

Case Report

Delayed Presentation of Laryngomalacia Masquerading as Subglottic Stenosis in an Operated Case of Pelvi-Ureteric Junction Obstruction: A Case Report

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ABSTRACT:

We present a 2 month old boy, previously asymptomatic, who developed stridor, feeding difficulties and respiratory distress 10 days after undergoing left pyeloplasty under general anesthesia with endotracheal intubation. Flexible bronchoscopy planned for suspected post-intubation subglottic stenosis revealed a floppy, overhanging epiglottis consistent with laryngomalacia, the subglottis was normal. The case depicts how subclinical laryngomalacia may be unmasked or aggravated by intubation, presenting later with features mimicking subglottic stenosis. Awareness of this possibility is important when evaluating persistent stridor post airway intervention. Differential diagnosis should include exacerbation of congenital laryngomalacia among others.

Keywords: *Subclinical laryngomalacia, Stridor, Subglottic stenosis, Intubation, Infant airway*

INTRODUCTION:

Laryngomalacia is the most common cause of inspiratory stridor in infants and has been estimated to affect approximately 1 in 2,000 to 1 in 3,000 infants. Typical characteristics include high-pitched inspiratory stridor that worsens with agitation or feeding and often improves in the prone position. [1] There is a spectrum of disease severity ranging from mild cases with noisy breathing without feeding or breathing difficulties to severe cases of apnea and respiratory distress with failure to thrive. [2] Late-onset or delayed presentations of laryngomalacia have been described in the literature, although they are uncommon. [3] Such cases can complicate the diagnostic pathway when they occur or are unmasked after interventions such as intubation. We present one such case in a 2 month old boy suspected to have post intubation subglottic stenosis.

CASE REPORT:

A 2 month old boy, previously healthy and asymptomatic, presented with a 10 day history of noisy, rapid breathing, subcostal retractions, and feeding difficulties. Twenty

days before the appearance of symptoms, the infant underwent left pyeloplasty for pelvi-ureteric junction obstruction under general anesthesia. Intraoperatively, endotracheal intubation was performed with a size 3.5 mm tube without reported difficulty. The immediate postoperative period was uneventful, and he was discharged on the 5th postoperative day.

About 10 days after discharge, the parents noticed progressive noisy breathing and feeding difficulties and sought medical help. On examination, the infant had inspiratory stridor that did not improve with prone positioning. There was an audible wheeze on chest auscultation. On investigation, the complete hemogram showed physiological anemia. Chest radiography demonstrated increased broncho vascular markings on the right side. Septic screen (including C Reactive Protein, Urine examination and Blood and urine cultures) was negative. Given the presence of wheeze, initial working diagnosis was acute Bronchiolitis, and the infant was treated with nebulization with Budesonide and 3% NaCl, intravenous Cefotaxime and chest physiotherapy. However, the clinical response was suboptimal. Because

of the development of stridor after a history of recent intubation, a diagnosis of post intubation subglottic stenosis was considered. A diagnostic flexible bronchoscopy with planned dilatation was scheduled. Flexible bronchoscopy performed under sedation revealed a floppy, large, overhanging epiglottis

obstructing part of the glottic inlet – features consistent with laryngomalacia. The vocal cords, subglottic airway, and trachea were normal without evidence of narrowing, ulceration or granulation. (Figure 1) The diagnosis was revised to laryngomalacia exacerbated after intubation.



FIGURE 1 - shows Normal subglottis with Overhanging epiglottis

The infant was managed conservatively with close monitoring in prone position, adrenaline and steroid nebulization, humidified oxygen, careful feeding support and chest physiotherapy. No surgical intervention (such as supraglottoplasty) or dilatation was performed. Over the subsequent days, the stridor and respiratory distress improved, and the infant was discharged. At 1 month follow-up, the child had reduced stridor, adequate feeding, and no respiratory compromise.

DISCUSSION:

Stridor in infancy is a red-flag sign for upper airway obstruction. The causes can be congenital or acquired like:

1) LARYNGEAL OBSTRUCTION– Laryngomalacia, Laryngeal Webs,^[1] Foreign Body, Laryngocele

2) TRACHEOBRONCHIAL DISEASE– Subglottic stenosis (congenital or acquired), Tracheomalacia, Endotracheal^[1] Tumours

3) EXTRINSIC MASSES– Mediastinal Masses, Vascular Ring, Thyroid Enlargement.

4) INFECTIOUS CAUSES – Laryngotracheobronchitis(croup), Epiglottitis, Tracheitis. Laryngomalacia varies in severity from being mild to severe. In our case, we have described a subclinical entity of laryngomalacia. Symptoms of laryngomalacia can be unmasked in previously asymptomatic babies due to invasive airway procedures like endotracheal intubation. The temporal association between intubation and symptom onset supports a likely role for the airway intervention in triggering symptomatic obstruction. (4) In vulnerable infants with congenital supraglottic laxity,

even minor mucosal irritation, edema, or inflammation caused by an endotracheal tube may worsen supraglottic collapse. The overhanging epiglottis and floppy arytenoids that characterize many cases of laryngomalacia are especially susceptible to increased swelling and mechanical disturbance. This may explain delayed symptomatic presentation following an otherwise uneventful intubation. In infants with recent intubation followed by persistent stridor, clinicians commonly suspect subglottic stenosis due to its known association with airway instrumentation and inflammation. [5][6] This case demonstrates an important diagnostic consideration: subclinical laryngomalacia unmasked by endotracheal intubation can mimic post-intubation subglottic stenosis. Differentiating between laryngomalacia and subglottic stenosis is essential because management differs significantly. Laryngomalacia is often managed conservatively with monitoring and supportive care; severe or failure-to-thrive cases may require supraglottoplasty. In contrast, acquired subglottic stenosis may require endoscopic dilation, laser, or open reconstructive surgery depending on severity. Flexible or rigid endoscopic evaluation is therefore critical to establish the correct diagnosis before performing interventions such as dilation. [1][7].

CONCLUSION:

Subclinical laryngomalacia can be unmasked by invasive airway procedures like endotracheal intubation.

In infants presenting with stridor after recent intubation, clinicians should consider congenital supraglottic anomalies such as subclinical laryngomalacia in addition to post intubation subglottic stenosis (8). Early endoscopic assessment prevents misdiagnosis and inappropriate procedures and guides appropriate conservative versus surgical management.

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