

Case Report

Upper airway obstruction caused by bilateral giant tonsilloliths

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Abstract

Tonsilloliths are rare dystrophic calcifications caused by chronic inflammation of the tonsils. They are usually small and occur on one side. Herein, we report a case involving a 75-year-old man presenting odynophagia and progressive dyspnea for days who was found by computed tomography image to have bilateral giant tonsilloliths. Hyperdensity lesions were found over the tonsillar fossa on both sides. Tonsillectomy was performed leading to immediate relief of symptoms. A review of relevant literature revealed that most patients with tonsilloliths are asymptomatic and need only conservative treatment. Severe symptoms such as dyspnea are extremely rare. Although tonsillolith can be easily diagnosed by computed tomography, otolaryngologists should be careful to differentiate this entity. Copyright © 2011 Elsevier Taiwan LLC and the Chinese Medical Association. All rights reserved.

Keywords: Tonsillitis; Tonsillolith; Upper airway obstruction

1. Introduction

Upper airway obstruction is an emergency in the field of otolaryngology. The most common causes include acute infection with abscess formation, tumor growth, and foreign body impaction. To maintain upper airway patency, endotracheal intubation, cricothyroidotomy, or tracheostomy is sometimes mandatory. Nowadays, image studies play important roles in the differential diagnosis. Acute tonsillitis with peritonsillar abscess is one of the common cause of upper airway obstruction. Nevertheless, bilateral giant tonsilloliths accompanied with acute tonsillitis are rare. The tonsillolith is usually small, unilateral, and asymptomatic. Most patients are sporadic in occurrence and conservative treatment is enough with no further manipulations. We present a 75-year-old gentleman having bilateral giant tonsilloliths with initial presentation of odynophagia and progressive dyspnea. On account of severe discomfort, tonsillectomy was immediately performed, providing dramatic relief of symptoms.

2. Case report

A 75-year-old man was referred to our institute because of upper airway infection refractory to second-line intravenous antibiotics. Tracing back his history, he had suffered from odynophagia, high fever and progressive dyspnea about 3 weeks before. The symptoms gradually deteriorated and the respiration was compromised. Emergency endotracheal intubation was done at local hospital, and then the patient was hospitalized for further management. His respiratory condition was improved after 3 weeks of intravenous antibiotic treatment. Although weaning succeeded, odynophagia, high fever, and leukocytosis persisted.

At our emergency department, bilateral tonsil enlargement coated with ulcers, especially on the right side, was noted (Fig. 1). The surface of the patient's tonsils was irregular, and easy contact bleeding was observed. Laboratory tests demonstrated leukocytosis (16,430/ μ L) with left shift, but chest roentgenology showed no active pulmonary lesion. For suspicion of abscess formation or tumor growth, a coronal and axial contrast-enhanced computed tomography (CT) imaging of the head and neck was performed. It revealed one high-density lesion in each palatine tonsil, with the greatest diameters of 1.85 cm on the right side and 1.29 cm on the left side

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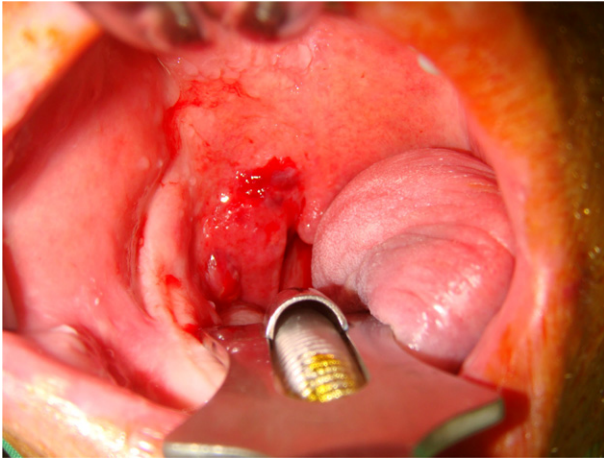


Fig. 1. Congestion and enlargement of bilateral tonsils on the right side.

(Fig. 2). No obvious low-density lesion or soft-tissue mass was found in the peritonsillar area. Bilateral giant tonsilloliths with acute tonsillitis were diagnosed through the image studies. No abscess or tumor was noted within the lesions.

