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Case Report / *Olgu Sunumu*

Congenital subglottic web and unilateral vocal cord paralysis with asthma and stridor: A case report

Astım ve stridor yakınması ile başvuran doğuştan subglottik web ve tek taraflı vokal kord paralizisi: Olgu sunumu

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ABSTRACT

Laryngeal web is a membrane-like structure extending across both halves of the larynx which may develop in the supraglottic, glottic, and subglottic regions, and can be congenital but often develops due to previous coarse laryngeal surgery. Our case is of a 13-year-old male patient who had been receiving asthma treatment for five years due to dyspnea and hoarseness. Videolaryngoscopy performed at our clinic revealed subglottic web and left vocal cord paralysis. Direct laryngoscopy was performed under general anesthesia and the subglottic web was eradicated with radiofrequency. The patient's postoperative dyspnea completely improved and hoarseness was partially improved. Despite laryngeal web and unilateral vocal cord paralysis, our patient was 13 years of age. Despite all radiological examinations, pathology may remain undetected. Endoscopic examination must be especially performed in children with stridor and dyspnea to exclude congenital laryngeal pathologies.

Keywords: Asthma; laryngeal web; stridor.

ÖZ

Larengeal web supraglottik, glottik ve subglottik bölgede yerleşebilen, doğuştan olabilmekle birlikte çoğu zaman önceki kaba larengeal cerrahiye bağlı olarak gelişebilen, larenksin her iki yarımını birbirine bağlayan perdemsi yapıdır. Olgumuz beş yıldır nefes darlığı ve ses kısıklığı nedeniyle astım tedavisi alan 13 yaşında erkek hasta idi. Kliniğimizde yapılan videolaringoskopide subglottik alanda web ve sol vokal kord paralizisi tespit edildi. Genel anestezi altında direkt laringoskopi yapıldı, radyofrekans ile subglottik web açıldı. Hastanın ameliyat sonrası nefes darlığı yakınması tamamen, ses kısıklığı ise kısmen düzeldi. Larengeal web ve tek taraflı vokal kord paralizi olmasına rağmen olgumuz 13 yaşına kadar gelmişti. Tüm radyolojik incelemelere rağmen patoloji tespit edilemeyebilir. Stridor ve dispne yakınması ile gelen çocuk hastalarda, doğuştan larenks patolojilerini ekarte etmek için endoskopik muayene mutlaka yapılmalıdır.

Anahtar sözcükler: Astım; larengeal web; stridor.

Laryngeal web is a membrane-like structure extending across both halves of the larynx which may develop in the supraglottic, glottic, and subglottic regions, and can be congenital but often develops due to previous coarse laryngeal surgery. Congenital laryngeal web may develop as a result of larynx recanalization failure in the tenth week of development. Symptoms vary depending on the size and location of the laryngeal lesion. The most common complaint is hoarseness. Other symptoms include airway obstruction, stridor, and recurrent croup present with recurrent upper respiratory tract infections. Major congenital web symptoms begin at birth, and may

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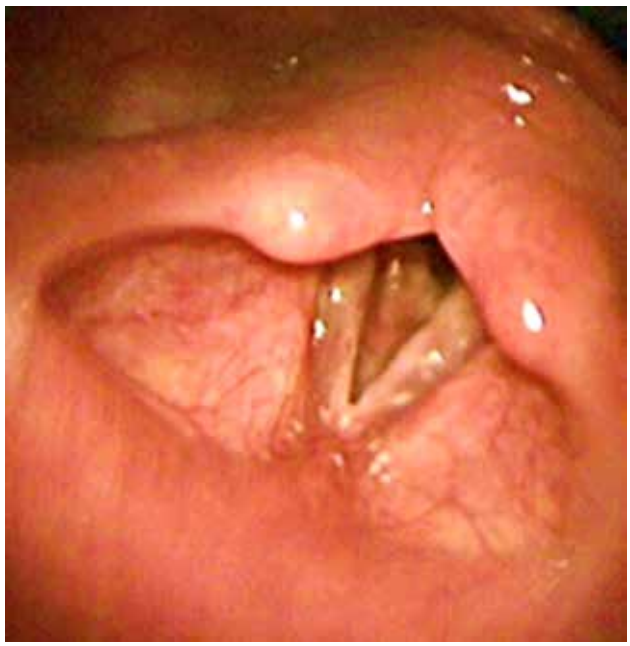

Figure 1. The web covering 50% of the subglottic region and the left vocal cord with asymmetrical features when compared to the right.

even require emergency intubation and tracheotomy in the delivery room.

