Use of CobraPLA® for management of difficult airway in two infants.

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Introduction: There are multiple reports of management of difficult airway in infants, which include different intubation methods (awake, blind, digital, fiberoptic intubation, trachlite,) and use of LMA. We are presenting the first two difficult airway cases managed successfully with a new supraglottic device: CobraPLA.

Case # 1

A three weeks old male with a diagnosis of Desbuquois syndrome, weighing 2.3 kg was scheduled to undergo G-button placement for feeding access. He was born at 36 weeks with multiple congenital anomalies: flat face, hypoplastic midfacies, pectum carinatum, congenital dislocation of knees and elbows, subluxation of C5-6 and S2-3, overlapping digits, hypoplastic thumbs, and great toes. Chest x-ray and CT showed normal lungs and a deformed thorax. Heart ECHO revealed dextroposition, with normal 4 chambers and moderate to severe tricuspid regurgitation with near systemic pulmonary pressures. A modified barium swallow showed dis-coordinated swallowing without gastro esophageal reflux and normal gastric emptying. Preoperatively the patient had a large face, microstomia, micrognathia, short neck and small, deformed chest and sternum (Fig). Anesthesia was induced with sevoflurane in 100% O_2 and propofol (1mg/kg). A half size CobraPLA was easily inserted; and ventilation was possible with peak pressures of 22 cm H_2O. The CobraPLA was removed 5 minutes after the surgery was finished without any complications. The postoperative course was uneventful.

Case #2

A 10 year old male, 20 kg with a history of Freeman-Sheldon syndrome presented for dental extractions under general anesthesia. Previous anesthetic records revealed that he was impossible to intubate in a conventional manner. Currently his airway exam showed a Mallampati class III-IV airway with extreme limitation of his neck extension and microstomia. Anesthesia was induced and maintained with propofol and remifentanil. A CobraPLA #1.5 was easily inserted and ventilation was possible with peak pressures of 20 cmH_2O. At the end of the procedure the CobraPLA was removed without any complications.

Discussions

The perilaryngeal airway (CobraPLA® EMS, Indianapolis, IN) was introduced to practice recently. The CobraPLA is comprised of a breathing tube with a wide distal end; a cuff is attached just proximal to the wide part and serves to seal off the distal end from the upper airway, thereby allowing positive pressure ventilation to be administered. Once in place, it abuts directly against the aryepiglottic folds with the anterior wall holding the epiglottis out of the way. The distal end has a number of bars that allow ventilation. The CobraPLA is a single use device and is manufactured in eight sizes with 4 of them suitable for pediatric patients (0.5, 1, 1.5, 2). In a recent study in adults Akca et al (1) find the CobraPLA having insertion and recovery characteristics similar to the LMA, but better airway sealing capabilities, which improve the ability to provide mechanical ventilation.

Desbuquois syndrome is a micromelic dwarfism with microstomia and micrognathia as major causes for difficult airway management. This is the first anesthetic description of this syndrome in the literature.

Freeman-Sheldon syndrome is a rare congenital disorder defined by microstomia, camptodactyly and talipes equinovarus. Anesthetic challenges including difficult airway management, intravenous cannulation, and regional technique and association with malignant hyperthermia . Oral fiberoptic intubation is considered the preferred airway management technique but LMA has been used successfully [2] in one case after direct laryngoscopy proved to be impossible [3].

We used the CobraPLA in over 100 pediatric cases with excellent results; this is why we felt comfortable to use it in these patients with difficult airway. In conclusion, the CobraPLA proved to be a useful device in the management of our two patients with difficult airway.

Refs:

1. Akca O et al. ASA Meeting, San Francisco, CA, 2003. A-566.
2. Cruickshanks GF, et al. Can J Anaesth. 1999;46(8):783-7.
3. Munro et al. Paediatr Anaesth. 1997;7(4):345-8.