News Letter

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INDIAN SOCIETY OF NEUROANAESTHESIOLOGY AND CRITICAL CARE

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From the Editor's desk

Dear Friends,

Umpteen personal requests and appeals through the mouthpiece of our Society has, at last, yielded the much needed result. In this issue we have published an interesting and rare case report written by Dr Mary Abraham, Chief of Anaesthesiology, Fortis Hospital, Noida. Despite her busy and very tight schedule Dr Mary has submitted a scientific paper for our News Letter – certainly an inspiration for others to do the same. I now fervently request all our members to read and examine the case report critically and send your observations and comments which will be published in the next issue. Nevertheless, a step has been taken in the right direction, now it is your turn to submit scientific articles, interesting observations and case report so that we can march towards achieving our goal. With cooperation from all, our goal of having our own journal may soon be fulfilled.

In the last ISNACC Annual Conference held in Hyderabad, our Society's General Body constituted a committee under my Chairmanship to look into the different superspeciality fellowship courses offered in our different institutions. To make the process more transparent, I invited comments and opinions from all our valued members which has also been published in this issue. May I please request all our members to review the recommendations and send your views in this regards. Your views and comments would be invaluable.

Beijing will be remembered in the annals of history for staging Olympics in August 2008 and also for hosting the First Asian Congress of Neuroanaesthesiology and Critical Care in November 2008 (Nov. 29-1st Dec. 2008). Many delegates from all over Asia and Oceanic region will attend the conference. In order to attract large number of delegates to this 1st Asian Neuroanaethesia meeting the organizers have kept the registration fees to a meager US $ 500.00 which includes hotel accommodation.Please visit their website for more informations – **www.asnacc.com**

For the 2009, Annual Conference of ISNACC to be held in Thiruvananthapuram (Jan 29-1st Feb. 2009), we have decided on flat delegation fees which would cover transportation, accommodation and food. This would enable delegates to simply concentrate on the scientific activities, together with the luxurious facilities overlooking the picturesque backwaters and sea beach of Thiruvananthapuram. I believe the conference will prove to be an extremely enjoyable experience.

I wish both Beijing and Thiruvananthapuram conference a great success and hope to see many of you in both Beijing and Thiruvananthapuram.

H.H. DASH
Editor-in-Chief

Perioperative Considerations in the Management of Giant Intracavernous Intracranial Aneurysms: A Case Report

Mary Abraham

Intracranial aneurysm surgery presents challenges not only to the neurosurgeon but also to the neuroanaesthesioligst as it is fraught with risks during the perioperative period. In addition, if the aneurysm happens to be a giant one, there are additional risks, some of which could be catastrophic and most often could have a major effect on the postoperative neurological outcome. One of the many sites where giant aneurysms are commonly located is the cavernous sinus where they are, giant in nature. However, in comparison to their supraclinoid counterparts, intracavernous carotid artery aneurysms (ICCAAns) are encountered less often and are rarely associated with life-threatening complications. Giant ICCAns, on the other hand, can be a formidable challenge to the neurosurgical team and their management differs in some ways from conventional aneurysm surgery. This is a report of a patient with a giant intracavernous aneurysm who after undergoing a balloon occlusion test underwent surgical trapping of the aneurysm immediately following by a revascularization procedure. The clinical features, preoperative preparation and intraoperative management of giant intracavernous aneurysm is discussed.

