoparticles modified for durable systemic circulation(through polyethylene glycosylation; hereinafter "P-GNPs") as adjuvants for RT of sarcomas.

Purpose: Targeting of brain tumors with Gold nano particles in radiotherapy and show its usefulness in enhancing tumoral parts from normal parts in brain.

Material and methods: Several scientists studies were reviwed in our Retrospective article,we report our pilot studies in cell culture,GBM in which RT is complemented by PEGylated-gold nanoparticles.in a research Cells from a medulloblastoma-derived and then subjected to IR.in another study delivered with Daniel Y. Joh and etal human sarcoma-derived cell lines from mice, P-GNP in conjunction with RT,reflected by approximately 1.61-fold increase in γ-H2AX (histone phosphorylated on Ser139) foci density compared with RT alone.another study done with James F Hainfeld and etal Gold nanoparticles approximately 11 nm in size were injected intravenously and mice brains imaged using microcomputed tomography.

Results: The combined RT and P-GNP also led to significantly reduced clonogenic survival of tumor cells, compared to RT alone, with dose-enhancement ratios of 1.08 to 1.16.Gold uptake gave a 19:1 tumor-to-normal brain ratio with 1.5% w/w gold in tumor,calculated to increase local radiation dose by approximately 300%. In another study Mice receiving gold and radiation (30 Gy) demonstrated 50% long term (>1 year) tumor-free survival, whereas all mice receiving radiation only died.The results were very encouraging. Without treatment, the test animals with brain tumors with radiation alone, for 33 days.

When the gold nanoparticles were paired with radiation, however, the mean survival time surged to 42 days.

Conclusion: Gold nanoparticles are novel agents with strong therapeutic and diagnostic potential in a wide variety of cancer application.

Keywords: Brain Tumors, Radiosensitization

Bedside Nursing care of patients with brain tumors

Dr. Nader Aghakhani, Dr. Aniroda Broomand, Malake Yarmohammadi, Dr. Samereh Eghtedar, Narges Rahbar

Address: Patient Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

As an intracranial solid neoplasm, a brain tumor that can occur at any age is defined as an abnormal growth of cells in the brain or the central spinal canal that begins when normal cells in the brain grow uncontrollably and forming a mass.

The most common type of primary brain tumors are meningioma, astrocytoma, and oligodendroglia that cause seizures, memory problems; headaches; numbness or tingling in the arms or legs; mood and personality changes; balance changes in speech, vision, and walking problems; nausea and vomiting; or hearing.

While many brain tumors can be removed with little or no damage to the brain, others are located where surgical removal is difficult or impossible without destroying critical parts of the brain.

Even when it can't cure a malignancy, surgery can reduce the size of the tumor, ease symptoms and nursing assistance is conducted according to the manifestations of the patient, with a holistic and individualized understanding of each patient.

Nursing Diagnosis for Brain Tumor are necessary and can be listed:

1. Impaired Skin Integrity related to the effects of chemotherapy and radiation therapy.
2. Disturbed Body Image related to hair loss, and changes in the structure and function of the body.
3. Risk for Fluid Volume Deficit related to the side effects of chemotherapy and radiation therapy.
4. Acute Pain related to severe headaches and side effects of treatment.

Discussion: the nurse should assess the complexity of assistance required by patients with brain tumor and have the competency to enhance the quality of life of patients and families.

Therefore, it is necessary for the nurse to use the technical-scientific knowledge and have a clinical experience to develop nursing assistance, allowing patients to have a less traumatic treatment and a qualified care.

Keywords: Bedside Nursing, care, patients, brain Tumors

Comparison of the Results of Endoscopic Endonasal Approach with Trans Cranial Approach in Patients with Craniopharyngioma

Dr. Afsoun Seddighi, Dr. Amir Saied Seddighi

1-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.
2-Associate Prof of Neurosurgery, Functional Neurosurgery Research Center of Shohada Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Shohada Tajrish Neurosurgical Comprehensive Center of Excellence, Shahid Beheshti University of Medical Sciences.

Introduction: Traditionally, transcranial approaches have been used for the resection of craniopharyngiomas. The transsphenoidal approach, makes a good access to the sella turcica that harbors these tumors. The effectiveness of this technique for the treatment of such craniopharyngiomas has been confirmed throughout the years by several publications. With the widespread use of the endoscope in endonasal surgery, this route has been proposed over the past decade as an alternative technique for the removal of craniopharyngiomas, so we aimed to determine the surgical results and compared this approach with the transcranial method.

Materials and Methods: We retrospectively analyzed data from a series of 20 patients who underwent the endoscopic endonasal approach and compared them with another 20 cases who were treated by the transcranial approach between 2012 to 2017. The surgical out come and morbidity and mortality rates were compared between the two groups.

Results: In patients treated by endoscopic approach, gross-total removal achieved in 70% of the cases and in the transcranial group in 75%.The overall improvement rate in visual disturbances was 80% in the transsphenoid and 70% in the transcranial group.No new postoperative defect was noted. Worsening of the anterior pituitary function was reported in 50% of patients in the first and 40% in the second group. There were 60% new cases of postoperative diabetes insipidusin the first and 40% in the second group. The most common complication was postoperative CSF leakage; the overall rate was 10%. Mortality occurred in 1 case in the transsphenoidal group and 2 in the transcranial group, with a mean follow-up duration of 48 months (range 3–246 months).

Conclusions: The endoscopic endonasal approach has become a valid surgical technique for the management of craniopharyngiomas. It provides an excellent corridor to infra- and supradiaphragmatic midline craniopharyngiomas, including the management of lesions extending into the third ventricle chamber.

Key Words: craniopharyngioma, endoscopy, transsphenoidal surgery, craniotomy

Evaluation of the relationship between left heart failure with non-hemorrhagic stroke in patients with atrial fibrillation

Manijeh Givari

adel.rafieyan@yahoo.com

Introduction: Atrial fibrillation (AF) is one of the most common arrhythmias that causes many complications in patients. These complications include an increased risk of systemic thromboembolism and heart failure. Therefore, the aim of this study was to evaluate the relationship between left heart failure and stroke in patients with atrial fibrillation requires angioplasty in the cerebral arteries.

Materials and Method: This study was performed on 59 patients with non-hemorrhagic AF-induced stroke. Demographic data and relative frequency of heart failure were evaluated by echocardiography and mortality was also recorded in patients follow up. T-test, Chi-Square and Mann-Whitney tests were used to compare the variables studied.

Results: The overall incidence of left heart failure was 18 patients (30.5%), of which 10 (55.6%) suffered from the first stage of left heart failure, 5 (27.8%) patients in the second stage, 3 (16.7%) patients had end stage diastolic failure, and it was found that 27.8% of the patients with left heart failure and 4.9% of the patients without left heart failure group died (P = 0.023).

Conclusion: Considering the high prevalence of heart failure in patients with non-hemorrhagic AF-induced stroke and, due to the higher mortality rate in these individuals, more precautionary measures should be taken in this group of patients in order to reduce the morbidity and mortality and further increase the quality of life of these patients.

Keywords: non-hemorrhagic stroke, atrial fibrillation, left heart failure

Bifrontal glioblastoma: a survival report

Kaveh Ebrahimzadeh, Assistance Professor of Neurosurgery, Loghman-Hakim Hospital, Shahid Behshti University of Medical Sciences, Tehran, Iran

Background: Glioblastoma is an aggressive primary brain tumor with devastatingly poor prognosis. Multiple studies have shown the benefit of wider extent of resection (EOR) on patient overall survival (OS) and worsened survival with larger preoperative tumor volumes. However, the concomitant impact of postoperative tumor volume and eloquent location on OS has yet to be fully evaluated. We performed a retrospective chart review of adult patients treated for glioblastoma.

Method and Material: The authors reviewed clinical data on all patients undergoing glioma surgery performed by the senior author during a 4-year period at Loghman-Hakim Medical Center. Twenty-five patients were identified who underwent surgery for butterfly gliomas.

