

CASE REPORT

Primary tonsillar tuberculosis

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Accepted 7 September 2018

SUMMARY

Upper aerodigestive tract involvement with tuberculosis is relatively rare and may be seen in up to 2% of patients with pulmonary tuberculosis. Isolated tonsil involvement with tuberculosis is not commonly seen in clinical practice. We report a case of a 22-year-old postpartum mother who presented with odynophagia, fever, loss of weight and submandibular swelling of 3 months' duration. Clinical examination revealed a submandibular node, and oropharyngeal examination revealed necrotic slough overlying an enlarged left tonsil. Fine-needle aspiration cytology of the node and histopathological examination of the left tonsillectomy specimen revealed necrotising epithelioid cell granulomas, and stain for acid-fast bacilli was positive in the latter. She was diagnosed with tonsillar tuberculosis and was started on antituberculous treatment following which she improved clinically. This case serves to demonstrate an uncommon presentation of primary tuberculosis and reminds us to consider tuberculosis also as a microbiological aetiology for tonsillitis.

BACKGROUND

Tuberculosis of the tonsil in the absence of pulmonary tuberculosis is an uncommon clinical presentation of extrapulmonary tuberculosis. Our patient presented with isolated tonsillar tuberculosis, and hence we would like to report this relatively rare presentation of primary tuberculosis. Also, in view of the disease affecting her in the immediate postpartum period, we wanted to highlight issues regarding treatment and follow-up.

CASE PRESENTATION

A 22-year-old postpartum woman presented with history of swelling over the right chin associated

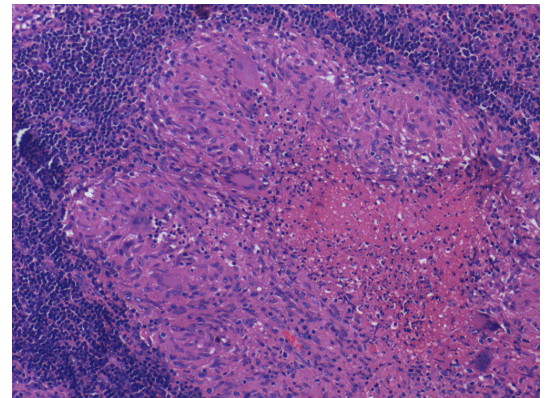


Figure 2 Well-defined epithelioid cell granulomas with Langhans-type of giant cells and caseous necrosis on H&E ($\times 100$ magnification).

with odynophagia, low-grade fever and loss of weight of 4 kg over the past 3 months. She had earlier delivered a healthy baby 3 months ago, and the child was exclusively breast fed. She had earlier attributed her weight loss to her postpartum status. Clinical examination revealed a palpable single, mobile, firm and non-tender left submandibular lymph node of 2 cm size with no evidence of skin changes or ulceration over the node. Oropharyngeal examination revealed left tonsillar enlargement with necrotic-appearing slough overlying it.

INVESTIGATIONS

Blood investigations revealed a haemoglobin of 11.9 g/dL (normal range 11–13 g/dL), total leucocyte count of $6.7 \times 10^9/L$ (normal range $4-11 \times 10^9/L$) and erythrocyte sedimentation rate of 25 mm/hour (normal range 0–20 mm/hour). Liver and renal function tests were normal. HIV ELISA was negative. Tuberculin skin test was positive with

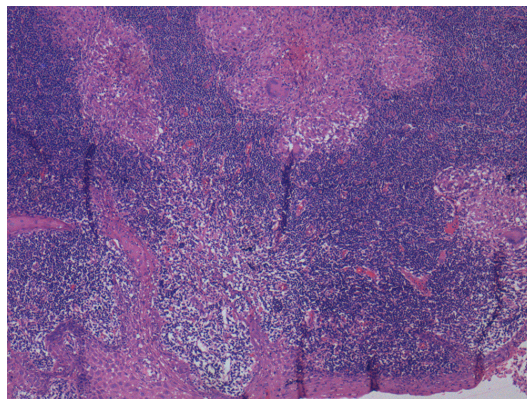


Figure 1 Histopathological examination shows tonsil lined by stratified squamous epithelium with underlying granulomas on H&E ($\times 40$ magnification).

