17th National Conference of Society of Anesthesiologists of Nepal (SANCON) 26th March, 2016

"Updates in Anesthesia, Critical Care & Pain Medicine"

Society of Anesthesiologists of Nepal
Kathmandu, Nepal
Email: nepalanesthesiologists@gmail.com
www.sannepal.org
17th National Conference of Society of Anesthesiologists of Nepal (SANCON)  
26th March, 2016  
"Updates in Anesthesia, Critical Care & Pain Medicine"  

SOUVENIR  

Society of Anesthesiologists of Nepal  
Kathmandu, Nepal  
Email: nepalanesthesiologists@gmail.com  
www.sannepal.org
It gives us immense pleasure to introduce the Souvenir of 17th National Conference of Society of Anesthesiologist of Nepal (SANCON) with the theme “Updates in Anesthesia, Critical Care and Pain Medicine.” We bring you scientific papers and case reports from different corners of the country to enhance and update our professional knowledge. We hope you will enjoy reading it as much as we enjoyed compiling it. Words cannot express our gratitude to all those who have contributed directly or indirectly to make this souvenir possible. Without their relentless effort, the publication of this souvenir would not have been possible. Despite all our efforts, there might be some errors, we beg to be excused for them. So let us enjoy and learn from the 17th National Conference of the Society of Anesthesiologist of Nepal (SANCON) and cherish its memories in the form of this souvenir.

Dr. Mallika Rayamajhi
Chairperson

*Members: Dr Pawan Kumar Hamal, Dr Pradip Tiwari, Dr Puspa Raj Poudel*

Prof. Resham Bahadur Rana  
President

Prof. Birendra B Singh  
Imm. Past President

Dr. Shanta Sapkota  
Vice President

Dr. Binita Acharya  
General Secretary

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Joint Secretary

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Treasurer

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Member

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Member

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Advisor

Prof. B M Shrestha  
Advisor

Prof. B D Jha  
Advisor

Prof. M N Marhatta  
Advisor

Dr. Gauri Shanker Adhikari  
Advisor
THE ORGANIZING COMMITTEE

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Organizing Vice Chairman
Dr. Shanta Sapkota

Organizing Secretary
Dr. Navindra Raj Bista

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Member
Dr. Kamal P Paneru

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Dr. Smriti Koirala

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Dr. Nabin Pokharel

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Member
Dr. Shailendra Sigdel

Member
Dr. Subash Chandra

Advisors

Advisor
Prof. B M Shrestha

Advisor
Dr. Shova Arjyal
It gives me immense pleasure to know that the Society of Anesthesiologists of Nepal is going to organize its 17th National Conference on 26th March, 2016 in Kathmandu with the theme “Updates in Anesthesia, Critical Care and Pain Medicine”.

The knowledge, skill, and technology in anesthesia is rapidly upgrading with a view to ensure peri-operative safe anesthesia, proper care for critical patients and adequate management of both acute and chronic pain. The service of anesthesiologist is not confined only in operation theatre these days but has extended in intensive care, pain management, palliative care, cardiopulmonary resuscitation. So the theme chosen for this conference seems very appropriate.

Interactions among the attending specialist from all over the country will enable to learn more both for the anesthesiologist and the resident towards present and future prospects of anesthesiology. I hope the conference will come up with intended result and will help to provide better service to the needy people. On behalf of SAARC-AA, I wish the grand success of this conference and thanks to society of anesthesiologist of Nepal for organizing this conference.

Prof. Birendra Bahadur Singh
President
SAARC Association of Anesthesiologists
First of all, I whole heartedly welcome all the scientists, experts and delegates throughout the country and abroad in our 17th National conference 2016. The Society of Anesthesiologists of Nepal (SAN) is going to organize 17th National Conference on 26th March, 2016 in Kathmandu Nepal. The theme “Updates in Anesthesia, Critical Care & Pain Medicine” is carefully selected for this conference simply because of the expertise required and practiced by anesthesiologists. Updates in knowledge and skills of anesthesia services is an ongoing process and are essential for all anesthesiologists to maintain higher quality of anesthesia and other services. We decided this theme appropriately to utilize the conference for updating in anesthesia knowledge and skills in different speciality and sub-specialty under anesthesiology through workshops, presentations of skilled, experienced and scientific experts / specialists from in and out of country. I hope this conference will provide opportunities to the experts to share their valuable expertise and gain benefits by all anesthesiologists and non-anesthesiologist doctors and all other participants.

Thanks,

Prof Dr Resham B Rana
President, SAN
Kathmandu, Nepal
It is a great pleasure for me to write the message for the SANCON 2016. Due to very short time period available to us & difficult situation in the country brought by earthquake as well as the embargo, we were not sure whether we can successfully arrange the conference this time. But immense effort paid by the all members of scientific committee and society, we are in this shape today. I want to extend great regards to all members of scientific committee for their valuable effort.

“Updates in Anesthesia, Critical Care & Pain Medicine” being a theme of the conference may bring us a lot of awareness on what we were in the past, how the milestones of developments evolved; similarly what is the present status of the anesthesiology which is struggling to develop the different subspecialties in the country and the future projection of development of anesthesiology and its subspecialties as science and services.

I believe this conference will bring together many experts and provide a solid platform to share knowledge, skills and technical advancements. I would like to thank all thematic speakers, guest speakers, chair persons, authors of papers, moderators, participants and those who are putting their efforts to make this conference a success.

Prof Jeju Nath Pokharel
Chairman Scientific Committee
SANCON 2016, Kathmandu, Nepal.
MESSAGE FROM ORGANIZING SECRETARY

It is an exquisite delight and great privilege to welcome all speakers, delegates, members and residents of the Anesthesiology fraternity to this prestigious event.

The managerial aspect of a conference is always a stressful adventure because of all the small and important issues that have to be planned and managed. Despite challenges and obstacles of national concern, we are able to organize the conference and assemble great minds and professionals from within and across the nation.

I would first like to thank all the participants for their gracious presence and sparing their valuable time for this congress. I would like to take the opportunity to thank life members of SAN for their cooperation.

My warm greetings go to the advisors, head of department, seniors and colleagues for their encouragement and support.

As far as the organizing committee is concerned, our acknowledgement goes to scientific committee who worked intensively since months to manage scientific program. I appreciate their great talent in putting scientific things in an artistic way.

I express my gratitude to committee chairpersons and members of SANCON who worked constantly behind the scene to manage with all financial aspects, registration process, reception of participants, publication of souvenir, event management and accommodation for delegates. I cannot thank everyone enough for their involvement and willingness to take on the completion of the task beyond their comfort zone.

I am thankful to all prolific national and international experts who have agreed to deliver scientific papers.

I wish this conference brings together the Anesthesiologist fraternity, and provides an excellent platform for networking.

On behalf of the organizing committee, I feel that this SANCON 2016 is a convergence of eminent personalities whose contribution will make it a grand success.

Dr Navindra Raj Bista
Organizing Secretary, SANCON 2016
Registration – 7:00 – 8:00 AM

Program overview

<table>
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<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>8:00-9:00</td>
<td>Inauguration ceremony</td>
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<tr>
<td>9:00-11:30</td>
<td>Thematic session</td>
</tr>
<tr>
<td>11:30-11:45</td>
<td>Tea break</td>
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<tr>
<td>11:45-1:15</td>
<td>Disaster management session</td>
</tr>
<tr>
<td>1:15-2:00</td>
<td>Lunch break</td>
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<tr>
<td>2:00-3:00</td>
<td>Lectures</td>
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<tr>
<td>3:00-3:15</td>
<td>Tea break</td>
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<tr>
<td>3:15-3:45</td>
<td>Panel discussions</td>
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<tr>
<td>3:45-4:45</td>
<td>Lectures</td>
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<tr>
<td>4:45 -5:15</td>
<td>Quiz</td>
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<tr>
<td>5:15-5:30</td>
<td>Closing ceremony and prize distributions</td>
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<tr>
<th>Hall A: Kumari</th>
<th>Hall B: Ghar-E-Kabab</th>
<th>Out side Kumari Hall</th>
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<tbody>
<tr>
<td>2:00-3:00</td>
<td>Lectures</td>
<td>Pro con debate</td>
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<tr>
<td>3:00-3:15</td>
<td>Tea break</td>
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<tr>
<td>3:15-4:45</td>
<td>Panel discussions</td>
<td>Resident sessions</td>
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<tr>
<td>2:00-4:15</td>
<td>Poster Session</td>
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Thematic session

Chairperson: Prof R B Rana/Prof R Amatya/Prof B M Shrestha
Hall Coordinator: Dr Pooja Thapa/Dr Aashish Shah

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<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>Cardiopulmonary Resuscitation Updates</td>
<td>Prof Jeju Nath Pokharel</td>
<td>SGNHC</td>
<td>9:00-9:30</td>
</tr>
<tr>
<td>2</td>
<td>Anaesthesia for geriatric patients: an update</td>
<td>Prof Balkrishna Bhattarai</td>
<td>BPKIHS</td>
<td>9:30-10:00</td>
</tr>
<tr>
<td>3</td>
<td>Updates in interventional pain management: Focus on chronic low back pain</td>
<td>Dr Anil Shrestha</td>
<td>TUTH</td>
<td>10:00-10:30</td>
</tr>
<tr>
<td>4</td>
<td>Updates in Sepsis</td>
<td>Dr Subhash P Acharya</td>
<td>TUTH</td>
<td>10:30-11:00</td>
</tr>
<tr>
<td>5</td>
<td>Integrating simulation into competency-based Anesthesiology residency training</td>
<td>Dr Michelle Chiu</td>
<td>University of Ottawa</td>
<td>11:00-11:30</td>
</tr>
</tbody>
</table>

Tea break 11:30-11:45
Disaster management session
Chairperson: Prof B D Jha/ Prof M N Marhatta/ Prof Nagendra KC
Hall Coordinator: Dr Pooja Thapa/Dr Aashish Shah

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<tr>
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<th>Time</th>
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<tbody>
<tr>
<td>1</td>
<td>Does preparation help in managing disaster better? A case study of a referral hospital</td>
<td>Prof Pradeep Vaidya</td>
<td>TUTH</td>
<td>11:45-12:15</td>
</tr>
<tr>
<td>2</td>
<td>Anesthetic management of trauma patients</td>
<td>Dr Prabhat Ranjan Baral</td>
<td>B &amp; B Hospital</td>
<td>12:15-12:45</td>
</tr>
<tr>
<td>3</td>
<td>Mass critical care during disaster</td>
<td>Dr Diptesh Aryal</td>
<td>TUTH</td>
<td>12:45-1:15</td>
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Lunch Break 1:15-2:00

Hall A
Lecture
Chairperson: Prof G R Bajracharya/ Prof N R Sharma/ Prof J N Pokharel
Hall Coordinator: Dr Mona Rajbhandari/Dr Kripa Pradhan

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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Tracheotomy in ICU patients. What’s the right time? A systematic review</td>
<td>Prof Brahma Dev Jha</td>
<td>PHECT Nepal</td>
<td>2:00-2:20</td>
</tr>
<tr>
<td>2</td>
<td>Education in critical care medicine in Nepal: vision and initiation</td>
<td>Prof Moda Nath Marhatta</td>
<td>TUTH</td>
<td>2:20-2:40</td>
</tr>
<tr>
<td>3</td>
<td>Perioperative fluid management in paediatric patients</td>
<td>Dr Shanta Sapkota</td>
<td>Kanti Children hospital</td>
<td>2:40-3:00</td>
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Tea Break 3:00 – 3:15

Panel Discussion
Chairperson: Dr Mona Rajbhandari/Dr Kripa Pradhan

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<tr>
<th>SN</th>
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<th>Coordinator</th>
<th>Experts</th>
<th>Time</th>
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</table>
| 1  | What is the best method to predict fluid responsiveness in hemodynamically unstable patients? | Dr Ravi Ram Shrestha | Prof BD Jha
Prof SK Maharjan
Dr Tamanna Bajracharya | 3:15-3:45 |
Lecture
Chairperson: Prof S K Maharjan/ Prof Amir B Shrestha/ Dr Ravi Ram Shrestha
Hall Coordinator: Dr Mona Rajbhandari/Dr Kripa Pradhan

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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Updates in cancer pain</td>
<td>Dr Dipesh Dhital</td>
<td>Bhaktapur Cancer Hospital</td>
<td>3:45-4:05</td>
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<tr>
<td>2</td>
<td>Fracture tracheal cartilage due to malignant lung mass leading to respiratory distress - perioperative anesthetic management</td>
<td>Dr Nishkarsh Gupta</td>
<td>AIIMS, New Delhi</td>
<td>4:05-4:25</td>
</tr>
<tr>
<td>3</td>
<td>Medication errors in anesthesia</td>
<td>Dr Upendra K Regmi</td>
<td>Nepalgunj Medical College</td>
<td>4:25-4:45</td>
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<tr>
<th>Topic</th>
<th>Moderator</th>
<th>Time</th>
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<tbody>
<tr>
<td>History of Anesthesia</td>
<td>Dr Udaya Bajracharya</td>
<td>4:45-5:15</td>
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Hall B
Pro Con Debate
Chairperson: Prof B B Singh/ Prof M B Chand/ Dr Murari Upreti
Hall Coordinator: Dr Bidur Kumar Dhungel/Dr Kiran KC