Results: The mean (±SD) age of the patients was 57.9 ± 11.9 years; the mean preoperative and postoperative Karnofsky performance scores (KPSs) were 76.2 ± 10.3 and 80.0 ± 16.6, respectively. Preoperative tumor volume averaged 36.2 ± 49.0 ml, postoperative residual was 5.0 ± 7.1 ml, and average EOR was 85.6 ± 15.6%. The observed average follow-up was 18.6 ± 13.7 months, and mean OS was 17.7 ± 15.4 months. Survival analysis showed significantly shorter survival for patients with lesions in periventricular (16.8 ± 1.7 vs. 21.5 ± 1.4 mo, p = 0.03), deep nuclei/basal ganglia (11.6 ± 1.7 vs. 20.6 ± 1.2, p = 0.002), and multifocal (12.0 ± 1.4 vs. 21.3 ± 1.3 months, p = 0.0001) locations, but no significant influence on survival was seen for eloquent cortex sites (p = 0.14, range 0.07–0.9 for all individual locations).

Conclusion: There was a negligible but significant interaction between EOR and preoperative tumor volume, but EOR alone did not correlate with OS after adjusting for other factors. The interaction between EOR and preoperative tumor volume represented tumor volume removed during surgery. In conclusion, EOR alone was not an important predictor of outcome during bifrontal GBM treatment once preoperative tumor volume, age, and deep nuclei/basal ganglia location were factored. Instead, the interaction between EOR and preoperative volume, representing reduced disease burden, was an important predictor of reducing OS.

Keyword: Bifrontal glioblastoma, Outcome, Survival

Tips and Tricks in the Management of Sphenoid Sinus Cerebrospinal Fluid Leak

Maryam Jalessi, Amin Jahanbakhshi, Mohammad Farhadi

Skull Base Research Center, ENT and Head and Neck Research Center and Department, Hazrzt Rasoul Akram Hospital, Iran University of Medical Sciences, Tehran

Objective: Due to deep location of the sphenoid sinus adjacent to various cranial fossae, and the vicinity of important neurovascular structures to the walls of this sinus, cerebrospinal fluid leak of sphenoid sinus is considered as the challenging ones to diagnose and manage.

Methods: In this presentation, 10 interesting cases of leak from various walls of the sinus (with traumatic, spontaneous, congenital, or iatrogenic origin) are presented.

Results and discussion: In all cases, the leak could be repaired eventually through the approach. There were obstacles in diagnosis, management and postoperative follow up that are discussed according to each site on imaging and movies.

Conclusions: Although endoscopic endonasal approach is a safe and effective approach for the repair of sphenoid CSF leak, multidisciplinary team approach is necessary to increase the success rate and decease the complications.

Polymeric nanoparticles for the drug delivery to the central nervous system

Negar Zamani[1, 2], Amir Kamalifar[3]

1. Radiotechnologist Bsc, Medical School, Tabriz University of Medical Sciences-Tabriz-Iran
2. Nano medicine Msc, Nanomedicine Department,Tehran University of medical Science
3. Nourosurgery resident departement urmia University of medical science-Iran

Introduction: 1.5 billion people are suffering from CNS disorders, In fact, 98% of drugs are not able to cross the blood – brain barrier (BBB) owing to their molecular or chemico-physical properties.The unique structure of this epithelium is based on the presence of the tight junctions (TJ). to improve drug delivery to the brain, modification of the physicochemicalproperties of drugs,has been done.

Purpose: The present review deals with the different strategies that have been developed in order to allow Np drug carriers entry into the CNS parenchyma.

Method and material:In vivo and invitro brain drug delivery with nanoparticles.A considerable number of drugs so-far have been transported into the brain across the blood–brain barrier using nanoparticles. These drugs include anticancer drugs, analgesics, protease inhibitors, several macromolecules, and others

PBCA nanoparticles were loaded with dalargin (a compound with opioid activity), coated with polysorbate 80, and delivered intravenously

Polyesters such as poly(lactic acid) (PLA) and poly(glycolic acid) (PGA), and their copolymer poly(lactic-co-glycolic acid) (PLGA) and PCL have also been widely studied because of their history of safe use.

high density positive charge have been reported to cross the BBB. Chitosan is a naturally occurring biodegradable, biocompatible polysaccharide

Results: detection, demonstrated that in the absence of polysorbate 80 coating, there was a significant decrease in the number of PBCA nanoparticles that crossed the BBB.

Delivery of estradiol-loaded chitosan nanoparticles leads to significant amounts of estradiol within the CNS.

Also the surface properties of the nanoparticles play the paramount role for the ability of the particles to deliver drugs to the brain. Apart from polysorbate 80, also polysorbate 20, 40, and 60 and poloxamer 188 were able to achieve antinociceptive effects in mice after binding of dalargin following intravenous injection, whereas other surfactants such as poloxamers 184, 338, 407, poloxamine 908, Cremophor® EZ, Cremophor® RH 40, and polyoxyethylene-(23)-laurylether did not yield such effects.

Conclusions: Polymeric Np have been shown to be promising carriers for CNS drug delivery due to their potential both in encapsulating drugs, hence protecting them from excretion and metabolism, and in delivering active agents across the blood–brain barrier without inflicting any damage to the barrier**.**

Palatal tremor after clipping of basilar tip aneurysm; a rare complication

Mohammad Hallajnejad, Guive sharifi, Amirarsalam Amin, Omidvar Rezaei

The surgical treatment of basilar tip aneurysms remains one of the most difficult tasks in neurosurgery because the view is obscured due to the depth of the aneurysm, overlapping neurovascular and bony structures, and the proximity of perforators. We operate a 62 years old male patient with Sub arachnoid hemorrhage and basilar tip aneurysm with orbitozygomatic trans-sylvian approach. 2 days after surgery palatal tremor developed in patients that resolved 10 days later without any treatment. Post opetaive MRI demonstrated micro infarct in specific area of basal ganglia. This specific movement disorder has not reported in literature after surgical clipping of a basilar tip aneurysm.

Kew Words: Palatal tremor, Basilar tip aneurysm, Movement disorder

Operative management of lumbar disc herniation: the evolution of knowledge and surgical techniques in the last century.

Nazanin Khadem

aminrafatnejhad@yahoo.com

Abstract

Removal of a herniated disc with the use of the operative microscope was first performed by Yasargil (Adv Neurosurg. 4:81-2, 1977) in 1977. However, it began to be used more and more only in the late 1980s (McCulloch JA (1989) Principles of microsurgery for lumbar disc disease. Raven Press, New York). In the 1990s, many spinal surgeons abandoned conventional discectomy with naked-eye to pass to the routine practice of microdiscectomy. The merits of this technique are that it allows every type of disc herniation to be excised through a short approach to skin, fascia and muscles as well as a limited laminoarthrectomy. For these reasons, it has been, and still is, considered the "gold standard" of surgical

treatment for lumbar disc herniation, and the method used by the vast majority of spinal surgeons. In the 1990s, the advent of MRI and the progressive increase in definition of this modality of imaging, as well as histopathologic and immunochemical studies of disc tissue and the analysis of the results of conservative treatments have considerably contributed to the knowledge of the natural evolution of a herniated disc. It was shown that disc herniation may decrease in size or disappear in a few weeks or months. Since the second half of the 1990s there has been a revival of percutaneous procedures. (2001) Intradiscal injection of oxygen-ozone for the treatment of lumbar disc herniations: result at 5 years. 12th World Congress of Neurosurgery; 284-7), or laserdiscectomy performed under CT scan (Menchetti PPM. (2006) Laser Med Sci. 4:25-7). The really emerging procedure is that using an endoscope inserted into the disc through the intervertebral foramen to visualize the herniation and remove it manually using thin pituitary rongeurs, a radiofrequency probe or both (Chiu JC. (2004) Surg Technol Int. 13:276-86).Microdiscectomy is still the standard method of treatment due to its simplicity, low rate of complications and high percentage of satisfactory results, which exceed 90% in the largest series. Endoscopic transforaminal discectomy appears to be a reliable method, able to give similar results to microdiscectomy, provided the surgeon is expert enough in the technique, which implies a long learning curve in order to perform the operation effectively, with no complications. All the non-endoscopic percutaneous procedures now available can be used, but the patient must be clearly informed that while the procedure is simple and rapid, at least for the disc L4-L5 and those above (except for laserdiscectomy

under CT, that can be easily performed also at L5-S1), their success rate ranges from 60 to 70% and that, in many cases, pain may decrease slowly and may take even several weeks to disappear.

