A Unique Cause of Upper Airway Obstruction in a Child: Laryngeal Lipoma

Case Report

Kerem Kökoğlu, İbrahim Ketenci

Department of Otolaryngology, Erciyes University Faculty of Medicine, Kayseri, Turkey

Abstract

There are lots of diseases causing pediatric upper airway obstruction and stridor. They can be both congenital or acquired. While congenital causes are laryngomalacia, vocal cord palsy, congenital subglottic stenosis, acquired ones range from infections to foreign bodies or neoplasms. Laryngeal neoplasms develop almost epithelial in origin. Non-epithelial tumors consist 1% of laryngeal neoplasms. Although lipoma is the most common soft tissue tumor, laryngeal involvement is very rare and seen in the ages between 40–60 years. A 13-month-old child who had laryngeal lipoma and upper airway obstruction was aimed to present in this paper.

Keywords: Infant, larynx, neoplasm, lipoma, stridor, otorhinolaryngology, case report

ORCID IDs of the authors:

K.K. 0000-0003-1749-7095;
İ.K. 0000-0001-9359-4546.

Cite this article as: Kökoğlu K, Ketenci İ. A Unique Cause of Upper Airway Obstruction in a Child: Laryngeal Lipoma. *Turk Arch Otorhinolaryngol 2022; 60(4): 231-233.*

Corresponding Author:
Kerem Kökoğlu;
dr.kokoglu@gmail.com

Received Date: 29.11.2022
Accepted Date: 29.12.2022

DOI: 10.4274/tao.2022.2022-11-8

Introduction

Disorders that cause respiratory distress in children may occur anywhere from the pyriform aperture to the distal bronchi. They can be both congenital or acquired. Laryngomalacia, vocal cord palsy, stenosis and webs are the most common causes of stridor in children (1).

Almost all laryngeal neoplasms develop from epithelial cells. Non-epithelial tumors make a small portion of laryngeal neoplasms and can arise from mesenchymal tissues such as bone, cartilage, muscle, lipomatous and connective tissue; neuronal, blood and lymphatic vessels as well. These tumors are rare. Lipoma is the most common soft tissue tumor and consists half of all benign mesenchymal neoplasms nearly. Its incidence is 1% and its peak incidence is seen in patients aged 40–60 years. They are asymptomatic mostly. However; its location matters and can cause respiratory distress if it places in laryngeal inlet surely (2).

Here, a laryngeal lipoma is presented in a 13-month-old child who was treated via transoral way. It was an extremely rare case.

Case Presentation

A 13-month-old girl child was brought to an otolaryngology clinic because of noisy breathing, shortness of breath and neck collapse. She had these symptoms for six months and they got worse and became permanent lately. Her prenatal and natal histories were normal. Her parents denied any previous surgery, intubation history and medication. There was inspiratory stridor in her physical examination. Her respiratory rate was 24/min with 95% oxygen saturation. She had no cyanosis. She had supraclavicular retractions. There was a mass in her laryngeal inlet in the awake flexible fiberoptic laryngoscopic examination. Other otolaryngologic examinations were normal.

A semi-urgent surgery was planned because of her respiratory distress. There was a hipodense, multilobule mass in 20x15 mm size, on the right side of her larynx in computed tomography (CT) scan. Its density was estimated - 84 Hounsfield units (Figure 1). There was a smooth, submucosal mass in her direct laryngoscopy (Figure 2). After laryngeal suspension, the mass was identified and a mucosal incision was performed through just lateral edge of aryepiglottic plica by diode laser (3 watt power). The fatty mass was found and dissected bluntly and removed (Figure 3). Mucosal wound edges were tilted towards each other and not sutured to provide drainage and prevent hematoma as well. She was intubated for three days to avoid an emergency respiratory condition such as bleeding, edema or hematoma. She was able to feed at postoperative first week without aspiration. She had a nasogastric tube during this period. The mass was reported as lipoma in histopathological examination. She was asymptomatic at a 2-year follow-up period. Informed consent was obtained for publication from the parents of the child.