Case Report

A 38 year old female presented with history of occasional frontal headache since 8 months which worsened since 2 and a ½ months, vertigo on and off since 8 months and diplopia since 2 weeks. There was no episode of sudden, severe headache. She had a history of hypertension since 8 years for which she was on treatment. Systemic examination was unremarkable. The relevant features of her neurological examination included a latent squint on cover test and a subtle ptosis of the left eye. The rest of her neurological examination was normal. MRI revealed a well-defined mass lesion in the left cavernous sinus with thrombus formation in various of organization. Cranial angiogram showed a left giant intracavernous internal carotid artery aneurysm with good collateral circulation through the circle of Willis from the opposite side. A balloon test occlusion was then performed which she clinically tolerated well for 20 minutes. She was posted for surgical trapping of the aneurysm under general anaesthesia. In the operation room after starting pulse oximentry and electrocardiographic monitoring, intrarterial blood pressure monitoring was instituted under local anaesthesia. Anaesthesia was induced with fentanyl, thiopentone sodium and the trachea intubated after administration of vecuronium bromide. Anaesthesia was maintained using oxygen, nitrous oxide (FiO2 0.35), sevoflurane and incremental doses of vecuronium. Intraoperative monitoring included end tidal CO2, central venous pressure (triple lumen catheter in the right subclavian vein), temperature, neuromuscular monitoring, temperature, arterial blood gases and urine output. The patient underwent surgical trapping of the internal carotid artery, the proximal site being above the common carotid artery and intracranially before the origin of the posterior communicating artery. An arterio-encephalo synangiosis was also performed with the posterior trunk of the left superficial temporal artery. The total duration of surgery was 5 hours and intraoperative blood loss was minimal. Cerebral protection measures undertaken included maintenance of normotension, normovolaemia and administration of barbiturates, mannitol and dexamethasone. She was extubated uneventfully at the end of surgery and shifted to the neurointensive care unit. Triple H therapy along with nimodipine was instituted postoperatively along with fentanyl infusion for pain relief. She developed paraesthesia of the right arm on the 3rd postoperative day which resolved after 18 hours. The rest of her postoperative course was uneventful and she was discharged on the 8th postoperative day.

Discussion

Aneurysms of the cavernous sinus may be asymptomatic at diagnosis (34%), while 57% of patients have associated signs or symptoms of mass effect including sixth nerve paresis, trigeminal pain or sensory loss, third nerve paresis, decreased vision or visual field cuts and fourth nerve paresis in that order of incidence.1 They are often giant in nature, but despite these large proportions, they generally have a benign natural history and untreated giant ICCAAns are associated with a lower mortality as compared with their supraclinoid counterparts. This is most likely because, these lesions are confined by dura and bone, making rupture more likely to lead to carotid-cavernous fistula than to subarachnoid haemorrhage. The latter generally occurs when a portion of the aneurysm extends through the dura of

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the cavernous sinus and in such a situation, definitive treatment may be necessary. In this patient the aneurysm acted as a compressing mass causing adjacent cranial nerve dysfunction, the so called cavernous syndrome, which could progress to complete ophthalmoplegia and blindness if left untreated.

The optimum goals for treating patients with ICCAAns are eliminating mass effect, obliterating the aneurysm and risk of future rupture, and preserving the parent vessel or, at least, the normal territorial flow. Definitive treatment is reserved for patients with subarachnoid haemorrhage, epistaxis, severe facial or orbital pain, evidence of radiographic enlargement and progressive ophthalmoplegia / visual loss.2

Given the relatively benign course of ICCAAns that are strictly intracavernous, and the small chance of subarachnoid haemorrhage if they extend through the dura, any treatment should have a low risk of complications. Definitive treatment could be either neurosurgical intervention or endovascular coiling. The best neurosurgical option is direct attack on the aneurysm. When this is not feasible either a trapping procedure or parent vessel occlusion/sacrifice (carotid ligation/clipping) with or without a high flow revascularization procedure is performed. A prerequisite for surgical occlusion is performing the balloon occlusion test (BOT). Perfect clinical tolerance with adequate filling in the arterial, parenchymatous and venous phases are indicators of adequate collateral circulation and one can proceed with surgical occlusion of the aneurysm. Neurological deficits during this procedure can be prevented by simultaneous CBF measurements or transcranial Doppler sonography of the middle cerebral artery. Patients who do not tolerate a BOT are candidates for high flow revascularization techniques 3