Study of signs and risk factors in subarachnoid hemorrhage

Ahmad Vahednasiri[*1]

1. Bs student of operating room, Student Research Committee, Maragheh University of Medical Scinces, Maragheh, Iran.
2. Email: ahmad.vahednasiri@yahoo.com

Background & Aim: Non-traumatic subarachnoid hemorrhage of Cerebrovascular problems and is one of the neurological emergencies which is associated with a high rate of mortality and complications.This neurological disorder has predisposing factors that sometimes are preventable.The purpose of this study checking the signs and risk factors in subarachnoid hemorrhage.

Method: In this review research, accessed to articles by searching in Pubmed, SID data bases and Google scholar searching engine and using subarachnoid hemorrhage, signs and risk factors key words. Of the articles that have been published since 2013 to 2017, 11 articles were selected and studied.

Results: According to studies, 51/26% of people at the start of the disease had a low level of consciousness. Sudden headache has been seen in39/46% of people. Coma was also observed in some individuals (8/7%). Hypertension (64/37%), Smoking (47/81%), stay on exposed to excitation (37/41%), alcohol consumption (31/27%), Taking contraceptive pills (17/8%) and Taking Anticoagulants drugs (15/43%) were also major risk factors of this disease.

Discussion and conclusion: According to risk factors in this disease are preventable, implement retention programstoPrevention of this disease, and including healthy lifestyle education is recommended.

Key words: subarachnoid hemorrhage, signs, risk factors

Acute lumbar spine subdural hematoma following lumbar puncture:A case report and review of litrature

Amir Azarhoamyoun, M.D

Sina trauma and surgery research center, TUMS, Tehran,Iran
Dr.azarhomayun@gmail.com

Objective: To report a rare case of acute spinal subdural hematoma (SSH) complicating lumbar puncture and lumbar spine surgery, presenting symptoms, diagnostic imaging, and pitfall in management.
Methods: A 60-year-old woman with history of diabetes melitus and CML presented with unilateral incomplete third nerve palsy and optic disc swelling underwent lumbar puncture and then L2-S1 laminectomy and L2–L3 discectomy
Results: one day after lumbar puncture, the patient presented with weakness of both lower limbs and sphincter disturbances. Magnetic resonance imaging was performed and revealed paracentral protrusion of dehydrated L2-S1 discs with spinal canal stenosis and laminectomy & discectomy was done. Because of incomplete recovery of lower limbs repeat lumbar MRI with and without gadolinium was done and a characteristic SSH with thecal sac compression at the level of L2 was seen. Emergency decompression and evacuation of the hematoma was performed. The patient hadn't complete recovery 6 weeks postoperatively.
Conclusion: Acute SSH is a rare complication of lumbar puncture and lumbar spine surgery. This diagnosis must be considered when acute onset paraplegia and sphincter disorders occurring after lumbar puncture and lumbar spine surgery. Magnetic resonance imaging is the imaging modality of choice to assist in the differential diagnosis of an SSH. Early surgical decompression is necessary for optimal neurological recovery.

The Role of hypocalcemia as a prognostic factor in mortality and morbidity in patients with moderate to severe brain injury

Shafiee Sajad MD, Shafizad Misagh

Mazandaran University of medical sciences
Sjad.shafiee@ gmail.com

Importance of the issue and the necessity of the project: Based on the definition of the Centers for Disease Control and Prevention (CDC) traumatic brain injury is defined as a disturbance in brain function following head injury or penetrating injury by. Traumatic brain injury is a major public health problem. This is despite the fact that 1.7 million new people per year suffer only in the United States. In 2010, 3.5 million people died of brain damage and 50,000 people died of traumatic brain injury. Despite the advances in technology and the recognition of molecular cells in the pathophysiology of traumatic brain injury, there is currently no diagnostic method to predict mortality in patients suffering from this condition. Considering the pathophysiology of neuronal damage following traumatic brain injury, many markers have been developed to predict and determine the prognosis of mortality in these patients.

Objectives of the project: The main goal of this study was to investigate the role of hypocalcemia (defined with calcium less than 8.5 mg/dl) on the third day as a prognostic factor in the mortality of patients with moderate to severe brain damage.

Epidemiology of Guillain-Barré syndrome in southern Iran

Ahmad Vahednasiri[*1]

1. Bs student of operating room, Student Research Committee, Maragheh University of Medical Scinces, Maragheh, Iran.

ahmad.vahednasiri@yahoo.com

Background & Aim: After eradicating infantile paralysis from Iran, Guillain-Barré syndromeis the most common cause of acute flaccid paralysis. This autoimmune neurodegenerative disease occurs in the body following infection, inflammation, vaccine injection, surgery, cancer or in the form of idiopathicinfection. Due to differences in different parts of the world this researchis done for study Epidemiology of Guillain-Barré syndromein southern Iran.

Method: In this review research, accessed to articles by searching in Pubmed, SID data bases and Google scholar searching engine and using Guillain-Barré syndrome, epidemiology and southern Iran key words.

Of the articles that have been published since 2005 to 2016, 7 articles were selected and studied.

Results: The proportion of Affected Men to Affected women is two to one. The age range was between 2 up to 87 years old. 56/86% of patients had a history of respiratory illness that44/82% of them had upper respiratory tract infections 10 days before the onset of paralysis. 7/9% of the patients were pre-vaccinated. 40/4% 0f the patients had recent Helicobacter infection. In 52/94% of the patients, there were risk factors such as gastrointestinal disease and Surgery. The most commonly therapeutic methods were plasma exchange (TPE) and corticosteroids. The lowest levels of Lack of treatment were observed in therapeutic plasma exchange patients.

Discussion and conclusion: According to the difference in age distribution and treatment protocols in different areas, it is recommended that geographic patterns be considered in order to better treat patients.

Key words: Guillain-Barré syndrome, epidemiology, southern Iran

Care of the patient with traumatic brain injury

Dr. Nader Aghakhani, Dr. Hosein Habibzadeh, Khadijeh Lak, Hamideh Karimi

Address: Patient Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

As a leading cause of disability worldwide, traumatic brain injury causes by a blow to the head that affects how the brain works.

Because nurses are the member of professionals team who see the full impact of traumatic brain injury and have the abilities that can effect on the course of a patient's recovery, it is important for nurses to have a confirmable resource to help them achieve the best possible cares.

Therefore, the nursing responsibilities can becategorized:

1. Being familiar with each diagnostic modality and its mechanism and indication, and provide education and guidance to the patient and his/ her family member regarding the procedure. Care should be taken to facilitate the assessment and teaching process.

2.Patients undergoing (MRI) scans should be assessed for the presence of ferromagnetic foreign bodies such as metal in the orbits, aneurysm clips, pacemakers, coils and ventricular shunt catheters, and implanted pumps or stimulators. Skull X rays should be obtained for any patient with possible exposure to metal fragments in the orbits prior to obtaining an MRI. Aneurysm clips and coils, besides creating artifact on the image, may be contraindicated depending on the manufacturer.

3. Obtain a past medical history, and allergy and medication list, and inform the ordering provider of any possible contraindications to the examination. The nurse needs to assess the patient's renal function and notify the ordering provider if the glomerular filtration rate is decreased and insert an (IV) line for the injection of the contrast material and make frequent assessments of the site and possible allergic reaction to the dye.

34. The nurse should treat patients appropriately with anxiety reducing tactics, such as visualization techniques and deep-breathing exercises. Sedatives may be necessary to reduce anxiety and promote tolerance of the treatment.

Key words: Care, patient, traumatic, brain injury

Primary Orbital Hydatid Cyst

Dr. Hamid Jangiaghdam

Address: Department of Neurosurgery Azarbaijan Hospital urmia Iran
Hamid.jangiaghdam@gmail.com

Hydatid cyst is a rare parasitic infection that involved all organs. It caused by the larval stage of Echinococcus tapeworms. Hydatid cyst of the head and neck is a very rare condition, even in areas where Echinococcus infestation is endemic. Orbital hydatid cyst is extremely rare and accounts for less than 1% of all hydatid cysts.