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<tr>
<th>SN</th>
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<th>Speaker</th>
<th>Institute</th>
<th>Time</th>
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</table>
| 1  | Mannitol Vs Hypertonic Saline for management of intracranial hypertension | Pro: Gentle Sunder Shrestha  
|    |                                                                      | Con: Manzil Shrestha     | TUTH Neuro Cardio multidisciplinary hospital, Biratnagar | 2:30-3:00  |
| 2  | Cricoid pressure in RSI                                              | Pro: Dr Ravi Ram Shrestha | NAMS BPKIHS                            | 2:00-2:30  |
|    |                                                                      | Con: Krishna Pokharel    |                                        |            |

Tea break 3:00-3:15

Residents Session
Chairperson: Prof B Shah/ Dr Uday Bajracharya / Dr Renu Gurung
Hall Coordinator: Dr Bidur Kumar Dhungel/Dr Kiran KC

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<tbody>
<tr>
<td>1</td>
<td>Prediction of difficult intubation through modified mallampatti and thyromental distance</td>
<td>Dr Santosh Dhakal</td>
<td>Kathmandu Medical College</td>
<td>3:20-3:30</td>
</tr>
<tr>
<td>2</td>
<td>Phenylephrine for blood pressure control in LSCS: prophylactic versus therapeutic</td>
<td>Dr Anand Thakur</td>
<td>IOM, TUTH</td>
<td>3:30-3:40</td>
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<td>3</td>
<td>Ketamine, Fentanyl, normal saline pretreatment: Laryngeal mask airway</td>
<td>Dr Sushil Pakhrin Tamang</td>
<td>IOM, TUTH</td>
<td>3:40-3:50</td>
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<td>insertion conditions, hemodynamics for Propofol induction in children</td>
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<td>4</td>
<td>Dexmedetomidine on perioperative haemodynamics in patients undergoing</td>
<td>Dr Rejin Kumar Udaya</td>
<td>IOM, TUTH</td>
<td>3:50-4:00</td>
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<td>laparoscopic cholecystectomy</td>
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<td>5</td>
<td>Comparative study of intrathecal isobaric Ropivacaine versus hyperbaric</td>
<td>Dr Parbesh Kumar Gyawali</td>
<td>NAMS</td>
<td>4:00-4:10</td>
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<td></td>
<td>Bupivacaine for cesarean section</td>
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<tr>
<td>6</td>
<td>Ketamine and Lidocaine as pretreatment reduce Propofol induced pain</td>
<td>Dr Dusooma A Razzag</td>
<td>NAMS</td>
<td>4:10-4:20</td>
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<tr>
<td>7</td>
<td>Study on effect of Halothane and Sevoflurane for ambulatory surgery in</td>
<td>Dr Zulaikha Mae</td>
<td>NAMS</td>
<td>4:20-4:30</td>
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<td></td>
<td>children</td>
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<td>8</td>
<td>Comparison of outcome predictions by full outline of unresponsiveness</td>
<td>Dr Swairita Kafle</td>
<td>NAMS</td>
<td>4:30-4:40</td>
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<td>score and Glasgow Coma Scale</td>
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**Poster Presentation**

**Group A**

Chairperson: Dr Prabhat R Baral/Dr Bishwas Pradhan  
Coordinator: Dr Pawan Kumar Raya/Dr Archana Yadav

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</thead>
<tbody>
<tr>
<td>1</td>
<td>Maternal collapse during cesarean section</td>
<td>Dr Ritu Pradhan</td>
<td>Paropkar Maternity and Women’s Hospital</td>
<td>2:00-2:15</td>
</tr>
<tr>
<td>2</td>
<td>Anticoagulant management after mitral valve replacement for laparoscopic</td>
<td>Dr Rosy Joshi</td>
<td>Kathmandu Medical College</td>
<td>2:15-2:30</td>
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<td></td>
<td>cholecystectomy</td>
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<tr>
<td>3</td>
<td>Perineural interscalene catheter insertion for upper limb amputation</td>
<td>Dr Shikshya Khatiwoda</td>
<td>Kathmandu Medical College</td>
<td>2:30-2:45</td>
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### Group B

**Chairperson:** Dr Ashish Ghimire / Dr Renu Gurung  
**Coordinator:** Dr Anuj Jung Karki/Dr Achyut Sharma

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<tr>
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<tbody>
<tr>
<td>4</td>
<td>Mallampati class zero – a successfully managed case with difficult intubation</td>
<td>Dr Sangeeta Shrestha</td>
<td>Paropkar Maternity and Women’s Hospital</td>
<td>2:00-2:15</td>
</tr>
<tr>
<td>5</td>
<td>Post-operative complication in chronic kidney disease</td>
<td>Dr Rosi Pradhan</td>
<td>Kathmandu Medical College</td>
<td>2:15-2:30</td>
</tr>
<tr>
<td>6</td>
<td>Paracetamol and Lidocaine pre-treatment for alleviation of Propofol induced pain</td>
<td>Dr B Subedi</td>
<td>Kathmandu Medical college</td>
<td>2:30-2:45</td>
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### Group C

**Chairperson:** Dr Anil Shrestha/Dr Subhash Acharya  
**Coordinator:** Dr Nabin Pokharel/Dr Milan Pokharel

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<tbody>
<tr>
<td>7</td>
<td>Comparison of Ropivacaine and Bupivacaine in ultrasound guided supraclavicular block</td>
<td>Dr Puja Sharma</td>
<td>Kathmandu Medical college</td>
<td>2:00-2:15</td>
</tr>
<tr>
<td>8</td>
<td>Clinical effect of oral clonidine in patients undergoing laparoscopic cholecystectomy</td>
<td>Dr Robin Baidya</td>
<td>NAMS</td>
<td>2:15-2:30</td>
</tr>
<tr>
<td>9</td>
<td>Analgesic effect of caudal bupivacaine with or without clonidine in pediatric population</td>
<td>Dr Sharad Khakurel</td>
<td>NAMS</td>
<td>2:30-2:45</td>
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### Group D

**Chairperson:** Dr Krishna Pokharel/ Dr Shanta Sapkota  
**Coordinator:** Dr Pooja Thapa/Dr Aashish Shah

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<tbody>
<tr>
<td>10</td>
<td>Anesthetic management of cesarean section complicated by severe mitral stenosis</td>
<td>Dr Trishant Limbu</td>
<td>IOM, TUTH</td>
<td>3:15-3:30</td>
</tr>
<tr>
<td>11</td>
<td>Dexmedetomidine and magnesium sulphate as anaesthetic adjuncts for pheochromocytoma resection</td>
<td>Dr Sachit Sharma Rupakhetee</td>
<td>IOM, TUTH</td>
<td>3:30-3:45</td>
</tr>
<tr>
<td>12</td>
<td>Distorted laryngeal anatomy discovered during intubation after anesthetic induction in a case of xanthoma disseminatum</td>
<td>Dr Shirish Shakti Maskey</td>
<td>IOM, TUTH</td>
<td>3:45-4:00</td>
</tr>
<tr>
<td>13</td>
<td>Myocardial infarction after electroconvulsive therapy</td>
<td>Dr Kriti Devkota</td>
<td>IOM, TUTH</td>
<td>4:00-4:15</td>
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Group E
Chairperson: Dr. Gopendra Deo/ Dr. Ashish Subedi
Coordinator: Dr. Hem Raj Joshi/ Dr. Rajan Shakya

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<th>SN</th>
<th>Topic</th>
<th>Speaker</th>
<th>Institute</th>
<th>Time</th>
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<tbody>
<tr>
<td>14</td>
<td>Analgesic effect of Dexmedetomidine as an adjuvant to hyperbaric Bupivacaine in spinal anaesthesia</td>
<td>Dr Pradip Koirala</td>
<td>NAMS</td>
<td>3:15-3:30</td>
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<tr>
<td>15</td>
<td>Hemodynamic response to use of various airway devices: A comparative study</td>
<td>Dr Chhanda Budathoki</td>
<td>NAMS</td>
<td>3:30-3:45</td>
</tr>
<tr>
<td>16</td>
<td>A Comparative study between supraclavicular and infraclavicular subclavian vein catheterization</td>
<td>Dr Harmeet Gulati</td>
<td>IOM, TUTH</td>
<td>3:45-4:00</td>
</tr>
<tr>
<td>17</td>
<td>Anesthetic management of a patient with Xeroderma Pigmentosa</td>
<td>Dr Santosh Acharya</td>
<td>IOM, TUTH</td>
<td>4:00-4:15</td>
</tr>
</tbody>
</table>

6:00 PM onwards Gala Dinner
Venue: Hotel De L’Annapurna, Durbar Marg, Kathmandu
“All registered Delegates, Guests, Speakers, Participants and Chairpersons are Welcome.”
### Acute Care Ultrasound Workshop

**Post SANCON 2016**  
March 27th, 2016

*Endorsed by Nepalese Society of Critical Care Medicine (NSCCM)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:30 – 9:00</td>
<td>Registration and Tea</td>
<td>Dr. Megha Koirala, Dr. Bindu L. Shah</td>
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<tr>
<td>9:00 – 9:05</td>
<td>Welcome speech</td>
<td>Prof. M N Marhatta</td>
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<tr>
<td>9:05 – 9:10</td>
<td>Speech by chief guest</td>
<td>Prof. R B Rana (SAN President)</td>
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<tr>
<td>9:10 – 9:15</td>
<td>Introduction to program</td>
<td>Dr. R D Joshi (NSCCM President)</td>
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<tr>
<td>9:15 – 9:30</td>
<td>Breakfast</td>
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<tr>
<td>9:30 – 9:40</td>
<td>Acute Care Ultrasound Concept</td>
<td>Dr. Subhash P. Acharya</td>
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<tr>
<td>9:40 – 10:00</td>
<td>Physics of Ultrasound</td>
<td>Prof. Dr. Benu Lohani</td>
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<tr>
<td>10:00 - 10:20</td>
<td>Knobology</td>
<td>Dr. Sharma Poudel</td>
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<tr>
<td>10:20 – 10:40</td>
<td>Vascular Ultrasound</td>
<td>Dr. Shailendra Sigdel</td>
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<tr>
<td>10:40 – 11:00</td>
<td>FAST &amp; E-FAST</td>
<td>Dr. Bashu Dev Parajuli</td>
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<tr>
<td>11:00 – 11:20</td>
<td>Lung Ultrasound</td>
<td>Dr. Navindra Bista</td>
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<td>11:20 – 11:40</td>
<td>Cardiac Ultrasound</td>
<td>Dr. Pramesh S Shrestha</td>
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<tr>
<td>11:40 – 12:00</td>
<td>Neurologic Ultrasound</td>
<td>Dr. Bigen M Shakya</td>
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<tr>
<td>12:00 – 12:20</td>
<td>Ultrasound during CPR</td>
<td>Dr. Diptesh Aryal</td>
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<tr>
<td>12:20 – 12:45</td>
<td>RUSH Protocol (getting it all together)</td>
<td>Dr. Gentle S Shrestha</td>
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<tr>
<td>12:45 – 1:30</td>
<td>Lunch</td>
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<td>1:30 – 4:30</td>
<td>Skill Station</td>
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<tr>
<th>Station A</th>
<th>Station B</th>
<th>Station C</th>
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<tbody>
<tr>
<td>(Dr Pramesh; Bigen; Navindra; Bindu)</td>
<td>(Dr. Subhash; Shailendra; Bashu)</td>
<td>(Dr. Gentle; Diptesh; Megha)</td>
</tr>
<tr>
<td>Cardiac</td>
<td>FAST &amp; eFAST; Lung</td>
<td>RUSH Protocol</td>
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<tr>
<td>Neuro</td>
<td>Vascular</td>
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<tr>
<td>4:30 – 4:45</td>
<td>Post test &amp; Feedback</td>
<td>Dr. Megha Koirala</td>
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<tr>
<td>4:45 – 4:55</td>
<td>Certificate distribution</td>
<td>Prof. R B Rana</td>
</tr>
<tr>
<td>4:55 – 5:00</td>
<td>Closing remarks and vote of thanks</td>
<td>Dr. Gentle S Shrestha</td>
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</tbody>
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### List of Participants of Acute Care Ultrasound Workshop