Direct management of these aneurysms, particularly if they are giant in nature, as in this patient, is fraught with difficulty and may even be undesirable in certain patients because of the intimate relationship that the internal carotid artery in the cavernous sinus has to the IIIrd and VIth cranial nerves. Also there are chances of potential bleeding from entering the confines of the cavernous sinus itself. The complications reported following such procedures include cerebral infarction, intraoperative haemorrhage, moderate hemiparesis and visual loss.4 The use of deep hypothermic circulatory arrest (DHCA) has significantly altered the prognosis of patients with large/giant aneurysms.5 The introduction of the closed chest approach, via femoral cannulation with the chest closed and without direct access to the heart has increased the use of this technique in neurosurgery.6 However, the outcome mirrors aneurysm location and presence or absence of subarachnoid haemorrhage (SAH), and in this context, DHCA is better suited in patients with aneurysms of the anterior circulation without SAH.7

Although the majority of giant aneurysms (62% in one series) are amenable to surgical clipping,4,8 including selective use of deep hypothermic circulatory arrest, the remainder requires some form of parent-vessel clipping or trapping with or without cerebral revascularization.9 Giant aneurysms located around the petrous and cavernous carotid artery are poorly suited for direct clipping because of their deep location and the hazards of direct approach as well as the significant risk of cranial nerve damage or ischaemic complications.10 Diaz et al, in their initial experience, approached intracavernous aneurysms by a gradual occlusion of the internal carotid artery (ICA) coupled with a cortical extracranial-intracranial (EC-IC) anastomosis. Later in their series, they resorted to a trapping procedure with ligation of the ICA in the neck and in the supraclinoid area and an immediate high flow anastomosis of the superficial temporal artery to the proximal middle carotid artery to avoid ischaemic complications.4 These authors reported a technical success rate of 80%. However, despite a high flow anastomosis, ischemic complications can occur, and they concluded that a direct approach to these aneurysms is the best initial alternative and the other alternatives should be considered only if a direct approach is not feasible.4 Despite this, carotid occlusion, with or without cerebral revascularization, has emerged as the treatment of choice for symptomatic or enlarging cavernous aneurysms. Drake et al, reported their series of cavernous carotid aneurysms treated with occlusion of the ICA which reflected a transition from surgical clipping with Selverstone clamps in the early part of the series towards balloon occlusion in more recent patients. 11

Can these patients tolerate sacrifice of the parent vessel ? In this case, the left internal carotid artery was sacrificed without any neurological deficit probably due to good cross circulation. Angiographic demonstration of cross flow with manual compression of the contralateral vessel is insufficient to answer this question and a balloon test occlusion (BOT) must be done as mentioned earlier. This involves inflating a balloon in the parent vessel with flouroscopic demonstration of stasis in the distal vessel and monitoring the patient's neurological status for at least 30 minutes to detect changes in vision, memory, speech and motor function. An unequivocal intolerance of BOT, that is, neurological deficit or evidence of hypoperfusion on transcranial Doppler or xenon enhanced CT, suggests that strong

consideration be given to an intracranial bypass before definitive surgical or endovascular treatment. 12 With the use of this protocol prior to parent vessel sacrifice, the percentage of ischaemic complications can be expected to decrease.

Several series report the results of patients with intracavernous aneurysms which also included giant aneurysms, who have undergone endovascular occlusion of the carotid artery.13-15 In a systematic review of published studies of endovascular treatment for management of ICCAns done from 1974 to 1999, it was found that both balloon occlusion and endovascular coiling are reasonably safe and result in occlusion of the aneurysm in the majority of cases.16 The incidence of permanent, predominantly ischaemic, complications was 5% which is in keeping with the risk of stroke after abrupt internal carotid artery sacrifice after BOT with clinical tolerance as sole criterion.17 The cause of ischemic complications has been attributed to graft thrombosis and post-occlusion transient ischaemic attacks from propagation of thrombus and embolic phenomena. Another major disadvantage of treating giant ICCAAns through the endovascular route is the risk of a fatal rupture during the procedure and the inability to control an intraprocedural haemorrhage. In this patient, endovascular treatment was also not considered feasible, not only because the aneurysm was giant in nature, but also because of the fact that she primarily presented with local mass effect and cranial nerve involvement. Endovascular coiling in this patient might have only succeeded in increasing the mass effect.