Herein a 24-year-old man with primary orbital hydatid cyst is introduced. He complained from proptosis and diplopia.

MRI images revealed a lesion with low signal intensity on T1-weighted images and high signal intensity on T2-weighted images, which displaced the optic nerve inferiorly and the globe inferolateral.

The cyst was enucleated via frontotemporal craniotomy and superior orbitotomy approach. Histopathological examination of the fluid confirmed the diagnosis of hydatid cyst. Treatment of the orbital hydatid cyst is surgical excision followed by the systemic use of albendazole.

Emotional needs of nurses of the brain tumor surgery patients

Narges Rahbar, Hamideh Karimi, Dr. Aniroda Broomand,Gholam Reza Salahi, Lobat Masroorfar

Address: Patient Safety Research Center, Urmia University of MedicalSciences, Urmia, Iran

As care needs changed, nurses are challenged to make decisions. They may took on new duties that they are not educated to do. In the cases where treatment is not successful, they had to cope with the difficult issues of bereavement and death. And they cope with a sense of denial and feelings of anger, resentment, and depression.

As the patient becomes progressively disabled, the psychosocial burden of caregiving at the end of life is underappreciated by the fear of the patient's increased disability and physical death. Nurses in the role of main caregivers need the same information and support needs.

The psychosocial support needs of patients are likely to be greater, because there is little time to adjust or adapt to the disease. In cases of longer-term survivors in whom the brain tumor is stable for some time, the illness is affecting on all aspects of life. Nurses want to know the degree of recovery to expect, regardless of the specific diagnosis and their personal struggles remained hidden from other family members.

Although the psychological experience of the illness is different for the nurses, because they will already have experienced cancer for some time, they may share some of the same care plans as the disease progresses. New reviews draw attention to differences and similarities in the needs of patients with different levels of brain tumor.

Key words: emotional, needs, nurses, brain tumor, surgery patients

Surgery as a method for treatment of Epilepsy

Dr. Ali Boustani[1], Dr. Nader Aghakhani[2], Delpak Mohammadi[2]

1. Khatamol Anbia hospital, Salmas, Urmia University of Medical Sciences, Urmia, Iran
2. Patient Safety Research Center, Urmia University of Medical Sciences, Urmia, Iran

Epilepsy surgery is a neurosurgical procedure where an area of the brain affected by seizures is disconnected or resected to eliminate seizures or reduce seizure burden. Approximately 60% of all people with epilepsy (0.4% of the population of industrialized countries) have focal epilepsy syndromes. The patients that cannot be controlled with anticonvulsive drugs are candidates for this kind of treatment as an alternate method to medications.

Epilepsy surgery has been used for more than a century, but its use increased in the 1990s, because of its efficacy in selected patients by locating the epileptic abnormality and determine if surgery can affect normal brain function by resecting the part of brain that consists of the epileptic focus. The evaluation typically includes Long-term video-EEG monitoring, neurological examination, neuropsychological evaluation, routine EEG, and neuroimaging such as MRI, positron emission tomography (PET) and Single photon emission computed tomography (SPECT). Computer models of seizure generation may provide additional information about the source of seizures, too.

When the epilepsy focus is diagnosed, the specific surgery involved in treatment will be done. The type of surgery is based on the location of the seizure focal point. Surgeries for epilepsy treatment may be included: occipital resection, hemispherectomy, ground temporal and extratemporal resection, temporal lobe resection, parietal resection, frontal resection, extratemporal resection, and callosotomy.

The evaluation for this method enquires MRI, and EEG convergence due to the seizure focus. Invasive studies may be needed along with additional imaging techniques to determine the seizure focus.

Key words: surgery, a treatment, Epilepsy

Coagulopathy in traumatic brain injury

Firooz Salehpoor**, Mohammad Amin Valizadeh*, Javad Aghazadeh**, Aydin Kazempoor Azar**, Farhad Mirzaee**, AmirAbbas Ghasemi ** and Atta Mahdkhah**

*Department of Anesthesiology, Urmia University of Medical Sciences
** Department of Neurosurgery, Urmia University of Medical Sciences

Abstract

Abnormalities in blood coagulation, although quite common after traumatic brain injury (TBI), are of unknown significance. The authors review the clinical and pathophysiological features of this phenomenon and emphasize its origin in disseminated intravascular coagulation. This connection provides a possible explanation for much of the cerebral ischema that accompanies TBI, namely intravascular microthrombosis. The authors' own research findings support this contention and suggest possible therapeutic avenues.

A number of compelling studies demonstrate that DIC is a common and important consequence of TBI. In particular, posttraumatic coagulapathy appears to be linked to secondary cerebral injury. Although the extent of this process has yet to be elucidated fully, coagulation abnormalities are evident soon after trauma. This allows early identification of patients likely to suffer secondary complications and provides an opportunity to evaluate promising agents that may mitigate posttraumatic DIC and related pathologies in these patients. This is an area deserving of more intensive research.

Keywords: Traumatic brain injury coagulopathy disseminated intravascular coagulation cerebral ischemia intravascular microthrombosis

A Case of Severe Multiple Intracranial Abscess due to Bacterial Endocarditis

Firooz Salehpoor**, Javad Aghazadeh**, Farhad Mirzaee**, Atta Mahdkhah**, Moslem Shakeri**, Vahideh shahriyari and Nazieli Hamidzadeh.

*Department of Anesthesiology, Urmia University of Medical Sciences
** Department of Neurosurgery, Urmia University of Medical Sciences

Intracranial abscesses are rare and fatal infections. Brain abscesses are uncommon in western countries but are a serious problem in developing countries. We report a case of severe intracranial abscesses in a 56-year-old male patient who fully recovered with intensive treatment. In the case presented here, the symptoms and signs of bacterial endocarditis were associated with concomitant severe brain abscess, including malaise, fever and chills, petechiae of sclera, tenderness of left upper quadrant, Osler's nodes of fingers, heart murmur and loss of consciousness.The treatment consisted of direct intraventricular delivery of broad-spectrum antibiotics (e.g. linezolid), ventilator support and physiotherapy.

Keywords: Abscess, Endocarditis

Postoperative neuropathic pain

Firooz Salehpour, Javad Aghazade, Iraj Lotfinia, Ghaffar Shokouhi, Mohammad Shimia, Atta Mahdkhah, Aydin Kazempoor Azar, Farhad Mirzaee, Vahideh Shahriyari, Sima haje Mohammadi.

Department of Neurosurgery, Tabriz, Iran

Introduction: Neuropathic pain represents a major neurologic complication associated with neuronal injury. It occurs when any injury, disease, or dysfunction nervous system. Nerve root mechanical compression and neuroinflammation are the two main discussed theories for the pathogenesis of neuropathic pain, especially in remained leg pain during lumbar disk herniation (LDH). D- Cycloserine (DCS) is a partial agonist of the NMDA receptors and can prevent neuropathic pain theoretically. In this study, we tested the hypothesis that DCS would reduce the postoperative neuropathic pain during the first 24 hours after single level lumbar discectomy.

Methods: In the present study, participants were chosen among candidates for a single level lumbar discecyomy, from March 2013 to March 2014. Randomization and data collection patients were randomly allocated in to groups A and B using a numerical randomizing computer system. Each patient received an order number and took an identical capsule 2 hours before surgery containing either 250 mg D- cycloserin or placebo. Visual analogue scale and morphine consumption were compared at 6 hours intervals up to 24 hours.

Results: Comparing the two groups, the D-cycloserinegroup showed a significant reduction in remained leg pain during the first 24 hours.

Conclusion: This study suggests that the decision to treat remained neuropathic pain after lumbar discectomies should be taken before the operation. DCS is effective to decrease remaining leg pain by the end of 24 hours in postdiscectomy patients.

Keywords:D-cycloserine, Discectomy, Leg pain

Chiari I malformation associated with syringomyelia: a retrospective study of 22 surgically treated patients

Firooz Salehpour, Javad Aghazade, Atta Mahdkhah, Aydin Kazempoor Azar, Farhad Mirzaee, Mohammad Shimia.