CASE REPORT

A 13-year-old male patient had been treated for asthma for about five years due to shortness of breath and hoarseness. The patient was referred to our clinic and videolaryngoscopy revealed left vocal cord paralysis and the subglottic airway was observed in the anterior half of the closed web (Figure 1 and 2). The patient had no vocal cord symptoms at birth. No pathology was found in magnetic resonance imaging (MRI) in terms of other etiologic factors. Direct laryngoscopy was performed under general anesthesia and subglottic web resection was performed with radiofrequency coblation. The patient's postoperative dyspnea improved, but there was partial improvement in hoarseness.

DISCUSSION

Acquired or congenital laryngeal web are generally rare anomalies that can be composed of fibrous membrane extending the right to varying degrees front to back. Congenital laryngeal web constitutes 5% of all laryngeal anomalies. Acquired pathology is 2/3 times more than congenital pathology and often occurs due to improper or prolonged intubation.[1-4]

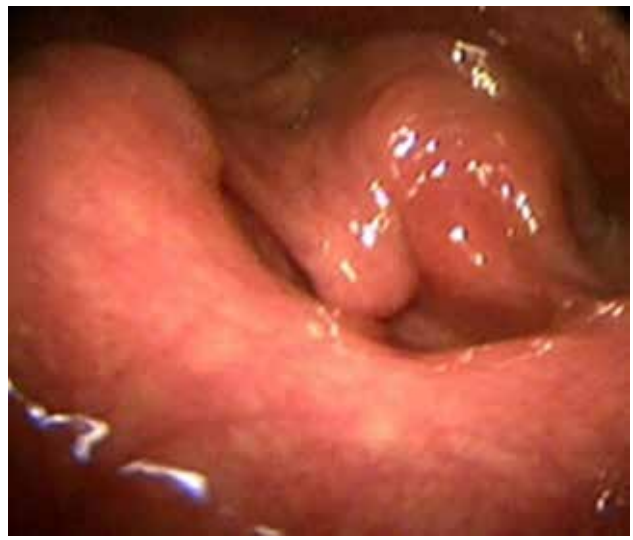

Figure 2. The web covering 50% of the subglottic region and the left vocal cord with asymmetrical features when compared to the right.

Varying degrees of laryngeal web develop as a result of incomplete recanalization of the laryngotracheal tube in the third month of gestation. The most severe form of this anomaly is complete laryngeal atresia. There are three different forms: subglottic, glottic, and supraglottic. The glottic form is seen in 75% of cases. Symptoms usually present at birth. While symptoms of vocal cord dysfunction are foremost, the second most common symptoms are stridor and dyspnea due to obstruction. Emergency tracheotomy may be necessary in the delivery room. Intubation is less frequent in asymptomatic patients. Our patient had both web and vocal cord paralysis, and stridor was dominant.

Cohen[6] classified laryngeal web into four groups from 1 to 4 depending on the increasing degree of narrowing of the airway, subglottic involvement, and web symptoms. Our case was classified as Type 3 according to this classification.

The main method for diagnosis is flexible endoscopic examination. Direct laryngoscopy under general anesthesia, carries both diagnosis and treatment features. Treatment depends on thickness of the web. Thin web can be treated with endoscopic CO_2 laser or excision with scalpel.[1] Thicker web, requires tracheotomy and open laryngeal procedure. In our case, we performed web resection with radiofrequency coblation.

While the most common cause of stridor is congenital laryngomalacia (60%), the second is vocal cord paralysis.[7] Unilateral vocal cord paralysis is more common and usually the peripheral type. Often depends on the cardiac-vascular anomalies and major neck trauma during birth. Unilateral vocal cord paralysis

is more common and often the peripheral type, often depending on cardiovascular anomalies and major neck trauma occurring at birth. Bilateral vocal cord paralysis is often induced by central nervous system problems; with etiologies such as hydrocephalus, meningocele, and encephalocele, Arnold-Chiari malformation should also be investigated. The voices and cries of infants with unilateral paralysis are usually weak and high-pitched. Unilateral paralysis does not require treatment unless it causes severe aspiration. Inspiratory stridor is seen in bilateral paralysis. Most congenital laryngeal paralysis is cured spontaneously within the first few years of the life, therefore, provided with a tracheotomy after the airway in patients with bilateral paralysis should be followed and should not be planned several years before definitive treatment.[8-10] Our patient had grown to the age of 13, despite laryngeal web and unilateral vocal cord paralysis. Pathology could not be detected despite all radiological examinations. Only web resection was performed and the patient was followed up.

Conclusion

Endoscopic examination must be performed on patients with complaints of stridor and dyspnea, considering important congenital malformation pathologies in children.

Declaration of conflicting interests

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