Recently, a novel excimer laser-assisted nonocclusive anastomosis (ELANA) technique has been reported which circumvents the need for temporary occlusion of cerebral vessels in patients with complex intracranial aneurysms (which includes intracavernous aneurysm) and skull base tumours who may require parent vessel occlusion and flow replacement by high-flow bypass surgery.17 The ELANA technique not only supports the neurosurgeon in creating difficult permanent intracranial anastomosis but also facilitates the neuroanesthetic management of patients undergoing cerebral high-flow revascularization procedures without the need for intensive brain-protective strategies during prolonged temporary occlusion.18

In this patient, a surgical trapping of the aneurysm was done by clamping the internal carotid artery in the neck and in the supraclinoid region. The advantage of this technique is that it permits precise placement of occluding clips while allowing direct visualization of important adjacent structures and perforating vessels that need to be spared. Another advantage of open surgical trapping is that it allows for immediate decompression of the aneurysmal sac, which may relieve mass effect on important neural structures. Despite that fact that she tolerated BOT well, revascularization procedure was done by performing an arterio- encephalo synangiosis using the superficial temporal artery with a view to prevent ischaemic neurological sequelae. The various high flow revascularization procedures recommended following internal carotid artery occlusion / surgical trapping include EC-IC bypass (superficial temporal artery to middle cerebral artery),19 and saphenous vein interposition grafts.20

Linskey et al, have advocated a multi-disciplinary treatment protocol for management of intracavernous aneurysms dividing patients into high, moderate and low risk groups based on pre-treatment evaluation of the risk of temporary or permanent ICA occlusion using a clinical balloon test occlusion coupled with ICA-occluded stable xenon/CT cerebral blood flow study. Based on this, these authors have suggested radiological procedures for most low risk patients and direct surgical treatment for most moderate and high risk patients. 21

Despite the fact that a preoperative BOT showed that collateral circulation was adequate, routine cerebral protective measures were undertaken at the time of carotid vessel clamping. This included maintenance of normotension, normovolaemia, administration of barbiturates, mannitol and dexamethasone. Electrophysiological monitoring plays a key role in monitoring neuronal well-being. Monitoring of EEG activity permits the use of a dose of barbiturates sufficient to induce burst suppression just before vessel occlusion and additional doses of barbiturates may be given as indicated by the EEG. The continued presence of a normal evoked potential pattern is also an indication that the brain is tolerating the proximal occlusion well, permitting the surgeon to proceed with the dissection. The IHAST2 study showed that mild intraoperative hypothermia does not improve neurologic outcome among good grade patients operated on for intracranial aneurysm.22,23 The results of the study have been questioned and the role of brain temperature seems to be of pivotal importance for brain protection in complex intracranial aneurysm surgery.24

In conclusion, giant intracavernous aneurysms present a spectrum of therapeutic challenges not only to the neurosurgeon but also the neuroanaesthesiologist. To attain complete exclusion of the ICCAAns from the circulation while preserving parent carotids, microsurgical or endovascular approaches may be considered. Surgical trapping of the aneurysm with cerebral revascularization, as was performed in this patient, offers a good outcome to these high risk patients with otherwise inaccessible, giant intracranial aneurysms. Intraoperative rupture and postoperative ischaemic complications are major risks and can be minimized by pre-operative BOT, high flow cerebral revascularization and intraoperative neuroprotective measures.

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Training Programme in Neuroanaesthesia
Suggestions of the Members of the Educational Committee of ISNACC

Do we need specialization?