Department of Neurosurgery, Tabriz, Iran

Objectives: The objective of this article is to probe the surgical procedures of treatment for Chiari I malformation (CMI) associated with syringomyelia and evaluate their efficacy based on clinical and neuroradiological results.

Methods: We retrospectively reviewed 22 surgically treated patients with CMI. We classified our patients after surgery in four global outcome categories as follows: very good (complete remission or marked improvement), good (slight improvement), fair (stability), poor (slight or marked deterioration). We simply describe the postoperative diameter of the syrinx (collapse, decreased, unchanged or increased).

Results: At the time of discharge, the result was very good in 12 cases (54.54%), good in 5 cases (22. 72%), fair in 3 cases (13.63%) and poor in 2 cases (0.09%). In the follow-up period, neurological status improved and was then sustained in 92.54% of patients. At more than 2 years after surgery, we were able to compare pre- and postoperative MR images in 218 patients. A collapse of the syrinx was seen in 30.56% of patients. The size of the syrinx was decreased in 31.65% (69/218) of patients, remained unchanged in 23.45% of patients and increased in 6.34% of patients.

Conclusion: Patients with CMI should be treated using various surgical procedures according to different magnetic resonance imaging types; surgical treatments may fully decompress the medulla oblongata and ameliorate the clinical syndromes.

Delayed intracranial hypertension after cranial vault remodeling for nonsyndromic single-suture synostosis

Firooz Salehpour, Javad Aghazade, Iraj Lotfinia, Atta Mahdkhah, Mohammad Asghari, Aydin Kazempoor Azar, Farhad Mirzaee, Leila Azarmi Arabshahi.

Department of Neurosurgery, Tabriz, Iran

Object: Delayed intracranial hypertension may occur after cranial vault remodeling for synostosis and may result in visual loss and developmental delay. Delayed intracranial hypertension is relatively common in children with syndromic, multisuture synostosis, but the incidence is poorly defined in children with single-suture nonsyndromic synostosis. This study evaluates the frequency of reoperation for delayed intracranial hypertension after single-suture synostosis repair.

Methods: Patients who had undergone cranial vault remodeling for nonsyndromic single-suture synostosis and were treated at a single tertiary pediatric hospital between 2000 and r 2015 were analyzed for the occurrence of delayed intracranial hypertension and reoperation for cranial vault remodeling.

Results: 23 patients with clinical follow-up of at least 2 years were analyzed from a total of 36 consecutive patients. The average patient age at the initial operation was 7.4 months. 7.9% of patients presented with delayed clinical and ophthalmological signs and symptoms of intracranial hypertension following initial cranial vault reconstruction, confirmed indirectly in each case by CT findings and directly by intracranial pressure monitoring. These 5 patients underwent repeat cranial vault reconstruction.

Conclusions: Calvarial growth restriction and intracranial hypertension occur sporadically following primary cranial vault reconstruction for single-suture nonsyndromic cranial synostosis. In this series, delayed intracranial hypertension occurred only in male patients who underwent primary repair of isolated sagittal synostoses at an age less than or equal to 5 months

Surgical site infections following instrumented stabilization of the spine

Firooz Salehpour, Javad Aghazade, Iraj Lotfinia, Atta Mahdkhah, Aydin Kazempoor Azar, Ali Meshkini, Farhad Mirzaee

Department of Neurosurgery, Tabriz, Iran

Background: Implant-associated infections are still a feared complication in the field of orthopedics. Bacteria attach to the implant surface and form so-called biofilm colonies that are often difficult to diagnose and treat. Since the majority of studies focus on prosthetic joint infections (PJIs) of the hip and knee, current treatment options (eg, antibiotic prophylaxis) of implant-associated infections have mostly been adapted according to these results.

Objective: The aim of this study was to evaluate patients with surgical site infections following instrumented stabilization of the spine with regard to detected bacteria species and the course of the disease.

Patients and Methods: We performed a retrospective single-center analysis of implant-associated infections of the spine from 2000 to 2015. A total of 168 patients were included in the study. The following parameters were evaluated: C-reactive protein serum concentration, microbiological evaluation of tissue samples, the time course of the disease, indication for instrumented stabilization of the spine, localization of the infection, and the number of revision surgeries required until cessation of symptoms.

Results: Coagulase-negative *Staphylococcus* spp. were most commonly detected (50%), followed by fecal bacteria (33.3%). In 23.2% of cases, no bacteria were detected despite clinical suspicion of an infection. Most patients suffered from degenerative spine disorders (44.9%), followed by spinal fractures (23.9%), non-degenerative scoliosis (20.3%), and spinal tumors (10.1%). Surgical site infections occurred predominantly within 3 months (64.5%), late infections after 2 years were rare (4.3%), in particular when compared with PJIs. Most cases were successfully treated after 1 revision surgery (60.9%), but there were significant differences between bacteria species. Fecal bacteria were more difficult to treat and often required more than 1 revision surgery.

Conclusion: In summary, we were able to demonstrate significant differences between spinal implant-associated infections and PJIs. These aspects should be considered early on in the treatment of surgical site infections following instrumented stabilization of the spine.

Keywords: biofilm infection; coagulase-negative Staphylococci; instrumentation of the spine; surgical site infection

Pseudotumor cerebri in children with Down syndrome

Mohammad Mirzaee, Afshin Lotfi Sadigh, Firooz Salehpour, Javad Aghazade, Saba Asghari Kaleibar,Parviz Samadmotlagh, Atta Mahdkhah, Shabnam Malik Mahdavi

Department of Ophthalmology, Tabriz, Iran
Department of Neurosurgery, Tabriz, Iran

Purpose: To report 2 pediatric Down syndrome patients with optic nerve elevation and pseudotumor cerebri.

Methods: Medical record review of 117 pediatric Down syndrome patients aged 0 to 18 years was performed. All patients were seen at the University of Wisconsin pediatric ophthalmology clinic between 1995 and 2005.

Results: 3.4% of Down syndrome patients seen at the university's pediatric ophthalmology clinic were found to have optic nerve elevation. None of the patients had a history of headache or transient visual obscuration. One of the patients had high hyperopia at the time of presentation, and all were referred for neurologic evaluation of suspected increased intracranial pressure. Two patients were diagnosed with pseudotumor cerebri (PTC) based on a normal brain magnetic resonance imaging (MRI) scan, an elevated opening cerebrospinal fluid (CSF) pressure on lumbar puncture, and normal CSF analysis results. The fourth patient's elevated optic nerve appearance was likely secondary to PTC after obtaining normal brain MRI results; however, this patient did not undergo a lumbar puncture. One child with PTC demonstrated improvement in visual acuity and optic nerve appearance after acetazolamide and weight loss therapy. The patients with PTC were treated with either low-dose acetazolamide or weight loss therapy and experienced optic atrophy. The final patient, who did not undergo lumbar puncture, experienced spontaneous resolution of optic nerve elevation. Mean follow-up duration was 45 months.

Conclusions: Only 3.4% of Down syndrome children were found to have optic nerve elevation in a single institution. Pseudotumor cerebri should be considered in asymptomatic Down syndrome patients with elevated optic nerves. Medical therapy in PTC with acetazolamide can lead to improvement in visual acuity and optic nerve appearance, although optic atrophy also was seen.

Keywords: Pseudotumor cerebri, Down Syndrome

Sosium Disturbances among Patients with Subarachnoid Hemorrhage

Mohammad Amin Valizadeh*, Javad Aghazadeh**, Firooz Salehpoor**, Aydin Kazempoor Azar**, Farhad Mirzaee** Atta Mahdkhah**, Ali Bradaran** and Parvaneh Mohammadpour

*Department of Anesthesiology, Urmia University of Medical Sciences
** Department of Neurosurgery, Urmia University of Medical Sciences

Objective: Abnormal serum sodium levels (hyponatremia and hypernatremia) are frequently observed during the acute period aftersubarachnoid hemorrhage (SAH) and may worsen cerebral edema and mass effect. We performed this study to determine the prognostic significance of serum sodium concentration abnormalities.