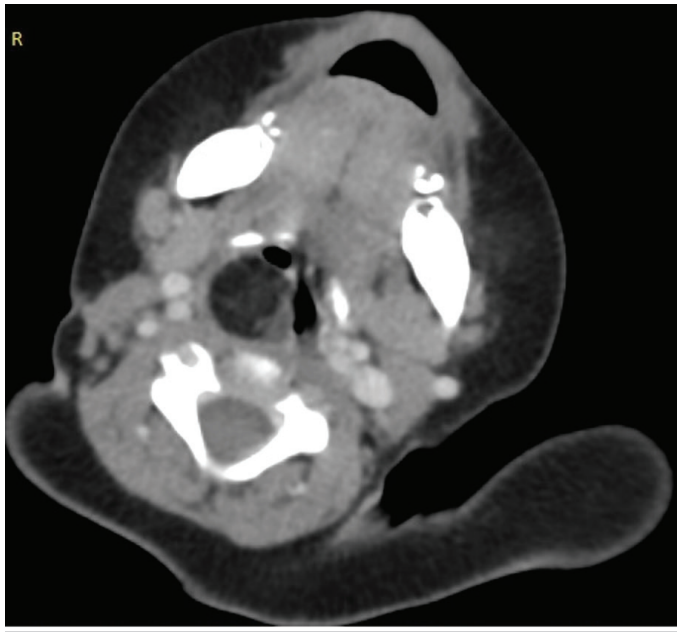

Figure 1. There is a hypodense (HU: -84), properly limited mass on the right side of the laryngeal inlet in the axial section of computerized tomography
HU: Hounsfield units

Discussion

A turbulent airflow through a partially obstructed or stenotic upper airway causes a hearable high-pitched sound called stridor. Because stridor is an important symptom indicating an underlying disease, the reason must be immediately

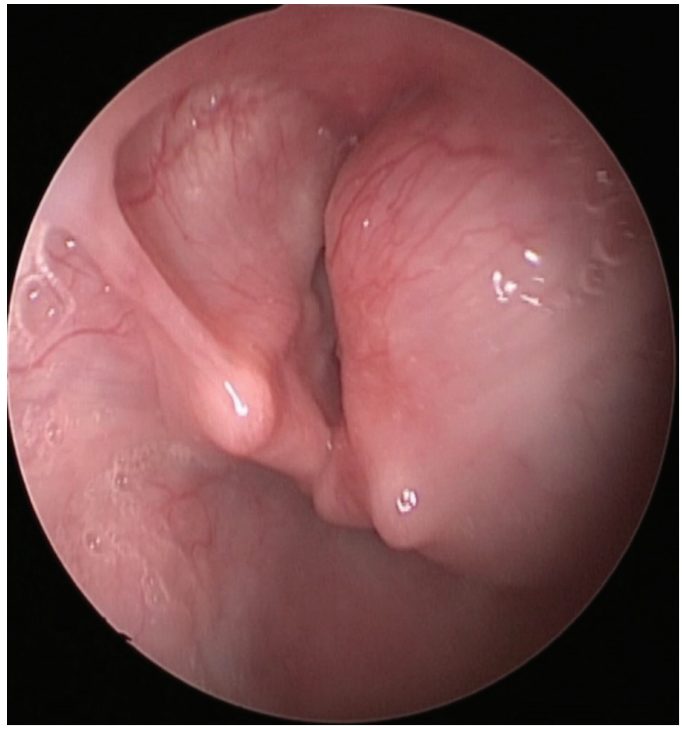

Figure 2. Endoscopic image of the mass on the right side of the larynx. The right aryepiglottic fold is obscured

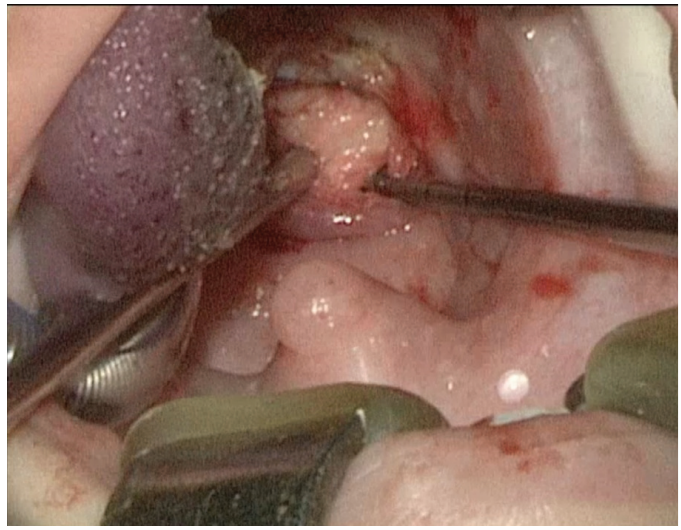

Figure 3. Blunt dissection of the mass transorally. There is a fatty mass compatible with lipoma

illuminated. There are many possible causes of acquired stridor such as infections, foreign bodies, neoplasms and iatrogenic insults. Prevalent congenital causes include laryngomalacia, vocal cord paresis, laryngeal webs, congenital subglottic stenosis, tracheomalacia, and subglottic hemangioma. Although acquired diseases incline to manifest acutely and at any age; congenital stridor presents at birth or shortly subsequent. Hence, inquiring about symptom initiation and duration can help to create a focused differential diagnosis (3). The respiration of the presented patient was normal at birth, then began to get worse after seven months, which made us think acquired reasons. There was a smooth mass on the right side of larynx in the presented patient. Because of the patient's semi-urgent conditon, neck CT was performed instead of magnetic resonance imaging (MRI) which requires a longer time procedure. It was better to perform an MRI for such a soft tissue mass.

