Congenital Tracheal Polyp in a Neonate: First Case in Literature

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ABSTRACT:
Congenital tracheal polyp in a neonate: first case in literature
Intrinsic obstruction of the tracheal lumen is extremely rare and usually caused by hemangiomas, hamartomas, or webs. We report a congenital tracheal polyp in a term neonate causing intermittent desaturations and expiratory wheezing. To our knowledge, this represents the first report with congenital tracheal polyp in the neonatal period.

Keywords: Congenital, newborn, polyp, trachea, wheezing

INTRODUCTION
Congenital anomalies of the respiratory tract include malformations located anywhere from the nose to the alveoli. Laryngomalacia, choanal atresia and tracheomalacia are relatively common anomalies of the respiratory tract. Intrinsic obstruction of the tracheal lumen is extremely rare in neonatal period. It is usually caused by hemangiomas, hamartomas, or webs (1,2). In literature congenital tracheal polyp has never been reported in either childhood or in neonatal period.

In few cases tracheal polyp was reported as a result of complication of tracheostomy in infant and childhood period (3,4). We report an unusual patient of respiratory failure in neonatal period because of congenital tracheal polyp which lead to intermittent desaturations and expiratory wheezing.

CASE REPORT
A male, term infant was born by caesarean section at 38 weeks of gestation with a birth weight of 3330 g because of fetal distress. The baby was born as the third child from healthy 36 year old mother and 38 year old father without consanguinity. Family history was unremarkable. At birth the infant was tachypneic and had retractions, with an Apgar score of 5 at 1st, and 7 at 5th minute. Patient was intubated because of respiratory failure and mechanical ventilation support was provided. Chest radiograph and blood gas analysis was found as normal. On day 2, moderate respiratory acidosis (venous pH: 7.23 pCO₂: 62 mmHg and HCO₃: 19 mmol/L base excess: -4 mmol/L) was detected. Saturations decreased and FiO₂ support was increased from 21% up to 40%. The chest radiograph showed right upper lobe
atelectasis. Patient was extubated on day 5. After extubation, expiratory wheezing and mild bilateral rhonchi were auscultated on both lungs area. Saturations of patient decreased intermittently between 85-90%. On day 11, anti-reflux therapy (Metoclopramide + H2-blockers) was started because of continued expiratory wheezing. But anti-reflux therapy was interrupted on day 18 because of no clinical response. Due to suspected upper airway obstruction, the ear, nose, and throat (ENT) examination was performed and revealed no abnormalities in the oropharynx or larynx and the cords moved normally. Computed tomography of the thorax was found normal. On postnatal 45th day, despite all the medical treatments, respiratory distress of the patient and occasional episodes of bronchospasm continued. Bronchoscopy was recommended after the pulmonary consultation. At fiberoptic bronchoscopy, a large smooth soft tissue, almost approximately 40% occluding the distal trachea was readily identified (Figure-1). The polyp had not been excised because of the wide neck diameter attached to the lumen, so biopsy was taken. The pathological evaluation of the sample revealed fibroepithelial polyp. The patient was treated symptomatically (with oxygen) and treated with nebulized corticosteroid (Budesonide, 125 µg/day, 2 doses) for two weeks. The patient’s symptoms improved over time and the third month control endoscopy showed complete regression of the polyp.

**DISCUSSION**

The approach to the term infant with respiratory failure should be directed at ruling out the presence of anatomic anomalies of the respiratory tract, cyanotic congenital heart disease and intrinsic parenchymal lung disease. Anatomic anomalies of the respiratory tract (the relatively common ones include laryngomalacia, choanal atresia and tracheomalacia) seen less commonly but may manifest as a serious, life-threatening event shortly after birth. Congenital anomalies of trachea are often diagnosed as tracheal agenesis, tracheal stenosis, tracheomalacia and tracheal compression by extrinsic masses and vascular rings. Intrinsic obstruction of the tracheal lumen is extremely rare in neonatal period. It is usually caused by hemangiomas, hamartomas, or webs (1,2). To date, in our knowledge, congenital tracheal polyp in either childhood or in neonatal age has never been reported. In the neonatal period and infancy endobronchial inflammatory polyps were reported in few cases and all cases had been ventilated for long time (5-7). In our patient, symptoms were present at birth and ventilation was continued only for five days so we do not consider the ventilation process was effective in the etiology of polyp.

In adulthood approximately 80% of primary tracheal tumors are malignant, while the remainder consists of benign lesions. The most common benign neoplasm is recurrent respiratory papillomatosis. Other benign tumors include granular cell myoblastoma, lipoma, fibroma, adenoma, leiomyoma, polyp, and hemangioma (8). Tracheal polyp is defined as the tracheal benign lesion in adulthood, resulting from inhalation of a foreign body, smoke or other irritants, as well as from

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**Figure-1:** Shows tracheal polyp which is almost approximately 40% occluding the distal trachea by fiberoptic bronchoscopy.
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infection or insertion of prostheses into the tracheobronchial tree. Tracheal polyp was reported as a result of complication of tracheostomy in childhood period (4).

The gold standard method for diagnosing obstruction of the main airways is bronchoscopy (rigid or flexible), which allows the biopsy of the lesion for histopathologic evaluation and treatment planning (9,10). The treatment of tracheal polyps varies according to the size of the lesion, the presence of symptoms, and the applicability of bronchoscopic procedures (8). Small lesions provoking mild symptoms can be treated with corticosteroids and antibiotics. In most cases, lesions of greater volume that provoke more symptoms can be extirpated through bronchoscopic procedures, such as curettage, laser, electrocauterization, or cryosurgery, according to the equipment available and the local experience. Surgery (thoracotomy or sternotomy) is rarely necessitated (8,9).

The present patient illustrated the fact that, although rare, benign tumors of the airways, such as tracheal polyps, should be remembered in the case of suspected tracheobronchial tree obstruction, especially in patients who suffer from intermittent desaturations and expiratory wheezing in neonatal period. We have learned once again that “all that respiratory failure in the neonatal period is not from parenchymal lung disease”. With even a modest index of suspicion, all patients with unexplained respiratory difficulties should undergo bronchoscopy even in the presence of a normal chest radiograph.

Authors Contributions: AB took part in the design and planned the patient’s examination and treatment and wrote the article. SU, UZ and DA took part in collecting data from the literature and following the patient. AA took part in the preparation and coordination and helped to write the article. EC took part in the performance of the bronchoscopy and following the patient. All the authors read and approved the final manuscript.

Conflict of Interest: The authors confirm that this article content has no conflicts of interest.

REFERENCES