Methods: We analyzed prospectively collected data for the placebo treatment group in a clinical trial conducted at a neurosurgical center in Urmia. The presence of hypernatremia (serum sodium concentration of >145 mmol/L) and hyponatremia (serum sodium concentration of <135 mmol/L) was determined with serum sodium measurements obtained at admission and 3, 6, and 9 days after SAH. The effects of hypernatremia and hyponatremia on the risk of symptomatic vasospasm and on 3-month outcomes were analyzed after adjustment for the following potential confounding factors: age, sex, preexisting hypertension, admission Glasgow Coma Scale score, initial mean arterial pressure, subarachnoid clot thickness, intraventricular blood or intraparenchymal hematoma, ventricular dilation, and aneurysm size and location.

Results: Of patients in the analysis, 21% developed hypernatremia and 37% developed hyponatremia. Hypernatremia was significantly associated with poor outcomes (odds ratio, 2.7; 95% confidence interval, 1.2–6.1). A positive correlation was observed between the highest sodium values recorded and Glasgow Outcome Scale scores at 3 months (P< 0.0001 by analysis of variance). Hyponatremia was not associated with 3-month outcomes (odds ratio, 1.9; 95% confidence interval, 0.9–4.3). Neither hypernatremia nor hyponatremia was associated with the risk of symptomatic vasospasm.

Conclusion:Hyponatremia seems to be more common than hypernatremia after SAH. However, hypernatremia after SAH is independently associated with poor outcomes, and this association is independent of previously identified outcome predictors, including age and admission Glasgow Coma Scale scores. Further studies are needed to define the underlying mechanism of this association.

Keywords: Outcome, Subarachnoid hemorrhage

Glioblastoma suppression and Transforming Growth Factor-β

Hadi Ebrahimi[1], Abbas Azadmehr[2], Farzane ordoni aval[2]

1. Mobility Impairment Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, I.R.Iran.
2. Immunology Department, Babol University of Medical Sciences, Babol, Iran.

Abstract

Glioblastoma (GBM) is the most malignant and aggressive type of glioma, associated with a high rate of mortality. The Transforming Growth Factor-β Receptor II(TGFβ RII) is involved in glioma initiation and progression. On the other hand, TGFβ RII blockade is critical to the inhibition of GBM. Therefore, we aimed to determine the effects of specific TGFβ RII siRNA on the survival of U-373MG glioblastoma cells. TGFβ RII siRNA was transfected, and qRT-PCR was performed to examine TGFβ RII mRNA expression. Cell survival was determined using colorimetric MTT assay, and platelet-derived growth factor-BB (PDGF-BB) level was measured in the culture supernatant using ELISA assay. Our findings indicated that specific siRNAs could dose-dependently suppress TGFβ RII mRNA expression after 48 hours. In addition, treatment with TGFβRII siRNA significantly reduced tumor cell survival and decreased the amount of PDGF-BB proteins in the cell culture supernatant. Our results suggest that TGFβ RII blockade can be a promising complementary treatment for glioma in the clinical trial study.

Keywords: TGF-β RII, siRNA, PDGF-BB, Glioblastoma

Computerized texture analysis of MR images of patients with Mild Traumatic Brain Injury

Akbar Gharbali*[1], Fatemeh Ahmadi [2]

1 Medical Physics Department, Medical Faculty, Urmia University of Medical Sciences, Urmia, Iran
2 MSc Student in Medical Physics, Medical Faculty, Urmia University of Medical Sciences, Urmia, Iran

Abstract

Early detection of subtle changes in cerebral tissue caused by mild traumatic brain injury (MTBI) increases the cure rate and provides optimal treatment. At present few clinical systems are available to classify TBI from mild to severe such as the Glasgow Coma Scale. Although in most of the case neuropsychological testing is the "gold standard" modality for classifying TBI, but it has it's limitation on sensitivity and specificity. The vast majority victims of MTBIs have normal finding on conventional computed tomography (CT) scan and magnetic resonance imaging (MRI) scans. It would be a major advance in diagnosis and monitoring of MTBI to develop a reliable clinical method of evaluation of histological changes of the MTBI. There is evidence that imaging methods including CT and MRI scans can provide this when combined with computerize texture analysis of the injured features. In an effort to increase the diagnostic value of the MRI of the MTBI and radiologist confidence researchers recently applied a statistical texture analysis package to MRI images of patients with MTBI in order to quantify image texture and thereby distinguish different uptake patterns of the brain injuries. The purpose of the present paper is a review of recent research works that have been done in this field of study.

Key words: Texture analysis, mild traumatic brain injury, Magnetic resonance imaging. Neuropsychology

Epidemiological Study of Traumatic injuries and role of Medical Emergencies of West Azerbaijan Province in 1395

Javad Sheikhcanlou Milan*, BagerBahrami, Mahnaze Jafari

*Urmiauniversity of Medical Sciences , Amozesh_ems@yahoo.com

Introduction: Traffic accidents in developing countries, including Iran, are of great importance since the events like this in Iran are the second leading cause of death and first factor of disease burden. In West Azerbaijan province, due to the abundance of suburban roads and other terrestrial and climatic hazards, traffic accidents cause significant casualties and deaths. The role of medical emergencies is very important in this area; with the possession of 74 urban and suburban bases in the province, after triage and advanced therapies done at the scene and during transfer and with prior coordination a significant percentage of patients and the injured are sent to the nearest unit of treatment and trauma. Therefore, this study was conducted with the aim of investigating the traumatic casualties of theinjuredin different parts of the province of western Azerbaijan and the role of the Center for Emergency Medicine in triage, treatment and timely transmission of injured patients.

Methods: This descriptive-cross-sectional study was performed on the traumaticvictims referred to provincial health centers. The data were collected through 30medical centersof universities, governmental and private sectors in the province and analyzed using appropriate statistical software.

Results: The findings show that the total number of traffic accidents clients referred to the medical centers in the year 1395 was 24293 (28% female and 72% male), of which 11520 cases (48%) were related to suburbanevents, 3509 cases (14%) is related to accidents of rural roads and 9264 cases (38%) are from urban incidents, also, 14749 were slightly injured and 9309 had severe injuries, and 20 suffereddisfigured limbs, In addition, 13134 people (54.6%) of these were transferred to emergency medical centers of the province by emergency department.

Conclusion: This study suggests that, because of the high accident rate of the roads of West Azerbaijan province and the resulting losses, the role of the responsible organizations in preventing accidents and promoting the culture of safe driving, including the radio and TV, the traffic police, road and urban planning organization, and other related organizations were very important before the incident and the timely intervention of pre-hospital emergencies in the aftermath of the incident and In order to realize this, it is necessary to coordinate and assist all the organizationsinvolved in the subject.

Keywords: traffic accidents, medical emergencies, driving

The long term prospective follow up protocol for the treatment of chronic subdural hematoma via Dexamethasone- Captopril combo therapy: DEX-PRIL study

Niakan Amin M.D.*, Taheri Reza M.D., Khalili H.A. M.D., Shamspour S.Z. M.D

* Iran, Fars, Shiraz, Zand blvd, Namazee hosp., Neurosurgery dept. Shiraz University of medical sciences.
aniakan@sums.ac.ir

Abstract

Background: The combo therapy regimen consisting of dexamethasone and captopril (DEX-PRIL) for chronic subdural hematoma (CSDH) seems to overcome the long-term scenario regarding treatment of CSDH despite its nature with waste and wane. In this prospective cohort study, we proposed and evaluated the long-term effect of combo therapy regimen instead of twist drill craniostomy for CSDH.

Materials and Methods: We prospectively followed and analyzed the data of the patients undergoing a DEX-PRIL regimen (Dexamethasone 8mgr iv q8h while tapered+ Captopril 12.5 mgr po q8h) for a two years period of time, consisting of the size of the hematoma and the neurological status (via extended Glasgow Outcome Scale).

Results:A sum of 57 patients was included in this study. During a period of 1 year follow up, 37 ones experienced a significant resolution of the hematoma size while it was measured in serial brain CT scans. 2 patients passed away during the follow up period while the cardiac entities found to be the culprit cause. At last 5 patients gave up the follow up sequence. 4 patients suffered a unilateral weakness despite of a significant decrease in size of the hematoma. One patient developed a gastrointestinal bleeding event while not taking regular regimen. Neither of subjects experiences an episode of seizure attack, nor developed an increase in the size of the CSDH thickness.

