### A027 Comparison of Airtraq and Fiberoptic-Guided Intubation in the Presence of Rigid Cervical Collar Simulating Cervical Immobilization in Cervical Spine Surgery

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**Introduction:** Fiberopticbronchoscopy (FOB)-guided tracheal intubation remains the gold standard for the management of difficult airway, but its use may be limited by availability, lack of expertise, and additional time for bronchoscopy. Airtraq videolaryngoscope provides view of glottis without aligning oral, pharyngeal, and laryngeal axes.

**Aim:** To test whether Airtraq provides better intubating conditions over FOB.

**Methodology/Description:** After approval from ethics committee and written informed consent, comparative randomized intervention study was conducted. Forty-four patients were randomly assigned to receive oral intubation by Airtraq or fiberoptic. In all these patients, neck was immobilized with rigid cervical collar. We compared two airway devices for time to intubate, success rate of intubation, glottis view using Cormack and Lehane scoring system, hemodynamic changes, and postoperative complications. Patients who were obese, at risk of gastric aspiration, Mallampati class 3 or 4, thyromental distance < 6 cm, interincisor gap < 3.5 cm were excluded.

**Results:** Airtraq-guided intubation in simulated cervical spine injury patients required significantly shorter time for laryngoscopy (14.64 +/− 8.38 vs. 23.45 +/− 7.998) and intubation as compared with fiberoptic-guided intubation (29.95 +/− 4.61 sec vs. 38.73 +/− 11.752 sec). Both the techniques were comparable in terms of success rate of intubation, glottis view, and hemodynamics.

**Conclusion:** Airtraq videolaryngoscope can be successfully used as alternative to FOB in cervical spine injury patients.

**Keywords:** videolaryngoscope, fiberoptic-guided intubation, bronchoscopy

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### A028 Effect of Desflurane versus Propofol on ECoG Spikes in ECoG-Guided Intractable Epilepsy Surgery: Prospective Randomized Controlled Study

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**Introduction:** General anesthesia, routinely used in electrocorticography (ECoG)-guided resection of epileptic foci, requires more vigilance as intermittent period of lightened anesthesia is needed to elicit good ECoG waveforms. This is novel research to evaluate the efficacy of desflurane versus propofol in low sedating dose, having least interference with ECoG waveforms and outcome.

**Methodology/Description:** This is a randomized controlled study conducted with ethics committee permission and informed consent. Thirty-two patients with intractable epilepsy between 7 and 65 years and good neuropsychological assessment (IQ > 70) were included. Plane of anesthesia was lightened to facilitate ECoG recording with target MAC 0.3 to 0.4 in desflurane (D) group and propofol 25 to 75 µg/kg/min in propofol (P) group with bispectral index (BIS) of 50 to 70. ECoG recording is assessed by its onset and total duration. Withdrawal criteria were intraoperative seizures or no spikes with rescue being propofol bolus.

**Results:** Demographic data were comparable. ECoG onset was significantly early in P group being 3.25 minutes versus 7.67 minutes in D group ($p < 0.0001$). ECoG was satisfactory in all patients in P group, while two patients in D group were withdrawn due to no spike. Average total ECoG duration was higher in D group with 17.19 minutes versus 11.88 minutes in P group ($p < 0.001$). BIS was comparable in both groups ($p > 0.05$). Mean emergence time in P group was almost double that of D group (16 min). No postoperative recall was detected in any group when assessed by modified Brice questionnaire.

**Conclusion:** Optimal and early ECoG recording was better elicited with propofol as compared with desflurane.

**Keywords:** ECoG, anesthesia, intraoperative seizures

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### A029 Low Flow Techniques with Desflurane for Neurosurgical Procedures: A Randomized Comparative Study

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**Introduction:** With the advent of modern anesthesia workstations and monitoring system, it has been possible to:

1. Detect and prevent delivery of hypoxic gas mixture to the patient under anesthesia,
2. Assess adequacy of ventilation,
3. Hemodynamic stability, and
4. Emergence characteristics, using Low flow techniques.

The pharmacokinetics of desflurane makes it a preferred inhalational agent with low flow techniques. However, vigilance of the anesthesiologist is of prime importance.