Purpose

The anaesthetic requirements for different neurosurgical procedures differ from anaesthesia for general procedures. An understanding of the heamodynamic changes associated with neurosurgery and manipulation of blood pressure and ICP are essential ingredients of neuroanaesthetic practice. Neuroanaesthetists play a major role in the postoperative outcome of neurosurgical patients. With advances in monitoring during neurosurgery, the anaesthesia techniques have to be modified for ensuring functional integrity during surgery. Familiarity with EEG monitoring and neurophysiology have become an integral part of neuroanaesthesia. All this requires better understanding of neuroanatomy, neurophysiology , aspects of neurosurgery and neurocritical care and specialized anaesthetic management. In many countries fellowship programs in neuroanaesthesia have been going on for years and there are dedicated neuroanaesthesiologist spending a large part of their time devoted to this particular area.

The training that the anaesthesia postgraduates receive in neuroanaesthesia during the 3 year M.D. degree course is inadequate in most centres. They get 1 month posting in neuro OR. In many hospitals which do not have advanced neurosurgical department, the postgraduates are sent to other hospitals to observe rather than practice neuroanaesthesia.

Neuroanesthesiologists are no longer just clinicians. Despite the explosion of knowledge over the years about pathophysiology of brain disorders , brain function and monitoring, there is more to achieve regarding the outcome of patients who are affected by brain pathology such as head injury. Care of these patients will improve only if dedicated neuroanesthesiologists start thinking as neuroscientists not as clinicians.

Coming to the question of which course to conduct and the duration of the course we need to look at the demand for the course. There are two groups of people interested in training

1. Those who will spend 100% of their time doing only neuroanaesthesia in the future
2. Those who are likely to practice in a setting with many neurosurgical operations and neurocritical care or for those interested in working in academic institutions with neuroanaesthesia as a special interest.

For the former a 3 year D.M. course is most appropriate. But for others who also may be doing non-neuroanaesthesia, 3 years away from other specialties may not br appropriate. The reason why many people are reluctant to apply for a 3 year course is because they are not sure they want to spend all their time doing only one specialty, especially in the early years of their career. So in my opinion both courses should become available.

I am concentrating on the non- DM courses. As there is a 3 year DM course expecting students to do a 2 year fellowship course may be too much. I feel a 1 year course will give them enough exposure to get interested in the subject and then choose to specialize in the specialty. Therefore this course should plan to

Prepare anaesthesiologist in the practice of neuroanaesthesia with emphasis on State of the art (Newer) techniques of anaesthesia for neurosurgical procedures Understanding scientific and clinical principles of neuroanaesthesia and critical care Developing procedural skills in central venous cannulations, intraarterial cannulations, intrathecal lumbar drainage procedures and monitoring ICP Understanding electrophysiological monitoring Clinical or basic science research Decision making regarding donor organs in brain-dead patients

Who should conduct the course?

Fellowship/ Certificate course I feel can be run by departments who have variety of cases to be done ensuring the candidates have enough material to learn from. There should be at least one professor/ consultant with 10 year experience who is directly responsible for their training. One professor should be able to look after 2 candidates per year and the others being Assist and Associate Professors. It would be good to suggest the following requirements.

1. No of Operative Procedures need to be done in the centre of training: 500 – 1000 per year
2. Variety of procedures including

   Craniotomy in all positions
   Spinal procedures
   Pituitary
   Aneurysms

   Desirable

   Stereotactic
   Awake Craniotomy
   Epilepsy surgery
   Paediatric
   Neuroradiology

3. Skills that should be taught

   Intraarterial cannulations
   Central venous
   Fibreoptic intubations
   Intubating LMA
   ICP monitoring

4. No of ICU beds - At least ? 8 neuro ICU beds

   The period of training in the various areas

Neuro OT	- 7 months
Anaesthesia for Neuroradiology	- 1 month
Neurocritical care/ ICU	- 2 months
Accident and Emergency (casualty)	- 1 month
Neurology /EEG lab/Neurophysiology	- 1 month

Will be encouraged to do 1 audit/ 1 publish paper in a peer reviewed journal.

