EDITORIAL

Simple Tips for Anesthesia for Esophageal Surgery in Pediatric Patients with Profound Benefits

Irrespective of the esophageal pathology a patient for surgery of this organ requires anesthetist's special attention. This is true for preoperative assessment, intra operative management and postoperative care. If we exemplify some congenital conditions like esophageal atresia, esophageal web, fistula, gastro esophageal reflux (GER), hiatal hernia, congenital esophageal stenosis, extrinsic pressure from abnormal blood vessel or pressure from enteric duplication, all these conditions have various specific reasons why a thorough pre anesthetic assessment and an exhaustive intra operative anesthetic management will be necessary. Similarly, acquired pathology like esophageal stricture from caustic burns, from neglected gastro-esophageal-reflux or an impacted foreign body, dictates especial attention for assessment and intra operative precautionary measures.

In almost all conditions that have been mentioned above, there exists variable extent of obstruction and there are pent up secretions. These often result in varying degree of pulmonary injury due to spill over into the tracheo-bronchial tree. The same problem may be seen in these cases due to reflux of gastric contents which may result in acute pneumonitis, hypostatic pneumonia, empymea and pulmonary fibrosis of varying degree.

This has profound adverse effect on respiratory function, hence requiring proper preoperative assessment and modifications in intra operative technique.

For preoperative preparation, physiotherapy, postural drainage of tracheo-bronchial secretions, culture and sensitivity tests and use of appropriate antibiotics and bronchodilators are some of the important considerations.

In addition, in these patients nutritional deprivation and anemia is not uncommon. This is frequently present in long standing esophageal conditions like GER and indolent esophageal stricture. Here it is important to correct the anemia and improvement of nutritional status is highly desirable before embarking upon a major surgical procedure. This measure is necessary to allow optimal intra operative fitness and post operative recovery. In case of emergency where surgery can not be postponed and inhalation of gastric contents has occurred, use of steroids, broncho-dilators and expedient establishment of proper airway is often life saving.

Moreover, in infants and small children intra abdominal pressure is high and cardio esophageal sphincter is incompetent. Hence and during induction of anesthesia regurgitation of gastric contents is frequent. Therefore, proper functioning suction apparatus should be at hand for such an eventuality. Surface oximetry should now be considered an essential parameter to check tissue perfusion as well as for making adjustments to correct hypoxemia during surgery.

In postoperative period provision of clear airway and ensuring proper perfusion is also important in healing and over all recovery of the patient. Most importantly, interaction of anesthetic and surgical team is mandatory to allow optimal outcome.

Although the measures that have been mentioned above may be repetition of established

teaching principles, but ignoring these facts may result in disastrous complications with far reaching adverse effects, especially on the pulmonary function of the child.

RECOMMENDED READING:

1. Frank W Dupont, IL Seminars in Cardiothoracic and Vascular Anesthesia, Vol. 4, No. 1, 2-17 (2000), Department of Anesthesia and Critical Care, University of Chicago, Chicago.
2. Gregory GA, editor: Pediatric Anesthesia, ed 2, vols 1 and 2, New York, 1990, Churchill-Livingstone.
3. Lewis Spitz, Achalasia Page 333. Rob & Smith's, Pediatric Surgery, 5th Edition, 1995, Chapman & Hall.
4. Desoto H, Patel RI, Soliman IE, Hannallah RS: Changes in oxygen saturation following general anesthesia in children with upper respiratory infection signs and symptoms undergoing otolaryngological procedures. Anesthesiology 1988;68:276-279.
5. Tait R, Knight PR, Intraoperative respiratory complications in patients with upper respiratory tract infections. Can J Anesth 1987;34:3300-3303.
6. Deckhart R, Steward DJ: Noninvasive arterial hemoglobin oxygen saturation versus transcutaneous oxygen tension monitoring in the preterm infant. Crit Care Med 1984;12:935-939.
7. Rao CC, Krishna G, Grosfeld, II, Weber TR; One lung pediatric Anesthesia. Anesth Analg 1981;60(6):150.
8. Morray JP, Krane EJ; Anesthesia for thoracic surgery. In Gregory GA, ed. Pediatric Anestheisa, 2nd ed. New York: Churchill Livingstone, 1989.

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