Conclusion: The precise analysis of our prospectively allocated database revealed that the DEX-PRIL therapy regimen may play a promising role in non-surgical management of CSDH. This combo therapy may overcome the unwanted complications following the more traditional twist drill craniostomy.

Key words: Dexpril, chronic, subdural, hematoma

Intrauterine Fetal Brain Injury Following Car Accident in the 28th Week of Pregnancy; a Case Report

Mohammad Safdari[1], Masoud Pishjoo[2*], Zohre Safdari[3]

1. Assistant Professorof Neurosurgery, Department of Neurosurgery, Zahedan University of Medical Sciences, Zahedan, Iran.
2.Neurosurgery resident, Mashhad University of Medical Sciences, Mashhad, Iran.
3. Radiology resident, Zahedan University of Medical Sciences, Zahedan, Iran.

Abstract

Introduction: Trauma, especially traumatic injuries due to car accidents are one of the causes of maternal and fetal mortality and morbidity during pregnancy.Fetus brain injuries are usually caused fetus death.

Case presentation: We have reported a case of 28th week fetus brain injury that was due to inappropriate seatbelt during car accident.After the birth, fetus had multiple morbidities such as developmental delay, hypotonia, blindness, oropharyngeal dysphagia and simple partial seizure.

Conclusion: Because of high incidence of morbidity and mortality in fetal traumatic injuries,recommended that, all pregnant women to use appropriate seatbelt during using of car and if fetal brain injury occurs diagnostic procedures which including CT scan and fetal heart rate (FHR), should be done.

Keyword: Intrauterine, Traumatic Brain Injury, Pregnancy

Pre-operative image-based segmentation of the cranial nerves and blood vessels in microvascular decompression: Can we prevent unnecessary explorations?

Dolati P[1], Golby A[1], Eichberg D[1], Dunn IF[1], Mukundan S[1], Al-Mefty O[1].

1: Brigham and Women's Hospital, Harvard Medical School, Boston, USA

Abstract

Objectives: This study was conducted to validate the accuracy of image-based pre-operative segmentation using the gold standard endoscopic and microscopic findings for localization and pre-operative diagnosis of the offensive vessel.

Patients And Methods: Fourteen TN and 6 HS cases were randomly selected. All patients had 3T MRI, which included thin-sectioned 3D space T2, 3D Time of Flight and MPRAGE Sequences. Imaging sequences were loaded in BrainLab iPlanNet and fused. Individual segmentation of the affected cranial nerves and the compressing vascular structure was performed by a neurosurgeon, and the results were compared with the microscopic and endoscopic findings by two blinded neurosurgeons. For each case, at least three neurovascular landmarks were targeted. Each segmented neurovascular element was validated by manual placement of the navigation probe over each target, and errors of localization were measured in mm.

Results: All patients underwent retro-sigmoid craniotomy and MVD using both microscope and endoscope. Based on image segmentation, the compressing vessel was identified in all cases except one, which was also negative intraoperatively. Perfect correspondence was found between image-based segmentation and endoscopic and microscopic images and videos (Dice coefficient of 1). Measurement accuracy was 0.45 ± 0.21 mm (mean ± SD).

Conclusion: Image-based segmentation is a promising method for pre-operative identification and localization of offending blood vessels causing HFS and TN. Using this method may prevent some unnecessary explorations on especially atypical cases with no vascular contacts. However, negative pre-operative image segmentation may not preclude one from exploration in classic cases of TN or HFS. A multicentre study with larger number of cases is recommended.

Keywords: Cranial nerve segmentation; Endoscopic and microscopic view; Hemifacial spasm; Trigeminal neuralgia

Local transplantation of bone marrow-derived mast cells combined with silicon grafting improves peripheral nerve regeneration: An animal model study in rat

Leila Zarei[1*], Rahim Mohammadi[2]

[2]Department of Anatomical Sciences, Faculty of Medicine, Lorestan University of Medical sciences, Khorramabad, Iran

[2]Department of Surgery and Diagnostic Imaging, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran

***Correspondence to:** Leila Zarei, Solid Tumor Research Center, Urmia University of Medical Sciences, Urmia, Iran. E-mail: leilazarei652@yahoo.com

Abstract:

Background: Effects of local transplantation of bone marrow-derived mast cells (BMMCs) on peripheral nerve regeneration were studied using a rat sciatic nerve transection model.

Materials andMethods: A 10-mm sciatic nerve defect was bridged using a silicon conduit filled with BMMCs in BMMC group. In silicon control group (SIL), the conduit was filled with phosphate-buffered saline alone. The regenerated nerve fibers were studied within 12 weeks after surgery. In sham-surgery group (SHAM), the sciatic nerve was only exposed and manipulated. In transectedgroup(TC) a 10-mm sciatic nerve defect was created and the nerve stumps were sutured to the adjacent muscles. The regenerated nerve fibers were studied functionally, biomechanically, histologically and immunohiscochemically. **Results:** Functional and biomechanical studies confirmed faster recovery of regenerated axons in BMMCs transplanted animals compared to SIL group ($p < 0.05$). Morphometric indices of the regenerated fibers showed that the number and diameter of the myelinated fibers were significantly higher in BMMCs transplanted animals than in NC group ($p < 0.05$). In immunohistochemistry, location of reactions to S-100 in BMMCs transplanted animals was clearly more positive than that in SIL group.

Conclusions: BMMCs transplantation could be considered as a readily accessible source of cells that could improve functional recovery of transected sciatic nerve.

Key Words: Peripheral nerve regeneration, BMMCs, silicon conduit

Terminologic review of content related to leukemia, gastric cancer, breast cancer, skin cancer, lung cancer Using Google Trends in Iran and the United States

Ebrahimi Shahram[1], Dr.Doulani Abbas[2]

[1] Department of IT, Urmia University of Medical Sciences,Urmia,Iran.

[2] Alzahra University, Tehran, Iran

Abstract

Introduction: Most Internet users frequently use search engines and subject directories as tools for searching and accessing information. Today, search engines provide a variety of services to provide statistics on how much Administrators in optimizing user searches (SEO), show the gap of among specific users (subject specialists) and general users from the point of view and how to deal with specific topics they give.

Methods and Materials: In this paper, using the Scientometrics and content analysis methods, the research focused on Breast cancer, Lung cancer, Leukemia, Skin cancer and gastric cancer by Google's search engine in Iran and the United States over the past five years and one year. The research tool in this research was Google Trends. This service provides all statistics related to searches based on user-defined keywords by country and region.

Conclusions: The results showed that in the last 12 months and 60 months, the most search and concern of Iranian users were for leukemia, gastric cancer, lung cancer, breast cancer and skin cancer, respectively, Also similar to the above conditions in the United States, respectively, were Breast cancer, Lung cancer, Leukemia, Skin cancer, gastric Cancer has been, And there is a lot of overlap between one year and five years, and the search interest in both Iran and the United States is similar at the time, From the perspective of Iranian users search processes, the biggest concern in the field of leukemia is American Breast Cancer Breast Cancer. There is also a significant difference between and the number of searches for these five cancers, meanwhile, users have used the term (Signs) for these cancers, which indicates their concern about the incidence and curiosity about the disease.

Keywords: Breast cancer**,** Lung cancer, Leukemia, Skin cancer, gastric cancer

Introduction of Sharp Objects into Brain WithInfanticidal Intention

BijanHeshmati1, Shaahin Mehin2, Sara Hanaei3 and FaridehNejat3 ,*

Article Notes and Dates

Child abuse, malicious and deliberate intention of harming or killing a child, is well-documented in history and is more hideous in infants due to their disability to communicate and defend, making them more susceptible victims for such a crime.

Embedding sewing needle(s) into brain through natural openings and soft parts of the cranium has been reported for infanticide purpose (1). The relative small number of reported cases in medical literature does not match the real number of cases due to missed-detections, lack of physician referral or infant death before disclosure of respective cause (1, 2).

A 57-year-old man presented with symptoms of an ischemic cerebrovascular accident (CVA). Brain CT scan revealed a left middle cerebral artery territory infarct and surprisingly a metallic foreign body embedded in mid-frontal region slightly deviated to the right (Figure 1 A) that proved to be artifacts of a sewing needle on plain X-rays (Figure 1 B). The site of entry seemed to be anterior fontanel showed as a dimple on 3D CT reconstruction of the skull (Figure 1 C).