Initially clinical experience is the focus, research will also be encouraged. Trainees will gain experience with clinical training as well as teaching programmes. Certification will be on exit exam and internal assessment. They will be encouraged to attend the Emergency Trauma management course and a Research Methodology course during their training. They will be required to maintain a log book. There will be an examination at the end of the course and a certificate will be awarded taking into consideration the performance at the examination as well as an internal assessment.

Prof. Grace Korula

1. Is there any need to start DM/Certificate course Neuroanesthesia in India?	**Yes (DM must)**
2. If yes, please explain why and what is the reasons?	**1. Other departments have DM** **2. Better Knowledge** **3. Better Management**
3. What should be the structure of the Dept? I mean, a separate Dept. of Neuroanesthesia or independent unit in the gamut Anaesthesia Dept.	**1. It is on hospital setup**
4. How many faculties should ideally be there to run the course and what should be their cadre?	**1. For 1 student 1-faculty Above 14 years experience**
5. How many minimum OT should be there to run certificate course and how many to start the D.M. course?	**1. For 1 intake 1000 cases / yr No OT numbers**
6. What should be the composition of the Neuro ICU (how many beds? What are the facilities and what are the equipments?	**1. Minimum 6 beds** **2. All basic equipments**
7. Should we also consider the future prospects of those students who will complete the courses?	**1. If we can help, fine**
8. Any other points that you think is very important please mention.	**1. Regular teaching & training** **2. Visit to other centers**

These are my views to the best of my knowledge. It is flexible depending on the need of individual hospital.

Prof. R. C. Rathod

31.3.08

1. There is definitely need for such training and teaching.
2. To become a neuro physician one has to be a DM in Neurology, to become a neurosurgeon one has to be MCh (Neurosurgery) as specialised training /teaching is necessary. Moreover in MD (Anaesthesia) curriculum, we have very little training/ teaching related to Neuro anaesthesia and it is beyond doubt that many specialized techniques and monitoring are required for anaesthesia in Neurosurgical patients.
3. If the Institute has an independent Dept. Neuro anaesthesia, with all infrastructure including Library facility, internet facility, DM (Neuro anaesthesia) may be permitted.

   If the neuroanaesthesia is an unit in the gamut of Anaesthesia Dept. with limited resources, a one year certificate course may be granted.
4. Senior teachers not below rank of Associate Professor, of course with minimum one professor.
5. The number of OTs required are same for DM and Certificate Course. At least 5 OTs are required – (i) Neuro trauma, (ii) Non traumatic emergencies, (iii) Minimally invasive surgery and functional neurosurgery, (iv) 2 OTs for planned neurosurgery (vascular, tumours). For DM (Neuro anaesthesia), intervention neuro radiology suite is a must.
6. Ideally the Neuro ICU beds should be 15% of the total neuro medical /Neuro surgical beds excluding separate neuro trauma ICU.

   There should be separate medical neuro ICU and surgical neuro ICU and if possible paediatric neuro ICU.

   Each bed should have facilities for ventilation, O2 therapy, central suction, monitoring for haemodynamics (invasive/ non invasive), temperature, ICP, Jugular veinous oxymetry. The ICU should have facility for portable X-Ray, ECG, TCD, Lung function Unit, ABG, EEG, Evoke potential.
7. Future prospects of these students after completion of course are bright, because they are trained to impart safe neuro anaesthetic care and our country is now having and will also have more neuroscience centers, neuro trauma units where they will have job opportunities.

In my opinion, it is rather important to convince the authorities of Health Universities and the MCI authorities about the importance of such courses and need for such experts in total neurological care of our patients.

