

Vocal cords polyps presenting with dyspnea and requiring tracheostomy

Abstract

Vocal fold polyps are benign lesions typically found unilaterally and are the second most common laryngeal lesion, following vocal nodules. No significant differences in age or gender distribution have been observed for these lesions. These polyps can be categorized based on morphology as either sessile or pedunculated, and histologically as gelatinous or translucent, fibrous or organized, and angiomatous or hemorrhagic. The etiology of vocal polyps is primarily phono traumatic. Nonetheless, additional irritative factors such as gastroesophageal reflux, smoking, inhalation of noxious chemicals, or strenuous respiratory activities can also contribute to their development. Clinically, the predominant manifestations in patients with vocal fold polyps include dysphonia characterized by hoarseness or breathiness and vocal fatigue. In rare cases, large or giant polyps can cause airway obstruction. Such cases may require emergency interventions, such as tracheotomy, followed by surgical excision of the polyps. This is the case of an 80 year old man who had respiratory distress 3 months ago with chronic dysphonia evolving for 2 years without dysphagia, the symptomatology was marked by the sudden onset of laryngeal dyspnea which imposed performing a emergency tracheotomy. A fiber optic laryngeal examination revealed a large reddish mass occupying the posterior part of the glottis, completely obstructing breathing.

Keywords: vocal fold polyps, phono traumatic, dysphonia, airway obstruction, dyspnea

Volume 14 Issue 4 - 2024

Sara Moujrid, Fadoua El Mourabit, Meriem Iouadghiri, Walid Bijou, Youssef Oukessou, Sami Rouadi, Reda Abada, Mohamed Roubal, Mohamed Mahtar

Department of ENT Head and Neck Surgery, Ibn Rochd University Hospital, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco

Correspondence: Sara Moujrid, Department of ENT Head and Neck Surgery, Ibn Rochd University Hospital, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco, Email saramoujrid9@gmail.com

Received: September 30, 2024 | **Published:** October 24, 2024

Introduction

Vocal cords polyps are the most common lesions affecting the vocal cords. Generally, they are benign and of small size but on a few rare occasions they can gradually grow to obstruct the air way and cause dyspnea. The main causes are voice abuse/disuse, mechanical or chemical irritation from heavy smoking, allergy, gastroesophageal reflux and chronic infection. The symptoms could be variable depending on the size and location of the polyp such as dysphonia, hoarseness, foreign body sensation, wheezing, stridor and even upper airway obstruction.¹⁻³

Very rarely, giant vocal cords polyps may cause severe airway obstruction leading to dyspnea or even sudden death. Thus, it is highly recommended that tracheostomy be performed as it is the safest and most reliable and useful procedure to guarantee the upper airway in cases of laryngeal polyp showing dyspnea.⁴

Case report

We present a case of an 80-year-old man. He was admitted to the emergency department because of upper respiratory distress and severe dyspnea. He reported that his condition gradually worsened 3 months prior to his admission and that he had never consulted with a laryngologist. He also suffers from long-term dysphonia and without dysphagia. Most notable is that our patient is a non-smoker without any medical history.

On his admission clinical examination showed mild tachypnea with inspiratory stridor and suprasternal recession, no palpable cervical mass. A fiber optic laryngeal examination revealed a reddish mass occupying glottis area on the left vocal cord. The respiration causes the mass to swing back and forth, leading to the whole glottis area obstruction. Other supraglottic area, epiglottis, vallecular, base of tongue and pyriform sinus, were normal (Figure 1&2).



Figure 1 photo taken during nasofibroscope examination showing a large posterior glottic polyp.

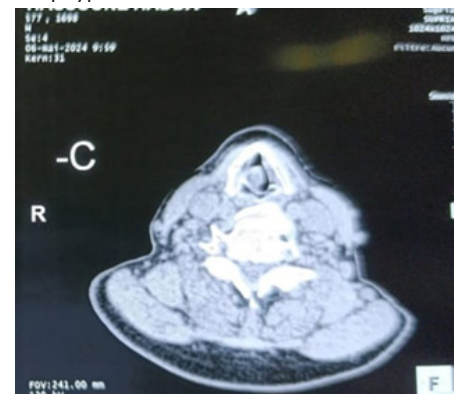


Figure 2 cross-section of cervical CT passing through the glottic level showing a large polyp of the right vocal cord.

Discussion

We are witnessing a significant increase in the number of cases diagnosed with laryngeal polyps which is the most common condition

affecting vocal cords. Laryngeal polyps rarely cause severe airway obstruction that can threaten the patient's life. But in certain cases, polyps can reach a huge size and cause dyspnea. Acute upper airway obstruction from laryngeal polyps is uncommon. However, a large pedunculated laryngeal polyp, when unrecognized, may produce sudden airway obstruction. The importance of an early diagnosis and treatment is stressed. Primary care physicians, endoscopists, anesthesiologists, and otolaryngologists should be aware of this condition and add it to their differential diagnosis of sudden respiratory obstruction. Laryngeal polyps are among the most common lesions of the vocal cords.⁵⁻⁷

