The Most Important Cause of Stridor in Infants: A Case of Laryngomalacia

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Background:

Laryngomalacia is the most common congenital malformation of the larynx which causes stridor in infants. The stridor is inspiratory, musical, vibrating and usually develops first 10 days of life. Dyspnea with permanent and severe intercostal or xyphoid retraction, poor weight gain are the other symptoms (1).

The aryepiglottoplasty or epiglottoplasty are the surgery methods in severe cases. General or intravenous anesthesia with spontaneous ventilation is selected in short term surgeries while the controlled ventilation is performed for longtime operations.

In this report we aimed to discuss our anesthesia management of 2 months old baby with laryngomalacia.

Case Report:

The patient was 3.5kg, 2 months old, male, ASA-II.

He had stridor, poor weight gain and feeding difficulties in his history. After parental consent, he was taken to the operation room for diagnosis with flexible laryngoscopy and aryepiglottoplasty surgery.

Since the long operation was planned by the surgeon, general anesthesia with controlled ventilation was chosen for anesthesia method. The patient was monitored with noninvasive blood pressure (NIBP), electrocardiography (ECG), peripheral oxygen saturation (SpO₂), end tidal carbon dioxide (ETCO₂) and body temperature.

In the operating room, the haemorespiratuar parameters were normal. After induction of anesthesia, laryngoscopy was performed. The epiglottis was observed long and aryepiglottic folds were seen short with flaccid mucosa.

Vocal cords could not viewed easily. Endotracheal intubation was performed after third attempt with a size of 2.5 cuffed tube.

General anaesthesia was started with sevoflurane 1,5% concentration in Air/O₂ (50%/50%) mixture.

Anesthesia was performed with low tidal volume and high frequency with manually.

Aryepiglottoplasty was performed as an excision of offending part of aryepiglottic folds with microlaryngeal scissors (Figure 1,2).

At the end of operation the patient extubated succesfully in the operation theatre and taken to the postoperative care unit.

No complications were observed and the patient was sent to the ward.

Discussion:

Most forms of laryngomalacia are minor (70%) causing isolated stridor with no changes of crying or coughing, no dyspnoea.

However 10 to 20% of the cases present signs of upper airway obstruction and require surgical therapy under anesthesia. Surgery should be proposed if laryngomalacia associated with dyspnoea with permanent or severe intercostal retraction, episodes of respiratory distress or obstructive sleep apne.

The important part of anesthetic management for this cases include good communication and harmony with surgeon, suitable anesthesia depth, careful intraoperative monitoring and prepared for postoperative complications such as haemorrhage, laryngeal spasm and laryngeal edema.

References:

1.European Annals of Otorhinolaryngology,Head and Neck disease (2013);130:15-21

Learning points:

Working in a harmony with surgeon is a key point in laryngomalacia surgery.

Figure 1,2 : Aryepiglottoplasty performed by surgeon