<table>
<thead>
<tr>
<th>SN.</th>
<th>Name</th>
<th>Institution</th>
<th>Designation</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Anand Thakur</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Anuj Jung Karki</td>
<td>NAMS</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Chhanda Bahadur Budathoki</td>
<td>NAMS</td>
<td>Resident</td>
</tr>
<tr>
<td>4</td>
<td>Dr. Devendra Maharjan</td>
<td>Model Hospital</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>5</td>
<td>Dr. Dusooma Abdul Razzag</td>
<td>NAMS</td>
<td>Resident</td>
</tr>
<tr>
<td>6</td>
<td>Dr. Harmeet Gulati</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>7</td>
<td>Dr. Krishna Bhattarai</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>8</td>
<td>Dr. Laxmi Pathak</td>
<td>UCMS</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>9</td>
<td>Dr. Parbesh Kumar Gyawali</td>
<td>NAMS</td>
<td>Resident</td>
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<tr>
<td>10</td>
<td>Dr. Pawan Kumar Raya</td>
<td>Police Hospital</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>11</td>
<td>Dr. Pradip Koirala</td>
<td>NAMS</td>
<td>Resident</td>
</tr>
<tr>
<td>12</td>
<td>Dr. Pradeep Adhikari</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>13</td>
<td>Dr. Pragya Acharya</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>14</td>
<td>Dr. Prakash Maden Limbu</td>
<td>BPKIHS</td>
<td>Resident</td>
</tr>
<tr>
<td>15</td>
<td>Dr. Rejin Kumar Udaya</td>
<td>TUTH</td>
<td>Resident</td>
</tr>
<tr>
<td>16</td>
<td>Dr. Rabin Baidya</td>
<td>NAMS</td>
<td>Resident</td>
</tr>
<tr>
<td>17</td>
<td>Dr. Sadeep Joshi</td>
<td>Neuro Hospital</td>
<td>Anesthesiologist</td>
</tr>
<tr>
<td>18</td>
<td>Dr. Sharad Khakurel</td>
<td>NAMS</td>
<td>Resident</td>
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<tr>
<td>19</td>
<td>Dr. Smriti Koirala</td>
<td>KIST</td>
<td>Anesthesiologist</td>
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<tr>
<td>20</td>
<td>Dr. Suraj Lamicghane</td>
<td>Grande Hospital</td>
<td>Anesthesiologist</td>
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<tr>
<td>21</td>
<td>Dr. Suraj Vishwakarma</td>
<td>BPKIHS</td>
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<td>22</td>
<td>Dr. Swairita Kafle</td>
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<td>23</td>
<td>Dr. Trishant Limbu</td>
<td>TUTH</td>
<td>Resident</td>
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<tr>
<td>24</td>
<td>Dr. Zulaikha Mae</td>
<td>NAMS</td>
<td>Resident</td>
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List of Instructors and co-instructors for Acute Care Ultrasound Workshop (post SANCON 2016)

<table>
<thead>
<tr>
<th>Instructors:</th>
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<tbody>
<tr>
<td>Dr. Gentle S Shrestha</td>
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<tr>
<td>Prof. Dr. Benu Lohani</td>
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<tr>
<td>Dr. Sharma Poudel</td>
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<tr>
<td>Dr. Subhash P Acharya</td>
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<tbody>
<tr>
<td>Dr. Megha Koirala</td>
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Cardiopulmonary resuscitation updates

Jeju Nath Pokharel
Prof & Senior Consultant cardiac anesthesiologist
Shahid Gangalal National heart centre, Bansbari.

ABSTRACT

Cardiopulmonary resuscitation is an important professional act which can save the life of the person who dies suddenly. Such deaths may occur most of the time due to cardiac cause in adult population and less commonly in children where the common cause may be respiratory or hypoxemia.

About 85% of the sudden cardiac deaths are due to cardiac origin and followed by fibrillation of the heart. If they are unattended, they die immediately and irreversible brain death occurs within 5 – 10 minutes. If such events are witnessed and the bystander starts cardiopulmonary resuscitation immediately with the use of defibrillator the outcome of the survival is encouraging. In developed countries there are systems and infrastructures in public places like airport, bus parks, train stations, shopping malls etc where automated defibrillators, resuscitation medical team with equipments drugs and ambulance are available which can save the lives before cortical death occurs. In a country like ours we lack infrastructures and manpower to address such important and crucial situation. We should try our best to disseminate awareness and practice countrywide.

The AHA updates and EU resuscitation updates 2015 highlights will be tried to discuss.

Keywords:
Cardiopulmonary resuscitation; sudden cardiac death
Anaesthesia for geriatric patients: an update

Balkrishna Bhattarai
Department of Anaesthesiology and Critical Care,
BP Koirala Institute of Health Sciences, Dharan, Nepal

ABSTRACT

Elderly population is increasing all around the world including Nepal. Elderly population with great heterogeneity can pose several specific challenges to the treating physicians including anaesthesiologists. Ageing is a complex process with multiple influencing factors. It is true that human age is extremely individual. The success in the care of the older people lies in the ability to prevent functional decline in them. Various factors that can have implications in anaesthetic and perioperative care will be discussed in the presentation.

Keywords:
Anaesthesia; geriatric population; perioperative management
**Updates in interventional pain management:**  
*Focus on chronic low back pain*

Dr Anil Shrestha  
*Associate professor*  
*Department of Anaesthesiology, Tribhuvan University Teaching Hospital*  
maheshsigdel@hotmail.com

**ABSTRACT**

Low back pain is one of the most common causes of visit to pain physician. Different modalities are available for the management of low back pain. Though controversies exist, interventional modalities for low back pain are highly effective when appropriately selected and done. Proper diagnosis is required for appropriate intervention to get optimal benefit. Failure of interventions for low back pain may be due to poor patient selection, poor patience compliance or poorly performed interventions.

There are several pain generators for low back pain. Intervertebral disc, facets, sacroiliac joint, spinal nerves are the major pain generators, however vertebral bodies, ligaments and muscles also contribute significantly for chronic pain. Interventional techniques include trigger pinto injections, epidural steroid injections, intra-articular facet joint injections, medial branch block with local anaesthetics, radiofrequency ablation of medial branches, sacroiliac joint injection, thermal radiofrequency ablation, cooled radiofrequency ablation, discography, disc decompression, IDET, intrathecal infusion pumps, spinal cord stimulation and other neuromodulatory techniques.

Different modalities of interventional pain management work for different types of pain. Success and failure of management may depend on the procedure chosen. Several studies have shown good evidences, fair evidences or limited evidences for different procedures for different pain conditions. Available evidences show a wide degree of variance in practice of interventional pain management. There has been little consensus either within or between specialities on appropriate uses of interventional techniques. Despite wide variations in practice the management should be focused on improving quality of care, treatment outcomes, effectiveness and improving the cost benefit ratio.

**Keywords:**

Interventions; low back pain; pain management
Updates in sepsis

Dr Subhash P Acharya
Consultant Intensivist, TU Teaching Hospital ICU
Associate Professor in Anesthesiology, Institute of Medicine, Tribhuvan University

ABSTRACT

After the ACCP definition of sepsis in 2004, various guidelines has been formulated to manage the most common cause of death in ICUs all across the globe. Surviving Sepsis Campaign first formulated in 2008 was modified in 20012 and now in 2015. The definition of sepsis has also varied and has changed with time. In 2004, sepsis was know as SIRS with source of infection and now has been highlighted with the new Sepsis Definition published recently. This presentation will focus on the various aspects of diagnosis and management of sepsis till date.

Keywords:
Guidelines; sepsis
Integrating simulation into competency-based Anesthesiology residency training

Michelle Chiu, MD FRCPC
Simulation Director & Assistant Professor, Department of Anesthesiology
Co-director, Anesthesia Fellowship in Simulation and Medical Education
The Ottawa Hospital, University of Ottawa
Simulation Educator, RCPSC

ABSTRACT
Simulation is a form of experiential learning involving the replication of real-world clinical conditions to allow learners to practice skills and behaviors without compromising the safety or quality of patient care. Competency-based education is an outcomes-based approach to the design, implementation, assessment, and evaluation of a medical education program using an organizing framework of competencies. This presentation will explore the role of simulation within the context of competency-based Anesthesiology residency training.

Keywords:
Anesthesia; residency program; simulation
Disaster Articles
Does preparation help in managing disaster better?
A case study of a referral hospital

Prof Pradeep Vaidya
Chairman, TUTH Disaster committee,
Developer and coordinator, Hospital Preparedness for Emergencies

ABSTRACT

Training and preparation is always difficult, especially for something one does not know when you may need to use it. Disaster risk training is very difficult in hospitals as it is not of high priority in anybody’s list. Unfortunately, we had a major earthquake and we were able to test some of what we trained for and prepared for in our hospital.

Something that helped was, training to hospital staffs, medical students, logistic preparation, surge capacity management, evacuations, and incident command system.

The results were that there was good triage and treatment started early, essential services were managed inside hospitals, no gory pictures in social media, treatment managed by Nepalese doctors, pre-hospital system and good Incident command system, etc.

In conclusion, training and preparation for disaster risk management can help hospitals work well during disaster saving many lives.

Keywords:
Disaster; preparation; training
ABSTRACT

Trauma is one of the leading causes of mortality and disabilities all over the world. Although the causes of the trauma in the western world and in our part of the world are different, challenges to the anesthesiologist are the same. The victims age group is almost the same that is 1 to 40 years of age. Globally WHO projects a 40% increase in global death caused by injury between 2002 to 2030.

New concepts of trauma management are gradually changing all over the world. This itself and because of the burden of increasing complex injuries, anesthesiology practitioners will be challenged in the management of these cases.

Patient with multiple injuries like polytrauma, may come to the ER, some time with quick, very little or no preoperative evaluations and preparations. The management strategies in these cases is the most challenging thing to do. They may differ from those for patients without trauma. Hemorrhagic shock, gas exchange abnormalities, hemodynamic instability, coagulation derangements and preexisting medical conditions are common. The use of damage control resuscitation, early factors replacement and understanding the surgical priorities (damage control surgery) in trauma will help in better outcome.

Hope this presentation will give us a little over view in trauma managements from anesthesiologists prospective.

Keywords:
Hemodynamic instability; trauma managements
ABSTRACT

Natural disasters can cause a sudden surge in the number of critically ill patients as evident in the recent Gorkha earthquake. Even for the best-prepared healthcare system the impact of mass disasters on critical care services is substantial since they are usually not anticipated. The common problems include overwhelming number of patients, shortages of critical care resources and difficulties in rationing of critical care services. The appropriate and timely delivery of critical care services can improve patient outcomes by proper rationing the services to the needs. The provision of task force for mass critical care can help develop a system-wide approach of matching critical care resources to critical care needs during disasters, utilizing the principles of crisis standards of care and surge capacity continuum. Besides, modifications of critical care to provide limited but high-yield services and improvisations of locally available resources can be a fundamental component of mass critical care delivery system. Finally, in a resource-limited setting the development of simple triage tools, protocols, and care guidelines modified to resource limitations that can be used by health workers with limited clinical backgrounds will be immensely useful.

Keywords:
Critical Care; disasters; health resources
Lecture

Articles
Tracheotomy in ICU patients. What’s the right time?
A systematic review

Prof B D Jha
PHECT Nepal

ABSTRACT

Timing of tracheostomy has always been a topic of debate among the clinician. Though tracheotomy has a number of advantages in patients requiring prolonged mechanical ventilation including improved lung mechanics, easier oral hygiene, diminished nociceptive stimuli on the larynx or trachea, decreased need for sedatives, enhanced communication. Not only that that the head and neck are free of equipment. Tracheotomy, however, also has adverse effects, including procedure-related complications and later cosmetic concerns.

Because of the relatively complex procedure, tracheotomy was in the past was reserved for patients who had been intubated for a long time. However, technological improvements, including simplification and decreased invasiveness of the procedure, have encouraged some to consider a more liberal use of tracheotomy. Some earlier studies in ICU patients suggested that early tracheotomy was associated with better outcomes than late tracheotomy. The most recent systematic reviews of RCTs comparing early and late tracheotomy will be discussed.

Keywords:

Intensive care; timing; tracheotomy
**ABSTRACT**

**Background**

Health resources and facilities in Nepal are quite insufficient for its 30 million people. Critical care medicine is a new entity for Nepal and is in its infancy. The first Intensive care unit (ICU) was established in 1970 in Bir Hospital Kathmandu followed by 2nd ICU in the Tribhuvan University Teaching Hospital in 1984 again in the Capital city, Kathmandu. Medical education as graduation program, MBBS course was first started in 1978 and the post-graduation in 1982 both in the Institute of Medicine (IOM). With the increasing number of private health institutions and medical collages the production of doctors has reached 2000 per year in Nepal. Currently more than 15000 doctors are registered in Nepal medical council. However there are very few doctors to take care of vulnerable, critically ill, sickest patient in lack of trained human resources in the field of critical care medicine. There is no formal certified critical care training for nurses either except 3 month training conducted twice a year by In-service nursing training unit at TU teaching hospital for last few years. There are about 90 units of ICUs with about 500 beds in Nepal. Majority of them are general and open ICUs. The closed and specialized ICUs are gradually coming up. Almost 70% ICU beds are located in the capital city Kathmandu alone. Vast majority of people outside Kathmandu has very few beds and they are bound to rush to Kathmandu travelling long and bad road when they are critically ill. This is terrible. Many lose their life on the way. Our current critical care bed requirement is minimum 1800 to serve 30 million.