There was no record or sign of previous trauma or any surgical procedures on the scalp, skull or brain. The family denied any unusual childhood or infancy background including non-parental babysitter or stepmother. Past medical history lacked of any relevant symptoms attributable to the presence of foreign body in the brain. Finally, we came to conclusion that this was an accidental finding.

Convenient brain penetration sites for sharp small-caliber objects are non-ossified regions including fontanels, cranial sutures, ear canal and orbits during infancy (4, 5), with anterior fontanel as the most primeval and particular site due to its width and noticeability. Therefore, it was commonly used by non-medical offenders.

Proper healing and concealing make the introduction site unnoticed and if the patient survives from the acute and subacute complications, metallic object would sink deeper into brain; probably as its higher specific gravity and also impact of cerebral pulsations (6).

Metallic foreign bodies, especially iron-made needles, are usually well-tolerated in brain, as lack of air exposureand irregular iron phosphate spots on the needle play protective roles against the corrosive process (4). Thus, its size and shape will retain for decades.

The usual approaches to such patients have ranged from follow-up observations to surgical interventions with a variety of outcomes (1, 5).

Unless a definite relationship between patient's clinical manifestations and presence of sharp object is established, intention of a surgical intervention should be either avoided or carefully weighed against the possible complications of such an approach.

Figure 1.A, Brain CT scan on admission confirms infarction in left middle cerebral artery territory and presence of a metallic foreign body in mid-frontal region with slight right deviation. B, Three dimensional skull CT scan showing a sharp thin object in frontal region with length of 42 mm and a dimple in frontal bone proposing the entry site of sharp object (black arrow). C, Lateral view of skull X-ray confirms the presence of a sharp thin metallic object in frontal region.

Keywords: Needle; Intracranial; Child Abuse

Surgical approach to thoracic Thoracic Disc Herniation

Mehdi Sasani, MD

Professor of Neurosurgery, koç University School of Medicine, American Hospital, Istanbul-Turkey
sasanim@gmail.com

Thoracic disc herniations (TDH) are relatively rare and less symptomatic patients account for 0,19 to 4% of all disc herniation that are going to surgical treatment. The entity of TDH is known so the assessment and diagnosis of thoracic disc herniation patients are well performed. Otherwise select of appropriate approach and effective surgical strategy has still challenged because of poor outcome after many surgical technique which have been defined up to now. In consequence choice of favorite surgical treatment for TDH is controversial due to the location and consistency of the TDH. The approaches for treat of TDH are anterior or anterolateral and posterior or posterolateral. The posterior or posterolateral approaches use mostly for lateral location and soft or hard consistency of TDH. Only laminectomy was abandoned itself because of more neurologic detoriation after surgery. Few posterolateral alternative approaches as transpedicular without laminectomy or transfacet pedicle-sparing techniques have explained up to now. Although in posterior –lateral approaches morbidities due to transthoracic approach as anterior and anterolateral approaches do not occur, substantial paravertebral muscle dissection is needed to gain access to centrally located disc herniations, but even then, adequate ventral dural decompression can be challenging result in not good exploration for very limited range of visualization of central disc herniation. Whereas central calcified TDH can be safely removed through an anterolateral approach for it creates direct surgical dissection borderline between the dura and calcified disc herniation which adhesive together that is high risk for tearing of dura, on the other hand anterolateral approach for TDH provides secure surgical management. However, it has many disadvantage with compare of posterolateral approach, it is known that extensive open thoracotomy was recently modified into less disruptive techniques, such as the mini-open transthoracic and thoracoscopic approaches. However they have also significant transthoracic approach-related morbidities as pleural effusion, lung tissue contusion pneumonia particularly intercostal neuralgia. It is comprehensively concluded in literature that central calcified thoracic discs should be treated through an anterolateral approach, whereas lateral soft or hard discs can be removed from a posterior or posterolateral approaches.A good surgical procedure which has either posterolateral or anterolateral advantages to treat calcified central TDH as well as it create good anterior vision to avoid poor results due to spinal cord manipulation may occur in posterolateral approach

as well as.In this presentation all approaches to treat TDH was discussed and an endoscopic transpedicular intracorpural discectomy to treat midline calcified TDH as well.

Mean of required time for normalization of white blood cell count after blunt head trauma

Dr.Ali Riazi

Address: Isfahan University of Medical Sciences, Department of Neurosurgery, Alzahra Hospital
aliriazi1353@gmail.com

Results of various studies have shown that brain ischemia causes remarkable leukocytosis which may be due to structural damage to brain tissue and sympathetic or adrenal cortex hyperactivity .Increase in cortisol or catecholamine's levels is a reliable predictor in neurologic complications of blunt head injury. Patients with severe blunt head trauma develop leukocytosis and severity of leukocytosis is directly correlated with poor prognosis and more complications.

According to importance of leukocytosis in blunt head trauma, we aimed to measure the mean of required time for normalization of white blood cell count after head trauma and assess its correlation with complications of head injury in adult patients with blunt head trauma who referred to emergency room in Alzahrahospital, Isfahan, Iran.

Bilateral lambdoidcraniosynostosis in an infant with Dubowitzsyndrome:a case report

Dr.Ali Riazi

Address: Isfahan University of Medical Sciences, Department of Neurosurgery, Alzahra Hospital
aliriazi1353@gmail.com

Introduction :Lambdoidcraniosynostosis is a rare malformation which is the least common type of craniosynostosis.Syndromiccraniosynostosis has been reported in more than 150 syndromes and occur in 1:30000 live births .Despite rarity,lambdoidcarniosynostosis has been found in children with craniofacial syndromes. Dubowitz syndrome is a rare autosomal recessive disorder with pre_ and postnatal growth retardation,microcephaly,cranio facial malformations, skin involvement such as eczematous lesions and mental retardation.

Case presentation: We report a 4 month-old female infant who presented with failure to thrive and week crying. In physical examinations she had brachiocephaly,laryngomalacia,epicanthalfold,short palpebral fissure,unilateralptosis,sparsehair,hypertelorism,micrognathia,polydactily,umbilical hernia ,bilateral club foot and eczema. Imaging tests revealed bilateral lambdoidcraniosynostosis.Clinical manifestations and family history of two postnatal death in close relatives (two newborns with ptosis), was in favor of a single-gene disorder and with impression of Dubowitzsyndrome:a, she, she was referred for genetic evaluation.

Conclusion: Syndromiccraniosynostosis are mostly accompanied with bilateral coronal synostosis and only two syndromes are reported with bilateral lambdoidsynostosis in literature (a case of Opitz syndrome and a case of Potocki-Shaffer syndrome).To our knowledge our case is the first reported case of Dubowitz syndrome with bilateral lambdoidcraniosynostosis.

Keywords: Bilaterallambdoidcraniosynostosis, Syndromiccraniosynostosis, Dubowitz syndrome

Effect of three different open surgery techniques on perioperative bleeding and need for blood transfusion during and after operation in children with craniosynostosis

Dr.Ali Riazi

Address: Isfahan University of Medical Sciences, Department of Neurosurgery, Alzahra Hospital
aliriazi1353@gmail.com

Primary craniosynostosis is a congenital anomaly due to premature closure of one or more cranial sutures.All the patients with craniosynostosis who undergone open surgeries need blood and blood products transfusion because of a massive preoperative bleeding.Although there is no international agreement on the most effective surgical method for correction of craniosynostosis,results of recent studies have revealed that open cranial vault reshaping is still the best method for correction of craniosynostosis with long-term satisfactory results and less complications. Cranial vault remodeling should be done at early age (4-6 months) to prevent from complications of craniosynostosis.As open surgical techniques which have a higher risk of bleeding are more common for correction of craniosynostosis and patients have less blood volume because of their age,it is very important to choose a surgical method with lower amount of blood loss.

According to what mentioned above and lack of a comparative study of different surgical techniques for cranial vault reshaping, for the first time in Iran we aimed to compare the effect of three common open surgery methods for correction of craniosynostosis on the amount of preoperative blood loss and need to blood transfusion in patients.