Pediatric fiberoptic intubation: Another challenge... another approach!!

Sir,

Temporomandibular joint (TMJ) ankylosis is a difficult airway situation. Awake fiberoptic intubation with regional blocks is the gold standard, but patient's cooperation is the key, so it may not be an ideal technique in children. We report a scenario where a difficulty during fiberoptic intubation was successfully managed with a unique approach not reported before.

An 8-year-old male child with bilateral TMJ ankylosis was posted for surgical correction. On airway examination, the mandible was completely immobile and mouth opening nil. Furthermore, the child had mal-aligned dentition. Nasal patency test was carried out and left nostril was found to be more patent than the right one.

Fiberoptic intubation was planned, but the child was uncooperative and refused any awake procedure. It was then decided to induce general anesthesia with oxygen and sevoflurane using facemask. A lubricated nasopharyngeal airway (NPA) (made by cutting short an uncuffed endotracheal tube (Portex, Smiths Medical, UK) 4.5 mm ID) was selected to deliver anesthetic gases, but we were unable to insert it through the right nostril due to reduced patency. Attempt of insertion with a smaller one also failed. The situation posed a challenge as the child had to be anesthetized and only one nostril was patent through which fiberoptic bronchoscope (FOB) had to be inserted. A gap between the mal-aligned teeth was noticed, and a cut endotracheal tube (size 4.0 mm ID) was inserted through it. After pinching nostrils and pursing the lips around the tube [Figure 1], a good seal could be achieved, and patient's ventilation could be conducted to the reservoir bag and capnograph was also obtained. After an adequate anesthetic depth was achieved with oxygen and sevoflurane, FOB was inserted through the left nostril (with the right one pinched) and trachea was successfully intubated. Injection fentanyl and atracurium were given intravenously. The surgical procedure was begun and the patient was extubated awake at the end.

Different combinations and techniques using FOB are used:[1]

- Combined rigid laryngoscope — FOB technique: If the mouth opening is wide enough.

- Combined NPA–FOB technique: Involves administration of oxygen and general anesthesia through an (intact) NPA in one nostril and the FOB can be introduced orally or from the opposite nasal passage.

- Combined endoscopy mask–FOB: Endoscopy mask has a single port for administration of oxygen and anesthetic gases and another port with an insertion diaphragm wide enough to allow passage of ETT and FOB.

- Intubation with FOB through the laryngeal mask airway, intubating laryngeal mask, and air-Q.

The selection of the proper technique depends on patient's airway and the availability of equipments of pediatric size. Cases are reported where the conventional techniques have been successfully modified due to nonavailability or malfunctioning of appropriate size equipment or due to an unanticipated difficulty during fiberoptic intubation.[2]

In our case, due to unavailability of pediatric endoscopy mask, we had initially planned for a combination of NPA and FOB, but the difficulty in insertion of NPA through the nostril led us to an alteration in approach by inserting an oropharyngeal tube through the gap between the teeth.

Figure 1: Induction of general anesthesia through an oropharyngeal tube prior to fiberoptic intubation (nostrils are pinched for proper seal)
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REFERENCES
1. Katherine SL, Gil MD. Guide to airway management: Fiberoptic intubation: Advanced combinations for more success and less morbidity. Anesthesiol News 2011;37:49-56.
2. Naithani M, Jain A, Chaudhary Z. Intubation in a pediatric difficult airway using an adult flexible fiber-optic bronchoscope and a j-tipped guidewire: An innovation in adversity. Saudi J Anaesth 2011;5:414–6.

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Safe anesthesia management protocol of a child with congenital long QT syndrome and deafness (Jervell and lange-nielsen syndrome) for cochlear implant surgery

Sir,

Jervell and Lange-Nielsen syndrome (JLNS) is an autosomal recessive variant of congenital long QT syndrome (c-LQTS) associated with deafness.[1,2] These patients are predisposed to polymorphic ventricular tachycardia (torsades de pointes [TdP]) leading to syncope and sudden death. Surgical stress in the perioperative period and general anesthesia per se may trigger fatal arrhythmia.[1,2]

A 2-year-old, weighing 10 kg, male child with congenital deafness was scheduled for cochlear implant surgery. There was no history of seizure, cyanosis or syncope, but one sibling had sudden death at 3 months of age. Electrocardiography (ECG) revealed prolonged QT interval (QTc 519 ms). He was diagnosed with JLNS and tablet propanolol 10 mg twice daily was started. Hematology, blood biochemistry, chest X-ray, and echocardiography were normal.

On the day of surgery, he was premedicated with oral midazolam 5 mg and eutectic mixture of local anesthetics (EMLA) was applied on the left dorsum. After 45 min an intravenous 22G canula was inserted with the child in mother’s lap. He was shifted inside the operating room (OR) accompanied by mother. Standard monitors and debrillator-cum-transcutaneous pacer pads were placed. Anesthesia was induced with fentanyl 30 mcg, propofol 25 mg and vecuronium 1 mg and trachea was intubated with 5.0 mm uncuffed endotracheal tube. Anesthesia was maintained with O2:N2O 50:50 with isoflurane (minimum alveolar concentration 1-1.2). Dexamethasone 2 mg was given intravenously. Analgesia was provided with infusion fentanyl at 15 mcg/h and intravenous paracetamol 150 mg. Magnesium sulfate was kept ready. Surgery lasted for 3 h and intraoperative vitals were stable. At the end, neuromuscular block was reversed with neostigmine and glycopyrrolate and trachea was extubated when the child was awake. Patient was kept in a quiet area in postanesthesia care unit with continuous ECG monitoring with defibrillator pads placed in situ. Postoperative analgesia was provided with intermittent morphine 0.5 mg boluses and intravenous paracetamol 150 mg every 6 h. Subsequent postoperative course was uneventful and child was discharged after 10 days.

Children with congenital deafness coming for cochlear implant surgery may be associated with various syndromes and c-LQTS may be one of them.[3] Any history of sudden cardiac death in a sibling like in the present case; a history of syncope or a diagnosis of epilepsy should arouse suspicion...