The demand of intensive care service is increasing due to increased health awareness of people and the increased burden of critically ill patients due to infectious as well as increased trauma and non-communicable diseases like diabetes, hypertension, malignancy and natural disaster.

Due to development of science and technology and with innovation of new drugs the capacity of critical care medicine is increasing worldwide. With this, critical care medicine has been very important branch of medicine and its demand is increasing tremendously even in Nepal. There is hue and cry for quality health services in Nepal these days. Quality comes from quality education. Only trained and experience man power can provide quality ICU care. Unfortunately there are very few abroad trained ICU specialists with fellowship in Nepal. There is huge training need in this field.

Nepalese society of critical care medicine (NSCCM) established in 2010 is working for development of critical care medicine in Nepal through advocacy, CME, training and conferences. With this awareness to the discipline and interest among the young doctors to study critical care medicine has further increased.

**Initiation and achievements**

Critical care medicine is no longer a young specialty worldwide and it is an emerging specialty in Nepal as well. DM critical care medicine (DM CCM) as an educational program has just started from 2013 in the Institute of Medicine (IOM) in Nepal followed by DM Pulmunology
and critical care in 2012 and DM Emergency medicine in 2011. IOM runs 54 academic programs in clinical, basic medical and allied health sciences. The department of Anesthesiology; IOM has taken an initiation to run DM CCM, a high level quality program. We appreciate Canadian contribution to Fellowship training in critical care to three of our faculties from Anesthesiology Department. This was the major boost for us to have a working team and to build up our confidence to initiate DM CCM. There was memorandum of understanding between Royal College of Canada International (RCCI) and IOM. RCCI helped us to draft a world class curriculum and to initiate the program. Six bed adult Critical care unit was converted to 11 beds, and the services were upgraded. Special thanks goes to Dr R. Bouali the representative of RCCI for his wisdom and support for change. The Department of Anesthesiology organized a workshop on development of Critical care medicine in Nepal in collaboration with RCCI, IOM and ministry of Health in 2013. NSCCM organized its first National scientific conference and first ASAARCCS conference in 15th November 2014 with great success. Nepal Medical Council had only general guideline for DM, MCh superspecility training. Recently the council has organized workshops to update and formulate specialty specific guidelines including DM CCM specific guideline for assurance of standard and quality of education.

DM CCM program

The academic training varies between the universities and countries. The goal of DM Critical Care Medicine program is to train a super specialist in the field of Critical Care Medicine encompassing the related knowledge, clinical and communication skills, research skills and attitudes which will enable him/her to function as an independent Clinician, Consultant, Communicator, Facilitator, Collaborator, Supervisor, Manager, Health Advocate, Professional, Scholar and Research scientist in the field of Critical Care Medicine (as stated in Curriculum of DM CCM). DM critical care medicine is a 3 year residency program selected through entrance exam on merit basis. The residents are rotated through various ICUs and in Emergency department, interventional radiology, echocardiography and bronchoscopy units. Academic activities of residents include case presentation, topic discussion, journal club, seminar, medical audit and fatality case discussion, resuscitation, acute care, professional meeting etc. Autonomous and self-directed learning is encouraged. For wide exposure and experience community posting in the community hospital and elective posting in the advance centre are other attractions of the program. Furthermore residents has to get adequate knowledge and skills in supportive curriculum area of Medical ethic, Communication and conflict resolution skills, Infection prevention, Computer science and information technology, Research methodology, Innovations in medical education, Practice management. Recording of daily academic and clinical work is mandatory.

Policy and Performances

There is no National policy for Critical care Education and services as such. Many Institutions don’t have local organizational rules, working policy and protocols either. Time and again the Nepalese society of Critical Care medicine (NSCCM) has suggested to the health ministry demanding the National policy for better organization and development of Critical care service in Nepal. Community critical care service could be the best model for country like Nepal. The concept is that even community hospitals (zonal, regional and district hospital) can run community ICU with their existing human and other resources with some vision and input from health ministry and Central tertiary level Teaching hospitals at least primary and secondary level ICU. Health ministry has already taken some initiation for collaboration with teaching Institute for community posting of the MD, MS residents. In this background the Medical service section and planning section of health ministry can play vital role for development of primary and secondary level ICU service in the regional, zonal and district level hospital in collaboration with Institutes and hospitals having postgraduate teaching and tertiary level ICU. An excellent example is the Understanding between IOM and Seti zonal hospital in the far west. DM critical care resident from IOM, TUTH has been posted in recently established Seti zonal hospital ICU for last three months. The objectives of the posting are to establish, strengthen, upgrade and make the ICU sustainable for future. Many ICUs were open in the Government zonal hospitals but were not sustainable mainly due to lack of trained man power and in lack of support and determination from the administrative sides. The other objective of our posting is to train local physicians, nurses and paramedics since critical care service is a multidisciplinary team work. This creates local team that may include anesthesiologist, general physician, Emergency physician, surgeons and nurses for...
novel work of serving the sickest and poorest patient in their life threatening condition. Sustainability depends upon the team work, training and the support of administration. This program also provides an opportunity for our resident to develop leadership quality and organizational power. The Critical care unit of department of Anesthesiology, IOM is happy to support the first ICU in the far west Nepal.

Conclusion

Local Initiation and International cooperation with optimal management of resources are mandatory to develop affordable and effective world class critical care teaching program in Nepal to produce the human resources in our own needed for the country. The government should formulate national policy for critical care teaching, research and service. Community ICUs should be established in the regional, zonal and district hospitals for training and development of ICU services outside Kathmandu.
Perioperative fluid management in pediatric patients

Dr Shanta Sapkota
Head of department,
Kanti Children Hospital, Kathmandu, Nepal

ABSTRACT

Fluid management in perioperative pediatric patient is a regular activity of anesthesiologist. But before prescribing fluid we must be aware about the basic physiology and the rationale about the fluid to be used.

Water content and fluid loss in them are quite different. Fluid management is based on Holiday and Segar formula of 4/2/1. Isotonic crystalloid fluid is the choice. Hypoglycemia is a concern in preterm baby, sick patient, baby of diabetic mother and those on parenteral fluid with dextrose containing solution. Even these groups of patients should be prescribed with NS with 1% or 2.5% dextrose. But these types of formulation are not available in our setup.

Fasting guide lines are 6/4/1 for solid or formula milk, mother’s milk and clear fluid respectively. During intraoperative period, third space loss should be replaced by isotonic fluid, requirement depends upon the type of surgery. During post operative period, again the fluid should be isotonic fluid to avoid dilutional hyponatremia, cerebral edema and the sequelae.

Keywords:
Paediatric, perioperative fluid management.


Updates in cancer pain

Dr Dipesh Dhital
Consultant Anesthesiologist,
Bhaktapur Cancer Hospital, Nepal

ABSTRACT

Cancer pain is very common. Overall a third of those on treatment and up to 80% of those at the end stage of disease experiences pain. In a worldwide context, there are about 2.8 million people living with cancer and the WHO estimates 5.5 million of those receive no effective treatment. Anesthesiologist are often asked to provide pain relief for cancer patients, either in pain services or post-operative pain management. Cancer patients, at multiple anatomical locations, with varying degree of intensity and frequency, experiences pain that is multifaceted with different clinical descriptors. Even with a similar type or severity of or types of pain the effective opioid dose as well as the relative toxicity ratios may vary greatly. Breakthrough pain is very difficult to control and it represents one of the most serious and highly debilitating cancer related events. For effective treatment for moderate to severe pain management there are several barriers. The use of co-analgesics for neuropathic pain is important as such pain is resistant to opioids. Interventional pain relief is required whenever appropriate and done with best available expertise. The recent years have seen a dramatic increase in the identification of genetic factors influencing the perception of pain as well as the efficacy of drugs.

Keywords:
Cancer; pain; treatment
**Fracture tracheal cartilage due to malignant lung mass leading to respiratory distress - perioperative anesthetic management**

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**ABSTRACT**

**Introduction**

Tracheal obstruction is challenging for anesthesiologist. It may be caused by foreign body, mass; swelling etc. We report another cause of tracheal obstruction with stridor.

**Case History**

A 55 year male patient of cancer lung with severe stridor was posted for Y-stenting with rigid bronchoscopy under general anesthesia. He had history of progressive respiratory difficulty for 2 months with partial relief on IV hydrocortisone and salbutamol nebulisation. CT chest 15 days prior to the procedure showed malignant large right upper lobe mass, abutting arch of aorta and compressing right upper lobe bronchus along with enlarged right hilar and subcarinal lymph node. In the OT, he was placed in 40-50 degree head up position and routine monitors were attached. Anesthesia was induced with i.v. fentanyl 40 microgram, propofol and ketamine (2:1). Rigid bronchoscope was inserted and spontaneous ventilation was maintained through the ventilating port of the rigid bronchoscope. Anesthesia was maintained with titrating dose of propofol and ketamine mixture with sevoflurane. There was fracture of tracheal cartilage leading to distorted anatomy. A ‘Y’ stent could be placed with difficulty under bronchoscopic guidance to make the lumen patent. Thereafter the patient was shifted to the ICU and was quite comfortable with no stridor, maintaining SpO2 98% without oxygen.

**Discussion**

Tumor mass can compress or erode the trachea supporting structure including cartilage. This may lead to stridor. This type of obstruction is an emergency and not amenable to conventional techniques like drugs like salbutamol, steroids etc.

**Conclusion**

Tracheal cartilage fracture may be the cause of acute stridor in cancer lung patients.

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**Keywords:**  
Cancer lung; fracture; tracheal cartilage
**ABSTRACT**

Anesthesia is necessary for surgery, however, it does not deliver any direct therapeutic benefit. The risks of anesthesia must therefore be as low as possible. Various studies of medication error during anesthesia have identified sources of risk and methods to reduce them. An analysis of 2000 incident reports in one study has concluded that factors which contributed significantly to the incidents were of similar appearance, inattention and haste. Failure of communication was a significant factor in syringe incidents when two or more staffs were involved. Strategies suggested to address the ‘wrong drug’ problem include education of staff about the nature of the problem and the mechanisms involved; colour coding of selected drug classes for both ampoules and syringes; use of standardized drug storage protocols; having a drawing up and labeling convention; and the use of checking protocols. An 8-year retrospective analysis at an urban university hospital found that overdose, substitution and omission were the main causes of anesthesia-related medication errors. Yet another study done in an intensive care unit concluded that interns made substantially more serious medical errors when they worked frequent shifts of 24 hours or more than when they worked shorter shifts. Eliminating extended work shifts and reducing the number of hours interns work per week can reduce serious medical errors in the intensive care unit. Changes in technology, such as anesthetic delivery systems and monitors, application of human factors, use of simulation, and the establishment of reporting systems are few methods to reduce the medication errors in anesthesia.

**Key words:**

Anesthesia; incident report; medication error; substitution
What is the best method to predict fluid responsiveness in hemodynamically unstable patients?

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Panel Experts:
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3. Associate Prof. Dr. Tamanna Bajracharya,
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ABSTRACT
Resuscitation with intravenous fluid can restore intravascular volume and improve cardiac output. However, in unstable patients, approximately 50% of fluid boluses fail to improve cardiac output as intended. Increasing evidence suggests that excess fluid may worsen patient outcomes. Clinical examination and vital signs are unreliable predictors of the response to a fluid challenge. Panel discussion is organized to review the best tool to predict fluid responsiveness in different patient conditions.

Keywords:
Fluid responsiveness; resuscitation
Pro Con
Debate
Mannitol Vs Hypertonic Saline for management of intracranial hypertension.

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ABSTRACT

Intracranial hypertension is a neurological emergency that requires immediate recognition and intervention to prevent irreversible injury and death. Raised intracranial pressure results in a decrease in cerebral perfusion pressure. Cerebral blood flow becomes insufficient for adequate brain-tissue perfusion and cerebral ischemia ensues, worsening the rise in intracranial pressure. Sustained and higher intracranial pressure is associated with worst outcomes. Pharmacotherapeutic agents are the integral components of management of intracranial hypertension. However, significant controversy exists regarding the use of the most common agents, mannitol, and hypertonic saline. Randomized controlled trials suggest that hypertonic saline may be superior to mannitol for the treatment of elevated intracranial pressure. However, the meta-analysis of trials are limited by the small number and size of eligible trials. Large, multicenter, randomized trials are urgently needed to establish the better first-line medical therapy for intracranial hypertension. Moreover, other patient specific factors like intravascular volume status, acute kidney injury and heart failure need to be considered while choosing these agents. The pro-con debate will elaborate the evidence bases and the rationale approach to choose one of these agents in various clinical scenarios.