They are generally benign and present with dysphonia and hoarseness. But large ones may cause airway obstruction and, on some very rare occasions, dyspnea. They are often mistaken for asthma and treated as such with steroids in emergency rooms. It is of great importance to add this condition to the differential diagnosis of sudden respiratory obstruction. Fatality from huge laryngeal polyps is rare but it was reported in the literature.^{8,9} As in our case, tracheostomy remains the best choice to salvage the patient when a huge polyp causes airway obstruction, since intubation might be unsafe or even impossible.^{9,10}

Vocal cords polyps are mainly the result of phono trauma. People misusing or abusing their voice, be it by shouting, yelling, screaming or just talking excessively, are more prone to altering their vocal folds morphology and consequently have lesions. Smoking has also been tightly linked to laryngeal polyps and many studies support that claim. As it is considered by some authors as the primary factor behind the emergence of polyps especially when combined with vocal overuse.³ Furthermore, tobacco causes polyps to increase dramatically in size as it favors the vocal fold epithelium impairment and leads to increased hyaline degeneration in the polyp.^{11,3}

Another etiological factor of vocal polyps is vocal fold paresis since healthy muscles, as they try to compensate for the affected muscles, generate excessive force and end up causing mechanical trauma to the vocal folds.¹² One last and less common etiology of laryngeal polyps is gastroesophageal reflux disease (GERD). Severe GERD leads to local trauma, inflammation, and irritation in the vocal cords.^{3,4}

Vocal polyps prevent the complete closure of the glottis and interfere with the normal vibration of the vocal cords producing more hoarseness.^{3,6} Giant laryngeal polyp may cause stenosis of the posterior glottis, which is also known as the respiratory glottis, and result in dyspnea, cardiorespiratory failure or even death. Which would require an emergency intervention.^{6,3}

Conclusion

Throughout the literature there seems to be a consensus that huge laryngeal polyps are benign and rare. But when they occur, they usually cause dyspnea with upper airway obstruction as the posterior glottis gets occupied by the polyps. Therefore, they should be considered during the differential diagnosis of respiratory obstructive disorders. Vocal abuse and smoking are seen as the main etiological factors behind the condition.

Large laryngeal polyps are a common reason for a tracheostomy. It is preferred over intubation since the latter would dislodge the polyp and lead to worsening of airway obstruction. Given the phono traumatic aspect of vocal polyps, previous anatomic alterations in the vocal folds, such as MSAs, may cause the emergence of hematomas and the development of lesions the presence of vocal polyps disrupts glottic closure, increasing the airflow directly to the glottis to compensate for the inefficient glottic closure. Thus, polyp size and stiffness interfere directly in the "vibratory pattern of the vocal polyp, producing more hoarseness. While large polyps tend to induce subharmonics and chaos, small polyps may not influence the periodicity of vocal fold vibrations.^{13,14}

References

1. Gurshinderpal SS, Ankur KS. Large vocal cord polyp: an unusual cause of dyspnea. *BMJ Case Rep*. 2015;:bcr201521154223.
2. Takeshi K, Hiroto H, Yoshinobu K. A large vocal fold polyp causing dyspnea. *J Otol Rhinol*. 2018;7(6).
3. Daniela DV, Adriana de OCG, Claudia MTA. Vocal fold polyps: literature review. *Int Arch Otorhinolaryngol*. 2019;23(1):116-124.
4. Marianna S, Dan Craven, Hazel H, et al. What are vocal cord dysfunction (vcd) and inspiratory laryngeal obstruction (ilo)? *Am J Respir Crit Care Med*. 2009;180:5-6.
5. American journal of emergency medicine. 2003;22:1.
6. Takeshi K, Ryohei F, Kiyotaka M, et al. A giant vocal fold polyp causing dyspnea. *Ear Nose Throat J*. 2009;88(12):1248-1249.
7. Sema ZT, Asl SF, Osman K, et al. Obstructive laryngeal polyps presenting with dyspnea: report of five rare cases. *ENT Updates*. 2015;5(1):48-50
8. Yasuyuki C, Ryota I, Yoshibumi K, et al. A Giant Vocal Cord Polyp Mimics Asthma Attack. *Clin Pract Cases Emerg Med*. 2018;2(4):361-362.
9. Atsushi Ochiai. Large laryngeal polyp causing airway obstruction. *Oxf Med Case Reports*. 2016(8):omw050.
10. Yong TH, Cha DY, Ki HH. Huge subglottic polyp treated with tracheotomy and laryngofissure. *J Korean Soc Laryngol Phoniatr Logop*. 2017;28(1):52-54.
11. Moncef S, Amine MC. Giant laryngeal polyp: an unusual indication of tracheostomy. *Pan Afr Med J*. 2017;26:76.
12. Li L, Na Sun, Qiuhua Y, et al. Effect of voice training in the voice rehabilitation of patients with vocal cord polyps after surgery. *Experimental and therapeutic medicine*. 2014;7:877-880.
13. Ya Zhang, Gengtian Liang, Na Sun, et al. Comparison of CO2 laser and conventional laryngomicrosurgery treatments of polyp and leukoplakia of the vocal fold. *Int J Clin Exp Med*. 2015;8(10):18265-18274.
14. Priya Malik, SPS Yadav, Rajeev Sen, et al. The clinicopathological study of benign lesions of vocal cords. *Indian Journal of Otolaryngology and Head & Neck Surgery*. 2019;71:212-220.