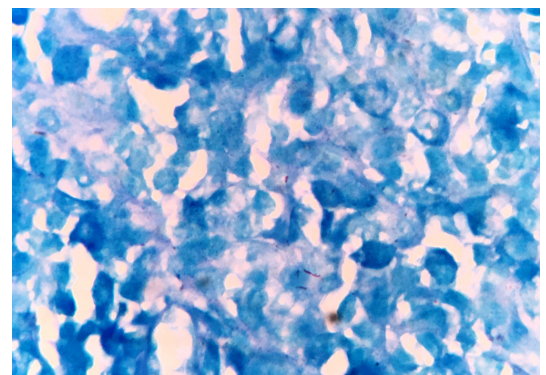


Figure 3 Acid-fast bacilli seen on staining by Ziehl Neelsen technique.



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To cite: Sasikumar S, Ayub I, Kannan S, *et al.* *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2017-223634



Figure 4 Oropharyngeal examination post left tonsillectomy shows caseous necrotic material over the tonsillar fossa.

a measured induration of 20 mm read at 48 hours. The chest skiagram was normal. Sputum microbiological examination for acid-fast bacilli (AFB) was negative by Ziehl Neelsen (ZN) technique. Fine-needle aspiration cytology of the left submandibular node showed necrotising epithelioid cell granulomas and was negative for AFB stain by ZN technique. As the left palatine tonsil appeared necrotic on gross appearance, it was decided to proceed with a left tonsillectomy, biopsy of which showed necrotising epithelioid cell granulomas ((figures 1 and 2) which showed positivity for AFB on ZN stain (figure 3). Oropharyngeal examination immediately post-tonsillectomy showed caseous material over the left tonsillar fossa (figure 4).

DIFFERENTIAL DIAGNOSIS

Considering that our patient had necrotic slough over the tonsil, our differential diagnosis was limited to bacterial tonsillitis or malignant entities that may affect the oropharynx.

TREATMENT

She was started on the regular four-drug antituberculous therapy as per the Directly Observed Treatment Short Course under the aegis of the Tuberculosis Control Program (TCP) of India. This would ensure regular compliance with the medications and follow-up over the course of treatment.

OUTCOME AND FOLLOW-UP

She is on regular follow-up as per the TCP and is showing clinical response to therapy after completing 2 months of therapy.

DISCUSSION

Though tuberculosis infection of the upper aerodigestive tract and the lung share the same risk factors,¹ it is believed that the lower incidence rates of the former may be attributed to local antibacterial properties of the oronasal cavity, contributed by the presence of a stratified squamous epithelial lining covered by saliva and saprophytes, and constant immune surveillance by the Waldeyer's ring.² Tuberculosis of the oral cavity is believed to be due to direct inoculation of the mycobacterium by infected sputum and inhaled infected droplet nuclei.³ However, direct seeding of the tonsil by blood stream mycobacterial infection is possible, as reported by the discovery of coexisting miliary tuberculosis in a patient with tonsillar involvement.⁴ Whatever may be the route of infection as mentioned above, it can be seen that isolated tonsillar involvement in the absence of pulmonary tuberculosis is less likely. In one large case series of patients who had undergone tonsillectomy over 4 years, a retrospective review of histopathological analysis of over 2000 tonsillectomy specimens revealed tuberculosis infection in only one patient.⁵

Sites of involvement in the oronasal cavity include the tongue, nasopharynx, larynx, tonsil and soft palate. In a 10-year case series of patients diagnosed with tuberculosis of the aerodigestive tract excluding the tongue, associated with or without concurrent pulmonary tuberculosis and HIV infection, tonsillar involvement was seen in 6 out of 45 patients (13.3%).⁶