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Keywords:
Hypertonic saline, intracranial hypertension, mannitol.
**Should Cricoid Pressure Be Used During Rapid Sequence Intubation?**

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**ABSTRACT**

The role of cricoid pressure in emergency airway management has come under a lot of scrutiny in recent years. When we look back at the original data – it seemed like a good idea, had some experimental data to support it – but there was no good large-scale evidence to suggest that it had made a difference to the outcome. There is a paucity of good, reliable evidence to support or deny the use of cricoid pressure. Clinicians should use individual judgment to make up his or her own mind and importantly to follow the local policy.

**Keywords:**

Cricoid pressure; emergency airway
Oral Presentation
Prediction of difficult intubation through modified mallampatti and thyromental distance

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ABSTRACT

Introduction

Difficult intubation, often unexpected, remains a primary concern for the anaesthesiologist. None of the bedside airway assessment tests have proven to be efficacious and highly predictive. This study was done to determine overall incidence of difficult laryngoscopy and intubation, also to determine the sensitivity and specificity of modified Mallapatti test alone, thyromental distance alone and combination of both the tests in predicting difficult intubation.

Methods

One hundred and eighty apparently normal ASA grade 1 and 2 patients undergoing elective surgeries under general anaesthesia were included in the study. 60 patients were included in each group including modified Mallampatti test or thyromental distance or both. The correlation between modified Mallampatti test grading, thyromental distance and Cormack and Lehane laryngoscopic grading was done.

Results

The overall incidence of difficult intubation was 12.2%. Prediction of difficult intubation by modified Mallampatti test alone among 60 patients resulted in sensitivity of 11.1% and specificity of 90.2%. In second group in which thyromental distance was used alone the results showed it had sensitivity of 33.3% and specificity of 96.49%. When both the diagnostic measures were combined, the resulting value of sensitivity was 22.2% and specificity was 82.35%.

Conclusion

The study showed that sensitivity to predict difficult intubation was highest in the thyromental group alone followed by combined group and modified Mallampatti test alone while comparison of specificity values show highest values in thyromental group alone followed by modified Mallampatti test alone and combined group.

Keywords:
Cormack and Lehane grading; Mallampatti test; thyromental distance
Phenylephrine for blood pressure control in LSCS: prophylactic versus therapeutic

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ABSTRACT

Introduction

Hypotension is common in caesarean section for which Phenylephrine is drug of choice given therapeutically. We conducted a study to compare the effect of prophylactic dose of phenylephrine with therapeutic dose and measure changes in blood pressure, nausea & vomiting and Apgar score.

Methodology

The study was comparative, prospective, double blinded conducted in 104 ASA PS I and II parturients scheduled for elective caesarean section. Subarachnoid block with 0.5% heavy Bupivacaine was given after co-loading with Ringer’s lactate 10-15 ml/kg. Inj. Phenylephrine i/v was given in group P after giving SAB while another group T received same volume of Normal saline. Incidence of hypotension, nausea & vomiting, and difference in Apgar score were noted between two groups. Statistical analysis was done to analyze the effect of prophylactic Phenylephrine on blood pressure and its consequences in mother and fetus.

Results

Incidence of hypotension was found to be 53% in group T, 21% in group P which was statistically significant. Thus group P had decrease in occurrence of hypotension by 39.62%. Group T had incidence of nausea & vomiting of 46% while in group P the incidence was 11%. There was decrease in nausea and vomiting by 23.91% in group P which was statistically significant. There was no difference in Apgar score between two groups.

Conclusion

Prophylactic use of phenylephrine decreases the incidence of hypotension, nausea and vomiting, thus offers a better hemodynamic control over the conventional therapeutic use of the same drug.

Keywords:

Caesarean section; hypotension; Phenylephrine
**Ketamine, Fentanyl, normal saline pretreatment: Laryngeal mask airway insertion conditions, hemodynamics for Propofol induction in children**

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**ABSTRACT**

**Introduction**

A laryngeal mask airway (LMA) has been used frequently in pediatric anesthesia. The insertion of LMA requires sufficient depth of anesthesia for LMA to be tolerated without undue coughing, gagging, breath-holding and patient movement. This double-blinded, prospective, randomized, controlled study compared the effect of addition of Ketamine, Fentanyl and normal saline pretreatment on LMA insertion conditions and hemodynamics in Propofol induction in children.

**Methods**

Sixty children (age 4 – 14 years) were randomly allocated to receive either Ketamine 0.5 mg/kg, Fentanyl 1 μg/kg or normal saline pretreatment, 20 in each group. LMA was inserted 60 seconds after induction with Propofol 3 mg/kg. Heart rate and mean blood pressure were noted before pretreatment, at LMA insertion, 2 minutes and 4 minutes after insertion of LMA. LMA insertion summed score was prepared using six variables (mouth opening, coughing, swallowing, patient’s movement, laryngospasm, and ease of insertion).

**Results**

LMA insertion summed scores were similar in Ketamine and Fentanyl group, which were significantly better than saline group (p value <0.05). Mean blood pressure and heart rate were significantly higher in Ketamine and normal saline group than Fentanyl group. Incidence and duration of apnea was higher in Fentanyl group compared to Ketamine and saline group.

**Conclusion**

Ketamine and Fentanyl pretreatment to propofol induction for LMA insertion in children provides better LMA insertion condition than placebo. Ketamine pretreatment is associated with better hemodynamic stability, while Fentanyl pretreatment has greater duration of apnea.

**Keywords:**

Fentanyl; Ketamine; Laryngeal mask airway insertion; Propofol
**Dexmedetomidine on perioperative hemodynamics in patients undergoing laparoscopic cholecystectomy**

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**ABSTRACT**

**Introduction**

Positioning and pneumoperitoneum during laparoscopic cholecystectomy produce significant hemodynamic changes. This study was designed to evaluate the efficacy of Dexmedetomidine to provide perioperative hemodynamic stability in patients undergoing laparoscopic cholecystectomy.

**Methods**

In this randomized, double blind, prospective study, 70 patients of ASA PS I and II undergoing elective laparoscopic cholecystectomy were randomly allocated in one of the two groups containing 35 patients each. Group D received Dexmedetomidine loading dose at a rate of 1 mcg/kg over 10 minutes followed by 0.2 mcg/kg/hr iv infusion. Group S received 0.9% saline in the same rate. Systolic, diastolic blood pressure, mean arterial pressure and heart rate were recorded immediately after intubation, incision, throughout pneumoperitoneum, after extubation and in post anaesthesia care unit.

**Results**

In Group D, there was significant decrease in systolic, diastolic blood pressure, mean arterial pressure and heart rate from baseline, however the parameters were within normal limit as compared to significant increase in Group S after intubation, incision, throughout the period of pneumoperitoneum, at extubation and at post anaesthesia care unit (p value <0.05). There was no any statistically significant adverse event observed in Group D.

**Conclusion**

Dexmedetomidine improves perioperative hemodynamic stability during laparoscopic cholecystectomy in a dose of 1 mcg/kg over 10 minutes followed by 0.2 mcg/kg/hr iv infusion without any untoward effects.

**Keywords:**

Dexmedetomidine; hemodynamic; laparoscopic cholecystectomy
Comparative study of intrathecal isobaric Ropivacaine versus hyperbaric Bupivacaine for cesarean section

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ABSTRACT

Introduction
For cesarean section under subarachnoid block, hyperbaric Bupivacaine is widely used local anesthetic but disadvantage is longer duration of motor block. Ropivacaine has shown greater selectivity for sensory blockade along with lower systemic toxicity compared to Bupivacaine when used for spinal anesthesia. Our aim was to compare efficacy of intrathecal 0.75% isobaric Ropivacaine with 0.5% heavy Bupivacaine for cesarean section.

Methodology
In this randomized, blinded study, sixty four American Society of Anesthesiology(ASA) I and II patients for cesarean section were allocated to receive either intrathecal 21mg 0.75% Ropivacaine(R) or 11mg 0.5% Bupivacaine(B). Onset, duration, spread of sensory and motor block, haemodynamic parameters and side effects were recorded.

Result
Time to achieve sensory block to T6 (R: 5.2±1.5 vs B: 3.3±1.0 minutes) and to maximal level (R:6.3±1.7 vs B:3.9±1.2 minutes) were longer in Ropivacaine group (p<0.001). Duration of sensory block was comparable in both groups (R:136.5±17.7 vs B:140±20.3 minutes). Duration of motor block was significantly shorter than Bupivacaine group (R:131.5±17.4 vs B:152.3±14.7) (p<0.001).

Conclusion
Spinal anesthesia for cesarean section with intrathecal 21 mg of 0.75% isobaric Ropivacaine provided clinically effective surgical anesthesia with similar sensory block but shorter duration of motor block.

Keywords:
Bupivacaine; Cesarean Section; Ropivacaine; Spinal Anesthesia
ABSTRACT

Introduction

Propofol is the most commonly used induction agent, which often causes pain on injection. Several modalities have been described in literature to reduce this pain. However, complete inhibition of pain has not been achieved. The aim of this study is to find out the efficacy of Ketamine and Lidocaine as pretreatment to reduce the Propofol induced pain in local population.

Methodology

A Prospective randomized Double blind comparative study was conducted after approval from Institutional Review Board. Ninety patients of ASA I and II, age 16 – 65 years were randomly assigned into three groups. Group S (n=30) received 0.9% saline, Group L (n=30) received 0.5mg/kg of Lidocaine, and Group K received 0.1mg/kg of Ketamine. All pretreatment drugs were made into 5ml solution. Ringer Lactate infusion was started through 18G IV cannula on the cephalic vein and stopped before giving the study drug. Study drug was given as an IV bolus. After 30 seconds 1/4th of the total induction dose of Propofol (2mg/kg) was injected at the rate of 1ml/sec. Propofol induced pain, heart rate and mean arterial pressure were recorded.

Results

Incidence of Propofol induced pain was 56.7%. Group L 63.3%, Group K 40% and group S 66.7% had pain which was significant (p value = 0.005) among the groups. There were no significant difference in mean heart rate obtained at baseline (p= 0.085), after the study drug (p= 0.347), after test dose of Propofol (p= 0.838) and before intubation (p=0.183). The mean arterial pressure at baseline (p= 0.232), after the study drug (p= 0.350) and before intubation (p=0.057) were not significant. However, mean arterial pressure after the test dose of Propofol was significant with p value = 0.009.

Conclusion

Pretreatment with Ketamine 0.1mg/kg is more effective than Lidocaine 0.5mg/kg in reducing Propofol induced pain.

Keywords:
Ketamine; Lidocaine; Propofol
Study on effect of Halothane and Sevoflurane for ambulatory surgery in children

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ABSTRACT

Introduction

Inhalational anesthesia remains the fundamental technique in pediatric anesthesia for induction due to difficult venous excess and handling an uncooperative child. This study was conducted to compare the clinical outcome of Halothane and Sevoflurane during induction and emergence in children undergoing elective surgery.

Methodology

In this randomized single bind study, 126 children of ASA I and II aged 6 months to 6 years, were randomly allocated into two group Halothane and Group Sevoflurane for ambulatory surgery. Induction time, complete induction time and other side effects were compared. Heart rate at different intervals was recorded. Incidence of emergence was recorded using Pediatric Anesthesia Emergence Delirium scale. Recovery events and recovery score were assessed using modified Aldrete recovery score.

Results

Ages, gender, weight, ASA physical status between the two groups were comparable. Rapid induction 63.16± 18.095 secs versus 87.37± 32.700 secs; and complete induction time 228.59 ± 68.039 secs versus 275.21± 100.991 secs with Sevoflurane. Adverse events were comparable between two groups. Recovery time in Sevoflurane was 15.17 ± 8.858 mins versus 25.76± 11.666 mins in Halothane group.

Conclusion

It is concluded that Sevoflurane has significant shorter time for induction and recovery without any significant difference in adverse events.

Keywords:

Ambulatory; Children; Halothane; Sevoflurane
Comparison of outcome predictions by full outline of unresponsiveness score and Glasgow Coma Scale

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ABSTRACT

Introduction
The Glasgow Coma Scale (GCS) is the most widely used scoring system for evaluating the alterations of consciousness. Its limitations include inability to assess the verbal component in intubated or aphasic patients, and inconsistent inter-rater reliability. The FOUR (Full Outline of Unresponsiveness) score not reliant on verbal response, was recently proposed. The aim of this study was to compare the outcome predictive ability of GCS and FOUR score in the intensive care unit setting.

Methods
Patients above 16 years who presented to ICU with altered consciousness were included. The GCS and FOUR score were measured within 24 hours of ICU admission and GOS was measured at hospital discharge. In-hospital mortality was used as the primary outcome measure.

Results
A total of 60 patients were studied. The Spearman rho correlation coefficient between FOUR score and GCS was 0.946 (p<0.001). The area under the receiver operating characteristic (ROC) curve was 0.905 for FOUR score and 0.904 for GCS. The sensitivity and specificity of FOUR score versus GCS were 82.5% and 80% versus 85% and 80% respectively.