Prof. Bibhukalyani Das

1. Is there any need to start DM/Certificate or Fellowship Course in Neuroanaesthesia in India?

   Yes, there is a need for both the types of courses, at least for the time being. DM is necessary to build up academic and research environment which is a must for the growth of the specialty and Fellowship to provide practical training to those who are interested in practicing Neuroanaesthesia, but are reluctant to go through a three year course. Current MD degree in Anaesthesiology is unable to provide the requisite theoretical and practical training required for a comprehensive and up-to-date clinical service.

2. If yes, please explain why and what are the reasons?

   Answered above

3. What should be the structure of the Dept? A separate Dept. of Neuroanaesthesia or independent unit within a big Anaesthesia Dept.

   A separate department is desirable. Alternatively, there should be a a full time dedicated team of Neuroanaesthesiologists (minimum of three consultants). They should be spending not less than 75% of their time in Neuroanaesthesia.

4. How many faculty should ideally be there to run the course and what should be their cadre?

   At least three for a Fellowship course with 2-4 students per year and three faculty for one DM student / year.

5. How many minimum OTs should be there to run certificate course and how many to start the D.M. course? What should be number and nature of the case-load?

   A minimum of two OT's x 5 days a week for a Fellowship and four OT's x 5 days for DM course. The case load should consist of:

   1) Cranial
      a. Tumors: supra- and infratentorial
      b. Ptuitary
      c. Vascular
      d. Trauma
      e. Paediatric
      f. Endoscopy
   2) Spinal
      a. Tumors
      b. Trauma
      c. Spinal instrumentation

   Epilepsy surgery and surgery for movement disorders are preferable for centers training DM candidates.

6. What should be the composition of the Neuro ICU (how many beds? What are the mandatory facilities/services and the equipment?

   A minimum of 12 beds for both the types of courses.

   Facilities: Basic cardiorespiratory monitoring: ECG, NIBP, IBP, SPO2. Ventilators, Blood Gas

   Analysis, bronchscope

   Additional facilities for DM : ICP, TCD, EEG

7. Should we also consider the future prospects of those students who will complete the courses? What are the current prospects?

   Currently, we can expect only a few of the candidates to be occupied with full-time in Neuroanaesthesia work in academic institutions. It may be another 5-10 years before hospitals may employ full time Neuroanaesthesiologists.

   Fellowship candidates may be preferred by hospitals for Neurosurgical work . But since hospitals are unlikely to have enough work in Neurosciences, these candidates may have to work in other areas too. Particularly, they may be preferred for Orthopaedics and trauma

8. Any other points that you think are very important

   A nation-wide uniform course curriculum should be developed and endorsed by the ISNACC. A model currently being followed by Indian Society of Critical Care Medicine (ISCCM) in formulating, implementing and monitoring the educational activities may be adopted.

Prof. Uma Maheswara Rao

WRONG ADDRESS

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ISNACC 2009

X National Conference
Indian Society of Neuroanesthesiology and Critical Care

Venue : Thiruvananthapuram

29th January to 1st February 2009

Life Members	:	INR 10,000
Post Graduates	:	INR 8,000
Foreign Delegates	:	Euro 400
Accompanying persons	:	INR 10,000

Please send the Demand Draft in favour of ISNACC-2009 Payable at Trivandrum.
Registration form for the postgraduates to be attested by Head of Department

Important Dates

Last Date for submission of abstract1	:	5-11-2008
Last date for Registration	:	30-11-2008
Date of conference	:	29-01-2009 to 1-02-2009

For abstract submission form and guidelines please refer to the Download link of this website
You can send registration form and abstract either by post or submit them on line.

Invitation

Dear friends,

I feel extremely honored to extend you an invitation to participate in the 10th national conference of ISNACC (Indian Society of Neuroanesthesiology and Critical Care) to be held at Trivandrum, Kerala, India, from 29th January to 1st February 2009. Eminent National and International speakers are expected to participate in the conference.

