



## Primary Tonsillar Tuberculosis: Is it Really a Rare Entity?

Vinota Paniselvam<sup>1</sup> , Chee Chean Lim<sup>1,2</sup> , Gagandeep Mann<sup>1</sup> , Fong Juen Kiew<sup>3</sup>

### ABSTRACT

**Background:** Oropharyngeal tuberculosis (TB), including tonsillar TB, is rare in an immunocompetent adult. Tonsillar TB is more likely to occur as a result of pulmonary TB causing secondary inoculation of tubercle bacilli. The primary form of tonsillar TB without pulmonary TB has often been described as an extremely rare form of extra-pulmonary TB.

**Case Report:** In this case study, we aim to illustrate an incidental finding of primary tonsillar TB in an immunocompetent adult presenting with asymmetrical tonsillar hypertrophy. At the same time, we included two other cases of oropharyngeal TB originating from our centre reported in the literature recently to highlight the likelihood that it may be much more common, especially in endemic parts of the world.

**Conclusion:** Better awareness of this condition would constitute an early referral to the otorhinolaryngology team, which will enable timely treatment and complete recovery.

**Keywords:** Primary, asymmetrical tonsils, adult, tuberculosis

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### INTRODUCTION

Tuberculosis (TB) is a caseating granulomatous infection that arises from *Mycobacterium Tuberculosis*. TB is an airborne disease that primarily affects the lungs but may occur in extrapulmonary sites, including abdominal TB, pleural TB, TB of the central nervous system, skeletal TB, TB pericarditis and genitourinary TB. Oropharyngeal TB, including tonsillar TB is rare in 0.05 to 5% of extrapulmonary TB (1). In this case study, we report a rare case of primary tonsillar TB in an immunocompetent adult who presented with asymmetrical tonsillar hypertrophy and submental lymphadenopathy.

### CASE REPORT

A 34 years old Malaysian female presented to our Otorhinolaryngology clinic complaining of a submental swelling for six months. She was treated as submental lymphadenitis and administered oral amoxycillin for five days and subsequently oral metronidazole for another five days. However, her neck swelling persisted and she described a new symptom of having cold sweats at night. She denied a history of recurrent sore throat or upper respiratory tract infection. She had no constitutional symptoms, such as loss of weight and loss of appetite. She also had no close contact with patients with pulmonary tuberculosis as well. On examination, her submental swelling measured 1x1 cm, which was smooth in surface, oval in shape and firm in nature. Oropharyngeal examination revealed grade III left tonsillar hypertrophy and grade I hypertrophy on the right. The tonsils appeared smooth, with no suspicious ulceration or contact bleeding. Areas over the buccal mucosa, retromolar trigone and soft palate were normal. Both nasendoscopy and laryngoscopy revealed normal findings. Her full blood counts were within a normal range. Mantoux test reading was 12 mm but sputum results for acid-fast bacilli (AFB) were negative. Her Chest X-ray was normal. Fine needle aspiration cytology was performed twice, but both reports were reported as reactive lymphadenopathy with no epithelioid granuloma or atypical cells seen. In view of her asymmetrical tonsils, she underwent tonsillectomy, where both of her palatine tonsils were removed. Both of her tonsils were removed to prevent confusion when it is enlarged during future visits as to whether the patient had the contralateral side removed previously. Histopathological examination of both the right and left tonsils revealed chronic caseating granulomatous inflammation (Fig. 1a, b) with Ziehl-Neelsen stain for Acid-fast Bacilli also being positive (Fig. 1c). She was subsequently referred to our Infectious Disease Clinic and was started on anti-tuberculous medication. Tablet Akurit-4, which is a combination of ethambutol, rifampicin, pyrazinamide and isoniazid for a total of nine months, was administered. She recovered well and the submental swelling subsided after completion of the course of treatment. The patient's consent was obtained for this study.

<sup>1</sup>Department of Otorhinolaryngology - Head and Neck Surgery Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

<sup>2</sup>Department of Otorhinolaryngology - Head and Neck Surgery, University of Malaya, Kuala Lumpur, Malaysia

<sup>3</sup>Department of Pathology, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

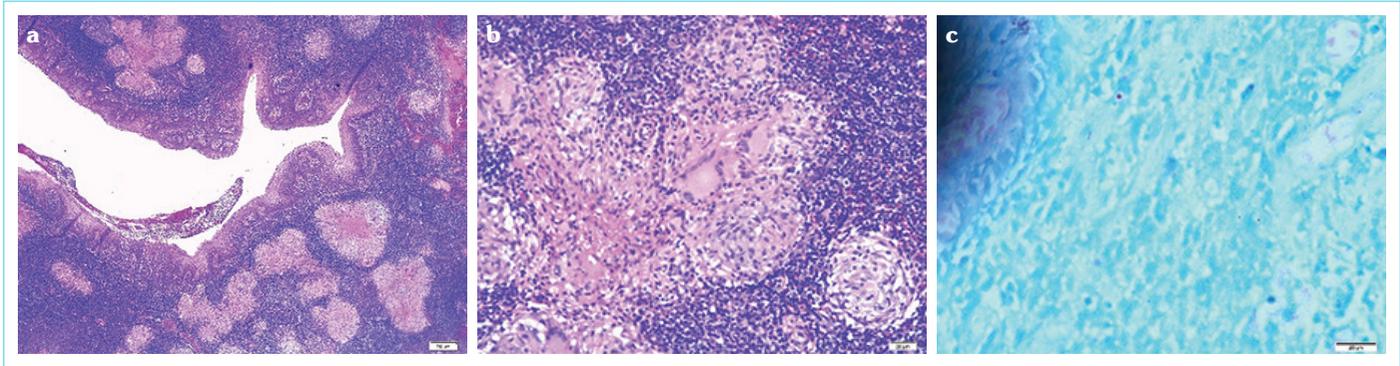
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**Correspondence**  
Lim Chee Chean,  
Queen Elizabeth Hospital, Department of Otorhinolaryngology - Head and Neck Surgery, Kota Kinabalu, Sabah, Malaysia  
Phone: +60 11-11899070  
e-mail: limbie89@gmail.com