We reviewed available literature on tonsillar tuberculosis published over the last two decades. Some of them had coexisting pulmonary disease.^{4 7-12} Isolated tonsil involvement was reported in the remaining.^{2 3 13-22} Not surprisingly, the majority were from India considering that tuberculosis continues to remain an endemic entity here. The age of presentation is varied, with reports of cases as young as 10 years to as old as 76 years old.^{3 19} Two cases were reported in older patients in the background of adalimumab therapy for underlying rheumatoid arthritis.^{15 22} Interestingly, most of them were male patients. None were reported in the setting of pregnancy or postpartum period. Data on age and sex of patients from our review contrast with the earlier understanding that the disease is common in the young and in females. The most common presentation was sore throat, with some patients in addition reporting hoarseness of voice and difficulty or pain during swallowing, often in association with a clinical picture of recurrent or chronic tonsillitis in most of them. Diagnosis was achieved in all by histopathological examination of tonsillectomy specimens. In a few, microbiological cultures and PCR techniques were additionally employed. In some, ZN stain was negative.^{3 7 13 20} All of them showed clinical response to antituberculous therapy.

Our patient was a young female in her early postpartum period. Though our patient had fever and pain during swallowing, it was the submandibular lymphadenopathy that brought her to the hospital. She also had weight loss which she attributed to her active breastfeeding and immediate postpartum status. She had no evidence of pulmonary tuberculosis. Though she had submandibular lymphadenopathy from which fine needle aspiration cytology (FNAC) was diagnostic of tuberculosis, we proceeded with tonsillectomy in view of the necrotic-appearing tonsil on gross examination. One can argue that the presence of neck lymphadenopathy may exclude defining this patient to have isolated involvement of the tonsil. However, in view of the extent of necrosis on the affected tonsil, it is expected that the draining lymph node would also be infected by the bacilli. We did not perform CT of the neck prior to surgery in view of the patient's financial limitations. As she did not have any

Patient's perspective

Are you sure I have tuberculosis? I agree I have lost weight, but I believe that it was due to my breastfeeding the baby and postpregnancy period. For the last trimester of my pregnancy, I went to my parents' home and after delivery, I have just returned to my husband and in-law's home. If my in-law's find out I have tuberculosis infection, they might ask me to go back to my parents' house or they might ask me to keep away from my baby. Do I have to take medicines for 6 months? Is there a treatment regimen which is shorter in duration? Can I buy the medicines from a local pharmacy without registering at the government tuberculosis centre? That way, my husband will not know I have tuberculosis since the officials at the government centre will ask me to come in person to collect the medicines. Will I transmit the disease to my baby during breastfeeding? Should I give any medicines to prevent infection to my baby?

Learning points

- ▶ Tuberculosis is a rare cause for tonsillitis.
- ▶ Tuberculosis should be considered as a possible aetiology for either chronic or recurrent tonsillitis.
- ▶ Social issues regarding diagnosis and management of tuberculosis should be addressed in order to ensure compliance to therapy.

respiratory symptoms, and her chest skiagram was normal, we did not perform a CT imaging of the thorax either. One may argue that we may have missed a subclinical pulmonary tuberculous focus in this patient. However, we believe that in the setting of florid symptomatic tonsillar tuberculosis, it would have been very unlikely that she would have coexisting pulmonary tuberculosis and still be asymptomatic with respect to the latter.

Specific social issues pertinent to our patient had to be addressed. As per the traditional Indian customs in practice, she had just returned to her husband and in-law's home after her pregnancy, and she was worried about the repercussions that she may face on revealing to them regarding her disease. This made us apprehensive that there may be a possibility that she may hide the diagnosis from her husband and his family and may discontinue treatment. Hence, we felt it best for her to get registered under the government programme for tuberculosis which would ensure compliance to the treatment. She also shared her fears of transmitting the disease to her infant while breastfeeding, caressing and kissing, and enquired if there were any precautions that she should take to avoid disease transmission. We allayed her fears by explaining that chances of transmission will reduce after completing the first 2 weeks of intensive phase-four drug therapy. Also, we reassured her that since her child had received

the BCG vaccine at birth, the child will not require isoniazid prophylaxis.

Contributors SS, IIA and SK: patient care and manuscript preparation. RS: examination and reporting on pathology specimens and manuscript preparation.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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