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CASE REPORT

Surgical Management of Severe Case of Laryngomalacia

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ABSTRACT

Incidence of congenital laryngeal anomalies is between 1:10,000 and 1:50,000 births. Laryngomalacia is the most common cause of congenital stridor, characterized by partial or complete collapse of the supraglottic structures during inspiration. Patient was having inspiratory stridor at birth or immediately after birth. No active intervention is required in 90% of cases. So we are reporting this rare case that required active intervention and will also show how we managed it.

Keywords: Aryepiglottoplasty, Laryngomalacia, Stridor.

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INTRODUCTION

Laryngomalacia is the most common congenital cause of stridor. It is a structural abnormality where epiglottis is long and curled (omega-shaped); the aryepiglottic folds are tall, bulky, short anteroposteriorly, and tightly tethered to the epiglottis. This results in tall, narrow supraglottis with deep interarytenoid cleft. Soft epiglottis may curl and collapse. The redundant mucosa and submucosa of aryepiglottic fold may prolapse anteromedially into the airway.

The characteristic high-pitched, fluttering inspiratory stridor is usually present at, or shortly after, birth – typically being most noticeable when the infant is active or upset and may disappear when the child is asleep. The severity of the stridor tends to increase as the child becomes more active during the first 9 months of life, and then gradually diminishes until by the age of 2 years it has generally disappeared. Very rarely, stridor may persist in late childhood.

The diagnosis can be confirmed in the outpatient clinic by flexible fiberoptic laryngoscopy. The supraglottic collapse on inspiration, which is typical of laryngomalacia, is easily seen but may obscure the vocal cords, and the examination certainly provides no view below the glottis; a second, coexisting airway pathology therefore cannot be excluded. For this reason, a microlaryngoscopy and bronchoscopy under general anesthesia is necessary if the stridor is severe and if there is failure to thrive or there are any atypical features. It is important to appreciate that the diagnosis can only be made with the child breathing spontaneously under a very light level of anesthesia. Optimum conditions are best achieved at the end of the endoscopy during recovery from anesthesia.

In approximately 90% of reported cases the condition is mild; therefore no intervention is needed and the parents can be reassured accordingly.[2] In severe laryngomalacia, however, there is serious respiratory obstruction with substantial sternal and intercostal recession and also feeding difficulties. Cor pulmonale may ensue, and in cases of severe sternal recession a permanent pectus excavatum may develop. Restoration of an adequate airway is necessary and, until recently, this has meant resorting to tracheostomy. Such a drastic step can now be avoided by performing an endoscopic "aryepiglottoplasty" (sometimes termed as "supraglottoplasty").[3] Complications are very rare, and the stridor is usually improved immediately following the surgery.

CASE REPORT

A 17-day-old female child born of nonconsanguineous marriage was referred to our department in view of stridor, with the history of full-term normal vaginal delivery, birth weight 2.75 kg, and with meconium aspiration syndrome.

When we examined patient for the first time, the patient was kept under oxygen hood with Ryle's tube for feeding. The patient was having inspiratory stridor with suprasternal, intercostal, and epigastric recession at rest, as well as when child is awake and active, with inability to maintain oxygen saturation when oxygen supply was withheld even for 15 to 20 seconds. There was no significant change in stridor on giving prone position. The patient's blood investigations were within normal limit.

Computed tomography (CT) scan of neck and thorax was advised, and it was suggestive of mucosal thickening of supraglottic larynx, consolidation in lower lobe of left lung without any abnormality in trachea or bronchi.

Decision was taken to do laryngoscopic examination (day 19). Typical omega-shaped epiglottis was evident

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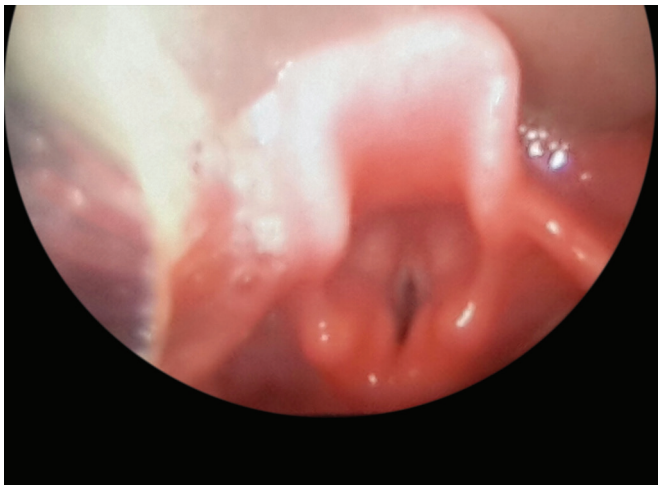

Fig. 1: Omega-shaped epiglottis

without any abnormality in rest of the airway (Fig. 1). So diagnosis was confirmed as laryngomalacia.

The patient then was kept under observation for another 2 days to assess the severity of respiratory distress. But there was no change in intensity of stridor. After through discussion with paediatricians and anaesthetist, and considering the risk for the development of cor pulmonale and pectus excavatum, it was decided to go for surgical intervention, i.e., aryepiglottoplasty. After explaining present situation and prognosis to parents, the patient was posted for surgery on day 22.

Aryepiglottoplasty was done under anesthesia with orotracheal intubation. It was done by four-handed technique with the help of pediatric laryngoscope, radio frequency probe (coagulation and cutting), and 30° rigid Hopkins endoscope with attached camera and monitor. Each aryepiglottic fold was first divided to release it from the edge of epiglottis, and the redundant mucosa with submucosal tissue was then excised. The procedure was completed without any intraoperative complications.

The patient then kept incubated with ventilatory support in neonatal intensive-care unit for 48 hours. Extubation done on postoperative day 3 (day 25). There was no stridor but minimal suprasternal recession was still evident and oxygen supply continued with nasal prongs. From next day, off oxygen trials started and the patient was able to maintain oxygen saturation, duration of which increased significantly with each trial. On day 29, the patient did not require any oxygen supplementation. As there was no respiratory distress, the baby took her first breast feed. The patient then was discharged on day 33 with no stridor, suprasternal, intercostal, or epigastric recession and with her right of breastfeeding.

CONCLUSION

Operative management should be considered in the patients with severe respiratory obstruction having sternal and intercostal retraction and feeding difficulties. Chances of developing serious complications in future, such as cor pulmonale and pectus excavatum, must be kept in mind. Uses of advanced tools like radiofrequency probe or Coblator have little advantage over surgery by conventional methods.

REFERENCES

1. Van den Broek P, Brinkman WF. Congenital laryngeal defects. Int J Pediatr Otorhinolaryngol 1979 Jul;1(1):71-78.
2. Lane RW, Weider OJ, Steinem C, Marin-Padilla M. Laryngomalacia: a review and case report of surgical treatment with resolution of pectus excavatum. Arch Otolaryngol 1984 Aug;110(8):546-551.
3. Jani P, Koltai P, Ochi JW, Bailey CM. Surgical treatment of laryngomalacia. J Laryngol Otol 1991 Dec;105(12):1040-1045.