Conclusion
The outcome measurement of FOUR score was comparable with the GCS and both the score correlated well. Thus FOUR score can be developed as a useful tool for situation where GCS cannot be reliably applied.

Keywords:
Coma; FOUR score; Glasgow Coma Scale (GCS); Prognosis
**Maternal collapse during cesarean section**

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**ABSTRACT**

**Introduction**

Maternal collapse is an event that affects the cardiopulmonary or brain that results in reduced or absent consciousness at any stage in pregnancy and up to six weeks after delivery. Obstetric hemorrhage is the leading cause of maternal collapse in our part of the world. Cardiac arrest during cesarean section is challenging to both the anesthesiologists and the obstetrician. It is a rare complication, however if occurs, is difficult to manage. Here we are reporting two case series of cardiac arrest during cesarean section following delivery of baby due to hemorrhage. Both cases revived after active resuscitation followed by massive blood transfusion.

**Case 1**

22 years old female, gravida two, para one, at 40 weeks of gestation with anemia underwent emergency cesarean section for previous cesarean section scar tenderness under subarachnoid block developed intraoperative cardiac arrest. She was resuscitated and kept in elective mechanical ventilation. She self extubated in the 2nd postoperative day. She was discharged on 16th postoperative day without any neurological deficit.

**Case 2**

33 years old female who underwent elective cesarean section under subarachnoid block for complete placenta praevia developed intraoperative cardiac arrest due to hemorrhage. She was resuscitated and emergency hysterectomy was done. Her postoperative course was uneventful.

**Conclusion**

Obstetric hemorrhage is unpredictable and is still an important cause of maternal mortality. The problems were timely recognized and effective cardiopulmonary resuscitation saved the lives of two mothers.

**Keywords:**

Cardiac arrest; cesarean section; maternal collapse
ABSTRACT
Case history
A 40 year female on oral anticoagulant for 2 years appeared for laparoscopic cholecystectomy for benign gallstone disease. She had a replaced mitral valve for severe rheumatic mitral stenosis. Currently she did not have features of heart failure, endocarditis and had a good exercise tolerance. Recent echocardiography showed moderate aortic stenosis with severe aortic regurgitation. She was also on Metoprolol, Diuretics and Digoxin. Aim of this case report is to illustrate perioperative anticoagulation balance between chances of thrombosis and bleeding and concerns regarding aortic valve defects. Warfarin was discontinued 5 days before surgery. LMWH was started 2 days before surgery when INR was 1.79. With due concern to her recent echocardiographic findings, general anesthesia was maintained with appropriate positive pressure ventilation, fluid administration and use of beta blocker to maintain hemodynamic stability. Surgical technique was modified with use of minimally invasive technique with minimal intraperitoneal pressure creation and minimal bed tilt. Proper hemostasis was assured before closure. Surgery underwent without complication. Adequate analgesia was maintained postoperatively to avoid tachycardia thus avoiding further hemodynamic alteration. LMWH was started 12 hours after surgery after conformation of no significant bleeding. Warfarin was started on first postoperative day. After 5 days of surgery, LMWH was stopped and warfarin continued at regular preoperative dose and patient discharged after conformation of therapeutic INR with a follow up to surgery OPD.

Conclusion
As concluded by numerous previous studies, for short duration surgery, proper approach to management could prevent complications of thrombosis as well as bleeding in patients on anticoagulant.

Keywords:
anticoagulation; laparoscopic cholecystectomy; prosthetic mitral valve
Perineural interscalene catheter insertion for upper limb amputation

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ABSTRACT

Introduction
Interscalene brachial plexus block provides excellent analgesia for shoulder and upper arm surgery during and in early postoperative period as well as for phantom limb pain. Placement of perineural catheter can lengthen analgesia further expediting recovery and avoiding unwanted effects of other parenteral analgesics.

Case history
19yr/M with history of electric burn was planned for right shoulder disarticulation for nonviable right upper limb and debridement of upper abdomen wound. He was planned for perineural interscalene catheter insertion followed by general anesthesia. Ultrasound and peripheral nerve stimulator guided right perineural interscalene catheter was kept and 20 ml of 0.2% Ropivacaine was given. After assessing block characteristics, general anesthesia was instituted. Intraoperative period was uneventful. In postoperative period, continuous infusion of 0.2% Ropivacaine 5 ml/hr was started via perineural catheter. Patient received only IV paracetamol for pyrexia and there was no requirement for other parenteral analgesics. Catheter was removed in the 3rd postoperative day.

Conclusion
Perineural catheter insertion and continuous local anesthetic infusion provides excellent peri and post-operative pain as well as phantom limb pain relief for upper limb surgery involving shoulder and upper arm, improving patient’s overall satisfaction.

Keywords:
Interscalene Block; Perineural catheter; Phantom limb pain
**Mallampati class zero**  
- a successfully managed case with difficult intubation

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**ABSTRACT**

**Introduction**  
Mallampati Class Zero described as the ability to see any part of the epiglottis is generally linked with easy intubation but the consensus regarding its exact prediction during laryngoscopic view is unknown.

**Case history**  
A 55 years lady with past history of partial glossectomy with neck dissection for carcinoma of base of tongue was admitted with the plan of laminectomy and excision for D11– D12 spinal menigioma. Her clinical examination revealed normal findings of her airway along with restricted neck movement. On mouth opening, the tip of epiglottis was clearly seen which is designated as Class zero as per modified Mallampati Classification. She also had poor dentition.

Anesthesia was induced with propofol and succinylcholine. The laryngoscopic view according to Cormack and Lehane was grade III. In the first attempt intubation was successful with the help of a bougie. Intraoperative and postoperative period was uneventful.

**Conclusion**  
The incidence of class zero airway remains unclear. However it has been correlated either with easy intubation than difficult intubation. We also came across with Mallampati class zero case but the intubation was difficult. It might be due to the past history of partial glossectomy with neck dissection.

**Keywords:**  
Difficult intubation; mallampati class zero
**ABSTRACT**

**Introduction:**
American heart association has defined bradycardia as heart rate of less than sixty beats per minute in an adult. Bradycardia in postoperative period may have many potential causes and association condition.

**Case history**
A 67 years male with diagnosis of hypertension with chronic kidney disease under medical management (calcium channel blocker, angiotensin receptor blocker) underwent bilateral mesh repair for hernia under combined spinal epidural anesthesia. He gave history of hemodialysis once twelve years back and was admitted in Intensive Care Unit for a day. Intraoperative findings went uneventful. After about 5 and half hours of surgery, call attended for bradycardia (48 beats/min) in postoperative ward. Patient was asymptomatic and other clinical examination findings were normal. 12 lead electrocardiography showed atrioventricular dissociation. Anticholinergic was given for initial management which was of not much help. At this point previous documents were available which mentioned hyperkalemia induced heart block with temporary pacemaker placement for a day. Laboratory investigation revealed hyperkalemia and managed with calcium gluconate, dextrose insulin infusion, beta agonist nebulisation etc.

**Conclusion**
This case illustrates the significant values of complete history and potential risk of developing heart block in patient with medically optimized chronic kidney disease.

**Keywords:**
Bradycardia; chronic kidney disease; hyperkalemia
Paracetamol and Lidocaine pre-treatment for alleviation of Propofol induced pain

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ABSTRACT

Background

Propofol is the most commonly used intravenous agent for induction of anesthesia at present. Despite its popularity in producing pleasant sleep and rapid recovery it causes significant pain during intravenous injection. Several pharmacologic and non-pharmacologic techniques have been advised to reduce the pain associated with injection of Propofol. In the present study we aimed to assess and compare the effects of intravenous Lidocaine and Paracetamol as pre-treatment to prevent/reduce the pain associated with Propofol injection.

Methodology

A randomized, prospective, double blind study including 90 patients divided into 3 equal groups of 30 each. A cuff was inflated to 100 mm Hg proximal to the site of cannulation and the pre-treatment drugs injected and retained for 2 minutes. Group A received intravenous Lidocaine 40mg dissolved in 10 ml normal saline, Group B received 100mg of intravenous Paracetamol (10ml) and Group C received 10 ml Normal saline as placebo. Then the cuff was deflated and 25% of induction dose of Propofol was injected and pain assessed using the Verbal Rating Scale.

Results

The three groups were comparable with respect to patient’s demographic characteristics. The incidence of pain on Propofol injection was 13.3% in Group A, 20% in Group B and 43.3% in Group C, respectively.

Conclusion:

Pretreatment with intravenous Paracetamol or Lidocaine is effective in reducing Propofol induced pain.

Keywords:
Lidocaine; Paracetamol; Propofol pain.
Comparison of Ropivacaine and Bupivacaine in ultrasound guided supraclavicular block

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ABSTRACT

Introduction
Supraclavicular brachial plexus block is a routinely practised procedure for upper limb surgeries with Bupivacaine used extensively as local anesthetic agent. Ropivacaine, a long acting amide local anaesthetic, has improved safety profile when contrasted to Bupivacaine. This study aimed at comparing the efficacy of Ropivacine and Bupivacaine.

Methodology
A prospective randomized double blind study was conducted which involved 60 patients divided into two groups (Group R – 0.5% Ropivacaine and Group B- 0.5% Bupivacaine), who underwent elective upper limb surgeries under supraclavicular brachial plexus block. Patients were observed for onset and duration of sensory and motor block and complications if any. The analgesic time was based on numeric rating scale.

Results
The onset time for sensory block was 9.03±3.61min with Ropivacaine and 8.59±4.43min with Bupivacaine (p=0.683). Onset of motor block was 11.93±4.12min with Ropivacaine and 10.89±4.41min with Bupivacaine (p=0.365). Duration of sensory and motor block was respectively 664.59±158.2min and 584.03±121.44min with Ropivacaine while it was 703.63±158.35min and 638.63±127.08min with Bupivacaine which were statistically insignificant.

Conclusion
The sensory and motor block produced by Ropivacaine is similar to Bupivacaine in terms of onset and duration. So Ropivacaine can be used as an alternative to Bupivacaine in peripheral nerve blocks.

Key words:
Bupivacaine; Ropivacaine; brachial plexus block
Clinical effect of oral clonidine in patients undergoing laparoscopic cholecystectomy

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ABSTRACT

Introduction

Hemodynamic changes brought by pneumoperitoneum during laparoscopic cholecystectomy is a common problem. The aim of the study was to investigate the effects of oral clonidine on stabilization of hemodynamics and requirement of post-operative analgesia in laparoscopic cholecystectomy.

Methodology

Fifty two adult patients scheduled for elective laparoscopic cholecystectomy were recruited for a prospective randomized, double-blinded control study. They were randomly allocated to receive either oral clonidine 150µg (Group C) or vitamin B-complex (Group B), 90-120 minutes before induction of anesthesia. The two groups were compared with respect to hemodynamic parameters before induction, immediately after intubation, before and at 5, 10, 15, 30 minutes after creation of pneumoperitoneum and after its release. Time to first analgesic requirement and cumulative analgesic requirements were also compared.

Results

Systolic, diastolic, mean blood pressures and heart rate were lower in the clonidine group than in control group immediately after endotracheal intubation, during pneumoperitoneum and after release of pneumoperitoneum (P<0.05). Oral clonidine also had prolonged time interval to the first analgesic requirement (128.85±39.98 vs 69.81±19.42 minutes) and total analgesic requirement (148.08±26.39 vs 188.46±32.59 mg) over first 24 hours postoperatively.

Conclusion

Administration of oral clonidine results in stabilization of hemodynamics after creation of pneumoperitoneum and reduction in requirement of post-operative analgesia in laparoscopic cholecystectomy.

Keywords:

Clonidine; hemodynamics; laparoscopic cholecystectomy
**ABSTRACT**

**Introduction**

Caudal clonidine prolongs the duration as well as the quality of analgesia. The aim of the study is to determine the analgesic effect of clonidine as an adjuvant to bupivacaine in caudal block.

**Methods**

A randomized blinded interventional study was conducted at Kanti Children’s Hospital after ethical approval. A total of 64 American Society of Anesthesiology (ASA) physical status grade I and II cases were included in the study of which 32 patients received Bupivacaine (A) 2mg/kg, (total volume 1ml/kg), 32 patients received Bupivacaine 2 mg/kg with 1 ug/kg Clonidine(C). (Total volume 1 ml/kg). They were evaluated for duration of analgesia using FLACC scale, changes in heart rate (HR) and mean arterial pressure (MAP) and adverse effects of the drug.

**Results**

Age, gender, ASA status, weight, duration of surgery were comparable among the groups. The duration of analgesia was (B: 520±57 mins, A: 264±68 mins, p-0.000).The FLACC scale used to assess pain was lower in Group B. Intraoperatively both groups remained hemodynamically stable. Incidences of vomiting was comparable in both groups (3 in each).

**Conclusion**

Clonidine 1µg/kg prolongs the duration of analgesia of caudal bupivacaine.

**Keywords**

caudal analgesia; clonidine; pediatric
**ABSTRACT**

**Introduction**

Mitral stenosis is the most common acquired valvular lesion in pregnant women with rheumatic heart disease. Anesthesia for cesarean section in women with cardiac disease can be challenging.