**Methodology/Description:** After approval of institutional ethics committee and informed consent, 60 ASA I/II patients undergoing elective neurosurgical procedures were divided randomly into two equal groups to receive general anesthesia with low (1L) and medium (1.5 L) fresh gas flow (50% $O_2$ and 50% $N_2O$). Intraoperative monitoring of hemodynamic parameters and respiratory gases was done and noted at fixed intervals. Statistical analysis of data was done using SPSS.

**Results:** Demographic data was comparable in both the groups. Hemodynamic parameters at laryngoscopy, change of flows, and emergence were within physiological range. Hemodynamic stability was not affected by change in flows in both the groups. During maintenance, fraction of inspired oxygen ($FiO_2$) decreased gradually, but at no time interval, delivery of hypoxic gas mixture ($FiO_2$< 30%) was observed. Time taken for extubation was comparable in both the groups.

**Conclusion:** With vigilant monitoring of respiratory gases and hemodynamic parameters, and timely interventions for change of flows, dial settings, etc., the threat of delivery of hypoxic gas mixture in low-flow anesthesia can be totally eliminated. This technique with all its advantages can be used safely in neurosurgical cases.

**Keywords:** fraction of inspired oxygen, anesthesia, hemodynamic parameters

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## A030 An Evaluation of Procedural Sedation Techniques in Duchenne Muscular Dystrophy Patients Undergoing Stem Cell Therapy

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**Introduction:** Anesthesia in Duchenne muscular dystrophy (DMD) poses many challenges, because of poor cardiorespiratory function, weak airway muscles, macroglossia, or obstructive sleep apnea. The present study was undertaken to evaluate safety as well as efficacy of procedural sedation techniques, and to assess the effect on hemodynamic and respiratory parameters in patients of DMD.

**Methodology/Description:** The present prospective, observational study was performed in 54 consecutive male patients of DMD presenting for stem cell therapy. After institutional ethics committee approval, patients coming for elective bone marrow aspiration and intrathecal catheterization as a part of stem cell therapy with age > 5 years were included. Patients unwilling for consent and patients requiring general anesthesia were excluded. Drugs and dosages used were noted. Hemodynamic parameters were noted every 5 minutes. Sedation levels were monitored using Ramsay sedation score every 10 minutes. Statistical analysis was done using the unpaired "*t*" test and *p* value of < 0.05 was considered significant.

**Results:** The age range was from 6 to 32 years with average of 11.59 years. Most commonly used drugs for procedural sedation were midazolam, dexmedetomidine infusion, and ketamine. Hemodynamic stability was maintained in all patients. Respiratory rate and end-tidal $CO_2$ were maintained close to baseline ($p$ > 0.05). No cardiorespiratory adverse events were noted.

**Conclusion:** Dexmedetomidine and ketamine provide good procedural sedation without causing cardiorespiratory depression, maintain airway reflexes, and offer adequate analgesia along with local anesthesia. The study subject draws attention to an often-neglected area and has scope for change in future practice.

**Keywords:** Duchenne muscular dystrophy, procedural sedation, cardiorespiratory depression

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## A031 Effectiveness of Three Regimes of Sedation in Children for Magnetic Resonance Imaging: A Clinical Trial

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**Introduction:** Dexmedetomidine, an $\alpha_2$ agonist is extensively used for pediatric magnetic resonance imaging (MRI) sedation, but is known to cause prolonged recovery when used as a sole sedative agent. Stand-alone propofol can cause hypotension and respiratory depression at times. A new regimen exploiting the properties of these drugs was considered to allow faster recovery and minimize adverse events.

**Methodology/Description:** One hundred fifty children between the age of 2 and 12 years were randomly allocated to any of the three groups. Group receiving dexmedetomidine bolus and infusion (group D, $n$ = 50) or propofol bolus and infusion (group P, $n$ = 50) or group receiving propofol bolus followed by dexmedetomidine infusion (group PD, $n$ = 50) for sedation. Effectiveness of these regimens was assessed with respect to recovery characteristics, hemodynamics, and respiratory parameters.