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**Figure 1.** (a) Section shows lymphoid tissue covered by stratified squamous epithelium with multiple groups of caseating granulomata (H&E stain, 4x). (b) Caseating granulomata formed by epithelioid histiocytes and occasional Langhans-type giant cells. (H&E stain, 20x). (c) Acid-fast bacillus (Ziehl-Neelsen stain, 60x)

## DISCUSSION

Tonsillar TB can be classified into primary and secondary TB of the tonsils. Primary tonsillar TB occurs without pulmonary TB, whereas secondary tonsillar TB occurs as a result of pulmonary TB causing inoculation of the tubercle bacilli in the tonsils (2). Historically, the main cause of tonsillar TB is due to the ingestion of unpasteurized milk containing the bacteria. Later, Miller et al. (3) concluded that the secondary form is more common with the advent of pasteurized milk and increasing cases of pulmonary TB. Some of the risk factors of primary tonsillar TB include a history of dental extraction, periodontitis and leukoplakia. Immunocompromised individuals due to retroviral disease, substance abuse and chronic alcoholism are also more predisposed to the disease.

Although the tonsil is one of the lymphatic structures with easy exposure to infected sputum, the incidence of tonsillar TB is low, especially in an immunocompetent adult. This can be explained by a few natural protective factors. The thick stratified squamous epithelium of the tonsils provides resistance to invasion by mycobacterium TB (4). Besides, the cleansing action of the saliva and the presence of saprophytes in the oral cavity antagonize colonization of tubercle bacilli.

Patients with tonsillar TB usually present with a sore throat, foreign body sensation, odynophagia, dysphagia and constitutional symptoms. Physical examination may reveal enlarged tonsils, ulceration or white patches over the tonsils and enlarged jugulo-digastric lymph nodes. However, these presentations should alert the physician to the possibility of an underlying malignancy.

The presenting symptoms and clinical findings in tonsils due to tuberculosis are often similar to malignant tumours which make it difficult to differentiate between both the diseases. The presence of persistent cervical lymph node enlargement could occasionally be the inaugural symptom of tuberculosis, either isolated or in association with other clinical findings. A case series of 16 patients with disseminated TB showed that all the patients initially presented with cervical lymphadenopathy (5).

A histopathological examination is mandatory to confirm its diagnosis. In this case, the result displayed characteristic caseation necrosis, epithelioid granuloma and Langhans giant cells. Zie-

hl-Neelsen stain and mycobacterial culture, which were ordered in the same setting were also positive for acid-fast bacilli. Chest X-ray and sputum for acid-fast bacilli were performed to rule out co-existent pulmonary TB. Retroviral status of the patient was also assessed as tonsillar TB, which is more commonly associated with impaired cell-mediated immunity (6).

Some of the other differential diagnosis of tonsillar TB include actinomycosis, midline granuloma, aphthous ulcer, Wegener's granulomatosis and haematological disorders, such as lymphoma. Definitive diagnosis requires histopathological analysis and staining of tissue samples obtained either by punch biopsy or diagnostic tonsillectomy. Nucleic acid amplification tests using a polymerase chain reaction can be performed to improve sensitivity and specificity in highly suspicious cases of TB.

We illustrate here the importance of suspicion in patients presenting with asymmetrical tonsillar enlargement and cervical lymphadenopathy. This is the second reported case of primary tonsillar TB from our institution following an unexpected discovery in an immunocompetent child (2). Moreover, a first reported case of oropharyngeal TB in an immunocompetent neonate has recently been described in the literature that originated from our centre as well (7). This serves as a timely reminder that incidences of tonsillar TB or oropharyngeal TB could be higher, especially in this part of the world where TB is endemic. Suspected patients should be worked up and referred accordingly to the otorhinolaryngology team.

## CONCLUSION

This case report emphasizes that tonsillar tuberculosis should be suspected in patients with asymmetrical tonsils and cervical lymphadenopathy although initial workups for pulmonary tuberculosis are negative. We aim to highlight the possibility that primary tonsillar tuberculosis could be more common in endemic parts of the world even if the individual is immunocompetent. Accurate diagnosis is essential and aids in early initiation of anti-tuberculous medication for complete recovery.

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

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**Conflict of Interest:** The authors have no conflict of interest to declare.

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