**Case History**

A 50 kg, 36 year woman (Gravida3: Para 1+1) at 38th week gestational age with rheumatic heart disease with severe mitral stenosis for 7 years, NYHA I and METS > 10, presented for elective cesarean section. Her vitals were: HR 80 bpm regular, BP 110/80 mmHg and RR 16 breaths/min. On auscultation, chest was clear with diastolic murmur. FHR was 130 bpm. ECG showed HR 75/min sinus rhythm. ECHO revealed severe MS, moderate MR and LVEF=60%. She was kept NPO (6h) with aspiration prophylaxis. Patient was kept in left lateral position with ASA standard monitoring with A-line in left radial artery. Fentanyl (200mcg), Propofol (60mg) and Succinylcholine (100mg) were given IV for induction and intubation. Anesthesia was maintained with Isoflurane(0.6- 0.8%) and Vecuronium. Flo Trac and BIS monitoring were established. Her hemodynamics remained stable. Single alive male was delivered with APGAR score of 7/10 and 8/10. Oxytocin was administered 40 U IV over 2 hours. Bilateral TAP block was done. Patient was extubated and transferred to CCU. There was no perioperative complication.

**Conclusion**

Applying adequate hemodynamic monitoring and achieving goals of avoiding tachycardia and decrease in afterload, and maintaining preload and contractility are important for successful anesthetic management of cesarean section in patient with severe mitral stenosis.

**Keywords:**

Cesarean Section; General Anesthesia; Mitral Stenosis
**ABSTRACT**

**Introduction**

Pheochromocytoma is a rare tumor arising from the chromaffin cells of adrenal medulla or from other paraganglia of sympathetic nervous system. This form of tumor is a major challenge to anesthesiologists as acute changes in BP and HR usually occurs leading to hemodynamic instability intraoperatively due to release of catecholamines from the tumor site before tumor resection and cessation of the same after resection. Better hemodynamic stability is desired during this form of tumor resection as acute fluctuations in BP may lead to severe intracranial or cardiovascular events.

**Methods**

Inotropes, vasopressors, antihypertensive agents and beta blockers may be used to achieve hemodynamic stability for this purpose. Dexmedetomidine and MgSO4 may be used as anesthetic adjuncts to achieve greater degree of hemodynamic stability along with other agents. Dexmedetomidine and MgSo4 were administered in loading dose followed by maintenance dose throughout intraoperative period.

**Results**

The use of these agents in our case conferred better hemodynamic stability as there were lesser number of acute fluctuations in BP and HR.

**Conclusion**

From our experience in this case, better intraoperative hemodynamics could be obtained by the use of Dexmedetomidine and MgSO4 as anesthetic adjuncts though it is difficult to make a firm conclusion regarding the same as there is inadequate evidence and papers relating to the use of these agents as anesthetic adjuncts to attain better hemodynamics during pheochromocytoma resection.

**Keywords:**

Dexmedetomidine; Magnesium sulphate; Pheochromocytoma
Distorted laryngeal anatomy discovered during intubation after anesthetic induction in a case of xanthoma disseminatum

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ABSTRACT
Xanthoma disseminatum (XD) is a rare, benign, non-Langerhans cell histiocytic disorder characterized by lipid deposition in skin, mucous membranes and internal organs. The case presented here is of 32 year old female with established diagnosis of xanthoma disseminatum for last 2 years, with manifestation of multiple papulonodular skin lesions, who was planned to undergo nasal reconstruction surgery for nasal deformity with choanal stenosis. The normal airway examination externally and unavailability of internal airway imaging films, led the anesthesia team to be non-suspicious of difficult intubation. Thus the distorted laryngeal anatomy found during intubation could only allow passage of 3.5mm internal diameter Murphy endotracheal tube, and the surgery was postponed to allow further workup of the disease progression in the patient.

Keywords: Xanthoma disseminatum; difficult intubation
Myocardial infarction after electroconvulsive therapy

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ABSTRACT

ECT is one of the recommended mode of treatment in schizophrenia due to its safety and efficacy. This report presents a case of a 47-year-old male inpatient with diagnosis of schizophrenia with DM with HTN who developed myocardial infarction immediately after his 15th session of electroconvulsive therapy. Serial ECGs showed ST elevations in leads V1 – V6 along with elevation in levels of troponin I and CK-MB. After initial medical management, case was referred to nearby cardiac centre where primary PCI was done on same day. No further ECTs were planned.

Keywords:
ECT; myocardial infarction; schizophrenia
ABSTRACT

Introduction

Spinal anaesthesia commonly used technique for lower abdominal surgeries. It is economical, easy to administer, rapid onset, dense sensory and motor block with negligible risk of aspiration. Various adjuvants tried for spinal anaesthesia for prolongation of sensory, motor block and good analgesia. Dexmedetomidine has good sensory, motor block, analgesic, hemodynamic and has less systemic toxicity. This study is designed to evaluate, the effects of intrathecally administered Dexmedetomidine on the onset and duration of hyperbaric Bupivacaine induced sensory block, intra operative hemodynamic stability, quality of post operative analgesia undergoing lower limb orthopedic surgeries.

Methodology

Prospective, randomized and double blind interventional study was conducted in NAMS and its affiliated hospitals after ethical approval. Sixty ASA I and II patients were enrolled. Written informed consent was taken. Group (B) received 3ml Bupivacaine with 0.5ml normal saline. Group (D) received 3ml Bupivacaine with 5mcg Dexmedetomidine. Heart rate, mean arterial blood pressure, sensory block to T10, first analgesic requirement time, visual analogue score and side effect were recorded.

Result

Time to achieve sensory block to T10 was shorter in Dexmedetomidine group (5.8±1.7 vs 4±1.2 minutes). Duration of 1st analgesic requirement was significantly longer in Dexmedetomidine than Bupivacaine group (183.37±22.4 vs 288.97±27.7, p<0.001). In comparison with Dexmedetomidine group mean arterial pressure is significantly decrease in Bupivacaine group (P<.001)

Conclusion

Dexmedetomidine 5mcg with Bupivacaine intrathecal has good hemodynamics, fast sensory block and prolong analgesia.

Keywords:

Dexmedetomidine; Intrathecal; Hemodynamics; Analgesia
**Hemodynamic response to use of various airway devices: A comparative study**

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**ABSTRACT**

**Introduction**

Various airway devices and techniques of airway management can be employed to anesthetized or sedated patients. Of all the gold standard is the endotracheal tube, its insertion causes increase in hemodynamic response. So to minimize the hemodynamic response, supraglottic airway devices like Proseal LMA and Laryngeal tube suction II airway can be used which have an additional advantage for preventing risk of aspiration. The aim of this study is to compare hemodynamic changes during the insertion, time of insertion and postoperative complications

**Methodology**

Ninety patients of ASA I and II for laparoscopic cholecystectomy were randomly allocated to receive either Proseal LMA (Group P), laryngeal tube suction II (Group L) or endotracheal tube (Group E). The time of insertion, hemodynamic parameters and postoperative complications were compared.

**Result**

Baseline demographic variables were comparable in the 3 groups (p-value>0.05). Hemodynamic variables were comparable in three groups before insertion of devices whereas after insertion HR between ETT and PLMA were (96.87±18.10 vs 82.40), PLMA VS LTSII were (82.40±14.16 & 95.80±12.17) respectively (p value <0.005) and between LTSII and ETT were comparable. MAP between ETT VS PLMA were (115±17.16 & 85.83±18.44 respectively) p value <0.001, MAP between PLMA VS LTSII were comparable and between ETT VS LTSII(115±17.16 & 93.97±19.93) respectively p value <0.001.

**Conclusion**

Airway management with supraglottic devices like PLMA and LTSII did not rise hemodynamic in comparison to ETT. Time of insertion was less in ETT group where as postoperative complications were more in ETT group in comparison to PLMA and LTS II.

**Keywords:**

Endotracheal tube; Hemodynamic changes; Laryngeal tube suction II; Proseal LMA.
A Comparative study between supraclavicular and infraclavicular subclavian vein catheterization

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ABSTRACT
Introduction
This study performed a comparison between the infraclavicular and the supraclavicular approaches regarding the ease of insertion, depth of venipuncture, number of attempts to locate vein, time for insertion, overall success rate and complication rate.

Methodology
A prospective randomized comparative study was conducted which included 60 patients, divided into two groups, Group S and Group I in which SCV catheterization was done via supraclavicular and infraclavicular approach respectively. Maximum of 3 attempts in locating the SCV were made. Data recorded included depth of venipuncture, number of attempts, time for insertion, overall success rate and complication rate.

Results
The first attempt success rate was higher in group S (86.7%) as compared to Group I (63.3%) with p<0.05. The mean number of attempts was 1.20 ± 0.55 in Group S and 1.53 ± 0.78 in Group I. In Group S SCV was encountered at a shallower depth (2.63 ± 0.75cms) as compared to Group I (4.04 ± 0.76cms) with p<0.001. The overall success rate in Group S and group I was 93.30% and 86.7% respectively. The complication rate was similar in both groups being 3.3% in Group S and 6.6% in Group I.

Conclusion
Supraclavicular approach is easier to perform due to easily identifiable landmarks, shallower trajectory to the SCV and thus requires lesser number of attempts and has a similar complication rate to the infraclavicular approach.

Keywords:
Supraclavicular, subclavian vein(SCV), comparison, depth
Anesthetic management of a patient with Xeroderma Pigmentosa

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ABSTRACT

Xeroderma Pigmentosa (XP), a rare disease, characterized by skin hypersensitivity to ultra violet radiation, presents with multiple skin tumors and progressive neurological complications even at early childhood. We report a case of xeroderma pigmentosa, in a 12 year old male child with history of left eye exenteration. He presented with nasal ulceration and was planned for excision of basal cell carcinoma and skin grafting. He was anesthetized with TIVA using dexmedetomidine, propofol and fentanyl. We want to highlight the perioperative management of such patients requiring detailed neurological evaluation, shielding the patient from ultraviolet radiations (such as OT lights) by using clothing, sunscreen and ultra-violet blocking film apart from avoidance of volatile anaesthetic agents and muscle relaxants. Due to atrophic and neoplastic involvement of skin, contracture of joints and neuronal dysfunction, we must be prepared for difficult mask ventilation, difficult intubation along with difficult iv access.

Keywords:
basal cell carcinoma; dexmedetomidine; ultraviolet light; xeroderma pigmentosa
# List of Participants
## SANCON 2016

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Nepal Anesthesia CPT codes and relative base unit values

SAN with the assistance of CPT team have prepared preliminary Current Procedural Terminology (CPT) with Relative base unit values for our anesthesia services payment in Nepal.

It is based on workshop organized on anesthesia service payment system held on 10th October 2015 (23rd ashwin 2072), saturday at National Trauma Center, Kathmandu. The participants of the workshop were HOD of government hospitals or those institute running EHS services in the department of anesthesiology in Nepal.

CPT team members were nominated in the workshop to complete this task.

Current Procedural Terminology (CPT) with Relative base unit values are needed for new change in payment system in Nepal. It will respect our anesthesia specialty and the services provided by us as an anesthesiologist.

This system has following key points:

1. The different surgeries are categorized into four categories (category A, category B, category C category D ) with relative base unit values
2. Modifiers are included like : duration of anesthesia, age, ASA physical status, difficult airway, intraoperative additional procedure etc
3. Relative base unit values manual is made for anesthesia services like (basic consultation / round and other procedures), anesthesia outside operation room, academic role.

10 steps model is used to calculate the final payment for any anesthesiologist for his/her service.

1. determine the appropriate CPT code(s) from the category types (A– D)for the surgical procedure(s) performed.
2. determine the appropriate number of relative base units.
3. determine the appropriate number of time units.
4. assign the appropriate ASA physical status modifier.
5. assign the appropriate age modifier.
6. if applicable, assign the appropriate qualifying circumstance code(s).
7. determine the appropriate cpt code(s) for any additional procedures or postoperative pain services/critical care services performed.
8. determine the total units for the anesthesia services. (base units + time units + modifiers)
   e.g. appendectomy for 66 year male, ASA III, within 1 hour
   \[20\ u + 0\ u + 2\ u + 2\ u = 24\ u\]
9. determine the conversion factor (NRs per unit) based on the hospital. e.g 1 u = Rs 500
10. calculate the total anesthesia service charge
    \[\text{total anesthesia fee} = \text{total units} \times \text{conversion factor}\]
    e.g 24 u x Rs 500 = Rs. 12000
**Anesthesiologists sharing with hospital** (It will depend upon hospitals and anesthesiologist)

a. anesthesiologist: 70% = Rs 8400

b. hospital: 20 % = Rs 3600

There will not be gross change in total payment for anesthesiologist as compared to present scenario. The extra financial burden will not be added for the patients and hospitals too. This system will segregate from the surgeons charge and make our own payment system.