We performed bilateral tonsillectomy because of persistent symptoms. During surgery, one firm mass lesion was found in each tonsillar fossa. The specimens of bilateral tonsils were measured at about 2 cm × 1 cm × 1 cm on the left side and 3 cm × 1.5 cm × 1 cm on the right side. Their borders were irregular (Fig. 3). The final pathology diagnosis was tonsillitis with tonsilloliths. Postoperatively, the patient's fever subsided immediately, and then he was discharged home 3 days later. No respiratory symptom was complained again during follow-up at our outpatient department.

3. Discussion

Small calcifications are frequently found on the tonsils, and such tonsilloliths are usually single and unilateral,¹ whitish to



Fig. 2. Two high-density lesions over bilateral tonsillar fossa.

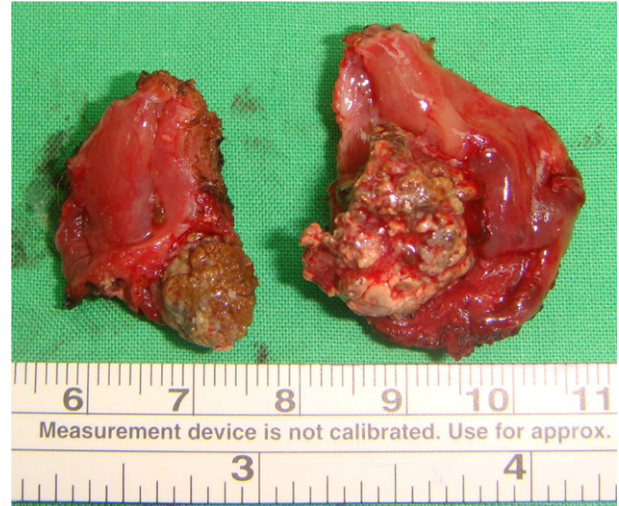


Fig. 3. Tonsilloliths with hard consistency and irregular border over the tonsillar fossa on both sides.

yellowish color, mainly composed of calcium salts and often occur at the ages of 20–77 years in adults. Up to now, the pathogenesis is still unknown. The most common hypothesis is repeated tonsillitis; it leads to deposition of epithelial debris and forms a suitable environment for bacteria, fungus, or actinomycosis to survive.^{2,3} After repeated infection, inorganic salts from the saliva form the major content of tonsillolith and embed over peritonsillar space or lateral pharyngeal wall.

The bacterial composition of the tonsilloliths is different from that of the healthy upper respiratory tract. It is believed to carry a higher percentage of anaerobic bacterial species, which could be the cause of malodor of oral cavity and a possible reservoir for tonsillitis.³

Tonsillolith can be diagnosed through clinical presentation, physical examination, and image studies. Enlargement of the tonsil and hardness in consistency are typical findings during physical examination. X-ray of oral cavity shows radio-opaque shadow, but it is also easy to misjudge as foreign body, teeth, prominent mandibular ramus or maxilla, calcification in artery, lymph nodes, salivary gland, and styloid ligament.^{4,5} The most convenient and accurate image is CT; through the characteristics of multi-slices and different views, we can accurately know the size, location of the tonsillolith, and surrounding inflammation. Although the diagnosis is relatively easy when CT is performed, the image studies are still not pathognomonic. Hence, clinicians should consider the possibility of differential diagnosis as mentioned above.⁶ The advantage of CT scan is that we can know the relationship between the lesion and surrounding structures through serial images, and some diagnoses such as bony tissues or calcification in vessels, may be excluded. In our case, diagnosis was delayed because of the rarely clinical presentation of upper airway obstruction and refractory infection. CT is a good tool to make a quick and precise diagnosis.

Most patients with tonsillolith are asymptomatic, and no surgical intervention is needed. However, it may cause various

symptoms, such as halitosis, dysphagia, odynophagia, and foreign body sensation. If larger than usual and accompanied with acute infection, they will possibly cause difficulty in breathing, as in this case. We conclude that if the symptoms persist, removal of tonsilloliths by tonsillectomy is the most efficacious therapy.

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