It is a challenge to make a differential diagnosis for such laryngeal neoplasms from other conditions such as malignancy, laryngocele, or retention cyst. Laryngeal lipoma seems a submucosal or yellow mass endoscopically. Imaging methods are good indications for differential diagnosis. A CT scan ensures a definitive diagnosis of lipoma in almost all cases by figuring out the actual density of the mass. Fatty tissue has a negative CT attenuation number. Thus, lipomas have peculiar CT aspects of a homogeneous mass with few septations, a low CT attenuation number, and no contrast increment (2). The presented case had typical features of lipoma in CT scan and this was confirmed histopathologically.

Non-epithelial tumors of larynx are rare and form less than 1% of all primary laryngeal neoplasms. Lipoma is the most common mesenchymal tumor. It places in the subcutaneous tissue where fat is abound. Posterior area is more frequent in the neck, while it is rare in the upper aerodigestive tract, nearly 0.6% (2). Surgery is the treatment choice for lipoma. It is possible to perform an internal approach for lipomas less than 2 cm with or without laser. For larger tumors of more than 2 cm an external approach is indicated (2). We performed a transoral laryngeal microsurgery to excise the mass.

Friedman et al. (4) reported 38 cases having non-epithelial laryngeal tumors in a 9-year period, 16 of whom were benign conditions. The mean age was 56. There were two lipoma cases in their series. But ages of cases could not be determined from the article. In a literature review spanning 43 years, Reid et al. (5) reported 24 cases who had spindle cell lipoma in airway, 10 of whom had laryngeal. The youngest patient was 38 years old in their series. There were children reported with laryngeal lipoma in the literature as well. Jakobsen et al. (6) reported a six-year-old child admitted with obstructive apnoea, respiratory distress and dysphagia. Abtahi et al. (7) reported an eleven-year-old child who had paraglottic lipoma. Both cases were treated by open surgery.

Laryngeal soft tissue tumors are very rare conditions even in adults. They can cause respiratory and nutritional symptoms. They can be managed by excision via external or internal way. Internal approaches should be preferred in compatible cases.

Informed Consent: Informed consent was obtained for publication from the parents of the child.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: K.K., İ.K., Concept: K.K., İ.K., Design: K.K., İ.K., Data Collection and/or Processing: K.K., İ.K., Analysis and/or Interpretation: K.K., İ.K., Literature Search: K.K., Writing: K.K.

Conflict of Interest: There is no conflict of interest to disclose.

Financial Disclosure: The authors declared that this study has received no financial support.

Main Points

- Inspiratory stridor should be enlighted in children as early as possible.
- Laryngeal neoplasms are generally in epithelial origin.
- Although rare, laryngeal neoplasms should be kept in mind in children with inspiratory stridor.

References

1. Vijayasekaran S. Pediatric Airway Pathology. Front Pediatr 2020; 8: 246. [Crossref]
2. Lombardo N, Lobello N, Piazzetta G, Ciriolo M, Pelaia C, Testa D, et al. Intrinsic laryngeal lipoma treated with transoral CO_2 laser microsurgery: an unusual case report. Am J Case Rep 2020; 21: e920528. [Crossref]
3. Clark CM, Kugler K, Carr MM. Common causes of congenital stridor in infants. JAAPA 2018; 31: 36-40. [Crossref]
4. Friedman AD, Burns JA, Lutch MJ, Zeitels SM. Submucosal neoplasms of the laryngeal introitus. J Laryngol Otol 2012; 126: 706-13. [Crossref]
5. Reid J, Wehrli B, Sowerby LJ. Spindle cell lipomas of the respiratory tract: a case report and comprehensive literature review. Ann Otol Rhinol Laryngol 2019; 128: 1086-91. [Crossref]
6. Jakobsen KK, Grønhøj C, Juel C, Charabi B, Hjuler T. Laryngeal lipoma: a rare cause of pediatric airway obstruction. J Pediatr Surg Case Rep 2018; 29: 63-5. [Crossref]
7. Abtahi SH, Eshaghian A, Abootalebian F. Lipoma of paraglottic space in a child: a case report. Iran J Otorhinolaryngol 2014; 26: 267-9. [Crossref]