This is initial draft which may need modification every year after constructive suggestions from all within and outside Nepal.

**SAN CPT anesthesia team:**

Prof Dr Resham Bahadur Rana
Assoc Prof Dr Subhash Prasad Acharya
Assistant Prof Dr Diptesh Aryal
Assistant Prof Dr Navindra Raj Bista

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<td>3. Stitch Removal</td>
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<td>4. Excision/Incision Biopsy</td>
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<td>5. Fistula/Sinus excision</td>
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<td>6. D&amp;C/ MVA</td>
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<td>7. Closed Reduction of simple fractures/joint dislocation</td>
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<td>8. Implant Removal</td>
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<td>10. Soft tissue cyst excision</td>
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<td>11. GI/Cervical Polypectomy</td>
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<td>14. Circumcision</td>
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<td>15. AV fistula construction</td>
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<td>16. Vasectomy</td>
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II. Category B 20 Units

1. Laparotomy (open)
2. Diagnostic Laparoscopy
3. Colostomy/Ileostomy
4. GI/Hepatobiliary laparoscopic procedures
5. Appendectomy
6. Pediatric genitourinary surgeries
7. Testicular surgeries
8. PSARP/ASARP/Rectopexy
9. Gynecologic surgeries (open)
10. Gynecologic surgeries (laparoscopic)
11. Hernia repair
12. External and Middle Ear surgeries
13. Nose and Throat procedures
14. Sinus Surgeries
15. Cosmetic/Plastic Surgeries
16. Diagnostic Cystoscopy
17. Prostate/Urinary Bladder surgeries (nonmalignant)
18. PCNL and equivalent
19. Nephrectomy
20. Ureteric procedures
21. Adrenallecctomy
22. Pyelo/Urethro-plasty
23. Cesarean Sections
24. Skin graft
25. Flap reconstruction
26. Cleft lip and palate repair
27. Head, Neck and Oro-facial surgeries
28. Breast/breast lump surgeries
29. Thyroidectomy
30. Upper and Lower GI endoscopic procedures
31. ERCP
32. Hysteroscopic procedures
33. Direct Laryngoscopy and biopsy/FB removal
34. Open Tracheostomy
35. Cataract surgeries
36. Eye procedures/surgeries
37. Fracture open reduction and repair/fixation
38. Fracture closed reduction and fixation
39. Fracture plating/nailing
40. Ligament tear repair
41. Arthrodesis
42. Arthroplasty
43. Debridement
44. Secondary Suturing
45. Burr Hole
46. VP shunt insertion/removal
47. Radiological Suite procedures

**III. Category C**

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<tr>
<td>3</td>
<td>Urological malignancy surgeries</td>
</tr>
<tr>
<td>4</td>
<td>Mandible and Maxillary Fracture Fixation/Reconstruction</td>
</tr>
<tr>
<td>5</td>
<td>Mastectomy</td>
</tr>
<tr>
<td>6</td>
<td>Rigid bronchoscopy and procedures</td>
</tr>
<tr>
<td>7</td>
<td>Esophageal Surgeries</td>
</tr>
<tr>
<td>8</td>
<td>Tracheo-esophageal fistula closure</td>
</tr>
<tr>
<td>9</td>
<td>Joint replacement surgeries</td>
</tr>
<tr>
<td>10</td>
<td>Spine fusion/laminectomy/discectomy/instrumentation</td>
</tr>
<tr>
<td>11</td>
<td>Limb re-implantation</td>
</tr>
<tr>
<td>12</td>
<td>GI anastomosis and resection surgeries (non-malignant)</td>
</tr>
<tr>
<td>13</td>
<td>Splenectomy</td>
</tr>
<tr>
<td>14</td>
<td>Donor Nephrectomy</td>
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</table>

**25 Units**
<table>
<thead>
<tr>
<th>IV. Category D</th>
<th>30 - 50 Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GI Malignancy Surgeries</td>
<td>30 U</td>
</tr>
<tr>
<td>2. Pancreatectomy / Whipples / Freys</td>
<td>35 U</td>
</tr>
<tr>
<td>3. Hepatic Resection</td>
<td>40 U</td>
</tr>
<tr>
<td>4. Tracheal Repair/Reconstruction</td>
<td>45 U</td>
</tr>
<tr>
<td>5. Thoracotomy and Lung surgeries</td>
<td>45 U</td>
</tr>
<tr>
<td>6. VATS</td>
<td>40 U</td>
</tr>
<tr>
<td>7. Craniotomy/Cranioplasty</td>
<td>40 U</td>
</tr>
<tr>
<td>8. Vascular surgeries for intracranial vessels</td>
<td>45 U</td>
</tr>
<tr>
<td>9. Transplant Surgeries - Renal</td>
<td>45 U</td>
</tr>
<tr>
<td>10. Adrenalectomy for Pheochromocytoma</td>
<td>40 U</td>
</tr>
<tr>
<td>11. Transplant Surgery – Liver and other organ</td>
<td>50 U</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>V. Category E</th>
<th>40 - 80 Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiac and vascular surgery</strong></td>
<td></td>
</tr>
<tr>
<td>1. Closed heart surgery (PDA, Pericardioctomy)</td>
<td>40 U</td>
</tr>
<tr>
<td>2. Closed heart surgery (Pericardioctomy, Closed Mitral Commissurotomy, shunt and band procedures)</td>
<td>50 U</td>
</tr>
<tr>
<td>3. Open heart surgery I (simple acyanotic congenital heart surgery, single valve surgery)</td>
<td>60 U</td>
</tr>
<tr>
<td>4. Open Heart Surgery II (CABG, Double valve surgery, Complex congenital Surgery)</td>
<td>65 U</td>
</tr>
<tr>
<td>5. Simple aortic surgery</td>
<td>50 U</td>
</tr>
<tr>
<td>6. Aortic Surgery with cardiopulmonary bypass</td>
<td>65 U</td>
</tr>
<tr>
<td>7. Any procedure under Deep Hypothermic Circulatory Arrest</td>
<td>70 U</td>
</tr>
<tr>
<td>8. Hybrid Cardiac Procedures</td>
<td>80 U</td>
</tr>
<tr>
<td>9. Carotid Surgery</td>
<td>45 U</td>
</tr>
<tr>
<td>10. Peripheral vascular surgery</td>
<td>40 U</td>
</tr>
</tbody>
</table>
MODIFIERS:

ADD 5 U FOR DIFFICULT AIRWAY

ADD 5 U FOR EACH INTRAOPERATIVE ADDITIONAL PROCEDURE – CENTRAL VENOUS CATHETER, EPIDURAL CATHETER

BASE VALUE IS FOR 60 MINUTES. ADD 2 U FOR EVERY ADDITIONAL 30 MINUTES

ADD 8 U FOR NEONATES < 60 weeks POG

ADD 5 U FOR AGE <1 YEAR

ADD 2 U FOR AGE > 1 AND <15 YEAR

ADD 2 U FOR AGE > 65

ADD 2 U FOR ASA III

ADD 5 U FOR ASA IV OR MORE

ADD 2 U FOR EMERGENCY SURGERY AT DAY TIME 06:00 – 20:00

ADD 5 U FOR EMERGENCY SURGERY AT NIGHT TIME 20:00 – 06:00

ADD 2 U FOR ASSOCIATE PROFESSOR / CONSULTANT (Post MD > 5 yrs)

ADD 5 U FOR PROFESSOR / SENIOR CONSULTANT (Post MD > 10 yrs)

Anesthesia Procedures CPT:

1. Basic Consultation / Round:
   a. Anesthesia Consultation / Visit / Round 1 U
   b. Pre-Anesthesia Consultation / Round 1 U
   c. Post Operative Care Consultation / Round 1 U
   d. Pre Anesthesia Checkup / Workup 2 U
   e. Intensive Care Unit Consultation / Round 2 U
   f. Pain Management Consultation / Round 2 U
   g. Neuro Anesthetist Consultation / Round 2 U
   h. Pediatric Anesthetist Consultation / Round 2 U
   i. Cardiac anesthetist consultation/round 2 U

2. Procedures:
   i. Peripheral Intravenous Access 2 U
   ii. Peripherally Inserted Central Catheter (PICC) line 12 U
   iii. Central Venous Catheterization 10 U
   iv. USG Guided Central Venous Catheterization 12 U
   v. Arterial Line Insertion 8 U
   vi. Dialysis Catheter Insertion 10 U
   vii. Lumber Puncture 10 U
viii. USG Guided Dialysis Catheter Insertion 12 U
ix. Chest Tube Insertion 15 U
x. Intubation 10 U
xi. Extubation 5 U
xii. Difficult Airway Management in ICU (Anticipated) 5 U
xiii. Basic Mechanical Ventilator Setup 8 U
xiv. Advanced Mechanical Ventilator Setup 10 U
xv. Bronchoscopy (Diagnostic) 15 U
xvi. Bronchoscopy (Therapeutic) 20 U
xvii. Percutaneous Tracheostomy 50 U
xviii. USG Guided Procedure 2 U
xix. Point of Care USG 4 U
xx. FAST Scan 4 U
xxi. Point of Care Echocardiography (Screening) 4 U
xxii. Permanent tunneled Dialysis Catheter (Perm cath) insertion: 20 U
xxiii. Intraoperative Transesophageal Echocardiography: 10 U
xxiv. Cardiac MAC (Cath Lab procedures): 15 U + fluoro 4 U
xxv. Anesthesia for device closure of heart defects: 30 U

3. Anesthesia Outside Operation Room:
   a. Sedation/Anesthesia for CT Scan 15 U
   b. Sedation/Anesthesia for MRI 20 U
   c. Sedation/Anesthesia for Endoscopic Procedures 20 U

4. Academic Role (BY REGISTRAR / LECTURER)
   i. Class of 1 hour duration 10 U
   ii. Class of 2 hour duration 12 U
   iii. Workshop half day 15 U
   iv. Workshop full day 20 U

ADD 2 U FOR ASSOCIATE PROFESSOR / CONSULTANT (Post MD > 5 yrs)
ADD 5 U FOR PROFESSOR / SENIOR CONSULTANT (Post MD > 10 yrs)
Types of Anesthesia

1. Local Anesthesia
2. Regional anesthesia
   a. Peripheral nerve blocks
   b. Epidural Anesthesia
   c. Spinal Anesthesia
3. Monitored Anesthesia Care (MAC)
4. General Anesthesia

10 Steps

1. Determine the appropriate CPT code(s) from the category types (A – D) for the surgical procedure(s) performed.
2. Determine the appropriate number of base units.
3. Determine the appropriate number of time units.
4. Assign the appropriate ASA physical status modifier.
5. Assign the appropriate age modifier.
6. If applicable, assign the appropriate qualifying circumstance code(s).
7. Determine the appropriate CPT code(s) for any additional procedures or postoperative pain services/critical care services performed.
8. Determine the total units for the anesthesia services.
   (Base Units + Time Units + Modifiers)
   E.g. Appendectomy for 66 year male, ASA III, within 1 hour
   \[ 20 \, \text{U} + 0 \, \text{U} + 2 \, \text{U} + 2 \, \text{U} = 24 \, \text{U} \]
9. Determine the conversion factor (NRs per Unit) based on the hospital. E.g 1 U = Rs 500
10. Calculate the Total Anesthesia Service Charge
    Total Anesthesia Fee = Total Unit x Conversion Factor
    E.g 24 U x Rs 500 = Rs. 12000
11. Anesthesiologists Sharing with hospital:
    a. Anesthesiologist: 70% = Rs 8400
    b. Hospital: 20% = Rs 3600

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- Obs/Gynaecology
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- Ambulance

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Paying OPD

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- Orthopedic and Trauma
- Physiotherapy
- General Surgery
- Paediatric
- Psychiatry
- Radiology
- ENT
- Dental
- Ophthalmology
- Dermatology and STI
- Echo

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- PCL Nursing

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- Well equipped pathological laboratories
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- Cafeteria

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Academy: 01-4910598; 4913288  
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<thead>
<tr>
<th>BL+BLI’s</th>
<th>PENEMS</th>
<th>MACROLIDE</th>
<th>LINCOSAMIDE</th>
<th>MONOBACTAM</th>
<th>QUINOLONES</th>
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<tbody>
<tr>
<td>Sulbactomax</td>
<td>Pisa</td>
<td>Ronem</td>
<td>Actimycin</td>
<td>Clindol</td>
<td>Azotum</td>
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<tr>
<td>Supine</td>
<td>Last/Inem</td>
<td>Moximycin</td>
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<td>Sensitive</td>
<td>European GMP</td>
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<td>For improved efficacy</td>
<td>Cabapenem</td>
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<td><em>Improved efficacy...</em></td>
<td><em>Cabapenem</em></td>
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<tr>
<td>For improved performance &amp; compatibility</td>
<td>European GMP</td>
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<tr>
<td>Preserves Pm &amp; Tackles Resistance</td>
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<tr>
<td>Protection against antibiotic resistance</td>
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