Trivandrum, the capital city of Kerala is an ancient kingdom often referred as Ananthapuri in ancient Dravidian literature. While in Trivandrum you will enjoy equable climate all through the year by the side of Arabian Sea.

You will certainly cherish the hospitality offered at the venue glittered with backwater, boat ride, herbal Ayurvedic treatment, exotic sea food and natural scenic beauty.

I assure you on behalf of Organising committee a memorable scientific experience.

Regards

Dr R C Rathod

Chairman and Organizing Secretary

Dept. of Anaesthesiology , Sree Chitra Tirunal Institute for Medical Sciences and Technology
Thiruvananthapuram- 695011 Kerala, India
Phone: 91-471-2524643(O), ***Mobile:*** 09847208120, 09746459711, ***Fax:*** 91-471-2446433
Email: rcrathod@gmail.com, rcrathod@sctimst.ac.in

1st Asian Congress of Neuroanaesthesiology & Critical Care
Beijing, China
November 29-1st December, 2008

Abstract Submission Deadline: Sept. 1, 2008

All abstracts must be formatted according to the following:

1. Microsoft Word (.doc) files only.

2. The font should be Times New Roman 12-point.

3. Format: title, author's name (s) (first and middle initials and last name), affiliation, abstract. Underline the presenting
author's name.

We accept abstract by E-mail submission to csna2007@yahoo.com.cn.

1 Registration process

International conference attendees are recommended to use online registration system.

2 Registration fee

Registration fee is $500 (including the total conference documents, continuing education Credit certification, tea break, lunch and accommodation).

3 Contact

Add Tower B,9/F Thunis Development Building, No.11 Huixin East Steet Chao Yang District, Beijing ***Tel*** 86-10-64823033, ***Fax*** 86-10-64823023,
E-mail vip@medi-welcome.com.cn, jackie_lily@hotmail.com

May I request all our members who are interested to participate or attend the forthcoming 1st Annual Congress of the Asian Society of Neuroanaesthesia to be held at Beijing.
Please contact: dr.harihardash@gmail.com

Dr Hailong Jin, M.D.
Department of Anesthesiology
Beijing Tian Tan Hospital
No. 6 Tiantan Xili Chongwen District
Beijing 100050, China

TRAVEL GRANT

ISNACC will award Travel Grant to suitable candidates to either visit one of the premier Neuroanaesthesiology centres in India or to present one or more free papers in the ISNACC annual conference. A fixed sum of Rs. 10,000/- each will be awarded to 2 candidates who must fulfill the following criteria:

- Should be a life member of ISNACC.
- If the grant is for attending the annual conference, he or she must present a free paper as first author.
- Should provide a certificate attesting that he or she is a Junior Resident or Senior Resident.

Application along with documents supporting your candidature should reach the ISNACC Secretariat by 31 December 2008.

RESEARCH GRANT

ISNACC will award one research grant to a suitable candidate to carry out clinical research in the field of Neuroanaesthesia and critical care in India. A fixed sum of Rs. 10,000/- will be awarded to one candidate who must fulfill the following criteria:

- Candidate must be a life member of ISNACC
- Working certificate in Dept. of Neuroanaesthesia has to be submitted from the HOD.
- Ethics committee's approval is mandatory.
- Information pertaining to any other financial assistance for the project from other sources must be provided.
- Four copies of the research project, in the proper format should be submitted to the Secretariat on or before 31st December 2008.

NEWS ITEM

1. Dr Hemant Bhagat has joined as Assistant Professor, Dept. of Anaesthesiology at PGIMER, Chandigarh.
2. Dr Virender Jain has joined as Attending Consultant, Dept. of Anaesthesiology, Max Hospital.
3. May I request all our members who are interested to participate or attend the forthcoming 1st Annual Congress of the Asian Society of Neuroanaesthesia to be held at Beijing. Please contact: dr.harihardash@gmail.com

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