# Parotid tuberculosis in an immunodeficient patient: A rare case not to be missed

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**SUMMARY**

**Extrapulmonary tuberculosis (TB) poses challenges due to its diverse clinical presentation and the complex diagnosis pathway. It includes parotid TB, which has always been underdiagnosed, mismanaged, delayed treatment initiation, and being among the last diagnosis to be made due to the low level of suspicion. Despite living in an endemic area of TB, it is still uncommon for a primary care doctor to propose the diagnosis at the beginning. Therefore, a late diagnosis would lead to an unforeseen circumstance, especially in an immunodeficient state patient. We report a case of a human immunodeficiency virus (HIV) with a parotid swelling mimicking a cancerous lesion at the initial stage and later showing signs of inflammation. Anti-tuberculous treatment was initiated, improvement was seen, and he had successfully completed 12 months of treatment.**

## INTRODUCTION

Ten million people were reported to have contracted tuberculosis (TB) in 2019 globally, with nearly 1.3 million deaths, making TB the number one infectious killer worldwide. An immunosuppressive state such as HIV contributes to TB mortality, with people living with HIV dying due to TB at 208,000 cases in 2019. Both TB and HIV have a synergistic effect on each other. TB will increase HIV replication and viral heterogeneity; meanwhile, HIV lowers immunity. Hence, predispose hosts to TB infection.[1] Extrapulmonary TB infection is considered stage 4 HIV although TB infection can occur at any stage of HIV progression. Co-infection of TB in people living with HIV can make them 20 times more likely to be ill and three times at risk of succumbing to death than those without. They also tend to have extrapulmonary TB and smear-negative pulmonary TB. A retrospective study from TB national surveillance data from 2014 to 2017 found that about 19.3% had unsuccessful treatment and revealed that extrapulmonary TB and pre-existing illnesses such as HIV are essential critical factors for failed treatment.[2] Thus, a late diagnosis of tuberculous infection in this susceptible community should be avoided.

Parotid TB remained a neglected diagnosis infrequently reported even in endemic regions like Malaysia. As a result, it is rarely encountered and constitutes only 2.5% to 10% of salivary gland TB.[3] However, it is commonly seen in endemic regions such as the African and Asian continents, affecting all ages and gender groups. Clinically, the case presentation always imitates a parotid tumour. Unfortunately, although it is a treatable disease with only anti-tuberculous medication required, most cases undergo unnecessary surgical intervention.[4] Such a dilemma could be avoided if the disease could be detected early. We present a rare case of parotid TB in an immunodeficient patient who presented to our clinic with neck swelling.

## CASE REPORT

A young gentleman aged 38, who was a known case of the retroviral disease since 2013, and recently started on antiretroviral therapy for three months prior to the onset of illness with a CD4 count of 470 presented to our clinic with neck swelling. The painless swelling was located at the left parotid region and progressively enlarged over three months. There were also multiple other lateral neck swellings that appeared over this course of time. He also experienced fever on and off for the past few months, with each episode lasting for two to three days. He received three courses of antibiotics throughout the illness, in which he developed loose stool after antibiotic initiation. However, no improvement was seen. He denied any previous history of TB, obstructive symptoms, prolonged cough, night sweat, constitutional symptoms, contact with any tuberculous pulmonary patient, or facial asymmetry. The physical assessment revealed a non-erythematous parotid swelling measuring 4 × 1 cm, minimally tender on palpation, with a centrally fluctuant area felt (Figures 1 and 2), and also the presence of an ipsilateral enlarged cervical lymph nodes at the level of I, III, and IV. All the swollen nodes were firm in consistency, mobile, non-tender, and not erythematous, measuring around 1 × 1 cm each.

Meanwhile, his facial nerve was intact, as well as his other examination. He was then referred to the otorhinolaryngology specialist clinic with the impression of parotid abscesses to rule out malignancy. He was treated as parotid abscesses in the specialised clinic, and he was then discharged with antibiotics and planned for an ultrasound neck. Ultrasound neck showed a hypodensity area in the parotid region. A chest X-ray was performed and revealed normal lung findings. Later, he presented again with the complaint of discharging pus from the parotid swelling. Proceeded with incision and drainage on the same day, a sample of pus for acid-fast bacilli was sent. A positive result was revealed. Hence, an anti-tuberculous regime was initiated. He responded well to the chemotherapy.

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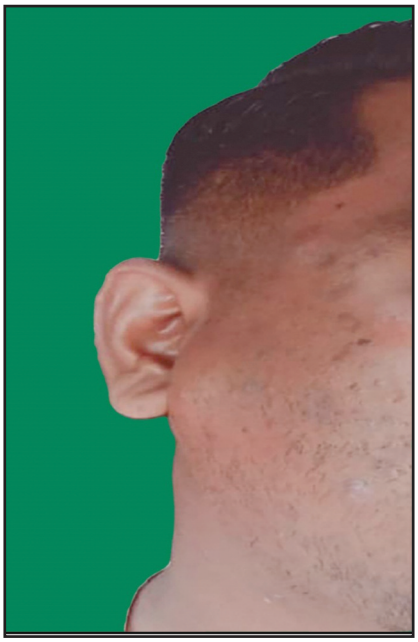

**Fig. 1:** Left parotid swelling (front view).

**Fig. 2:** Left parotid swelling (side view).

## DISCUSSION

In Malaysia, TB is still endemic, with 92 per 100,000 population in 2019. However, a case of parotid TB remains a rare entity to be reported. There were less than 300 reported cases since it was first detected in 1894, and various presentations have been observed.[5] Therefore, it is more challenging for primary care physicians to make early diagnoses. The differential diagnoses for chronic parotid swelling are malignancy, HIV parotitis, amyloidosis, sarcoidosis, sialadenitis, Sjogren's, or polyangiitis granulomatosis. In addition, any factor contributing to TB is also a risk for contracting parotid TB, such as low socioeconomic levels, promiscuity, TB infection, and immunodeficient conditions like this patient.

Generally it presents as an indolent painless parotid swelling mimicking a cancerous swelling, like this case at its initial stage, it is also not uncommon to have an acute infectious state that appeared later in this case. Some authors reported that it could present as a recurrent discharging parotid swelling along with systemic symptoms. In cases with discharging parotid TB, features to suggest infection such as erythema, swelling, and pain are absent. Meanwhile, there are cases with asymptomatic unilateral preauricular swelling that has been observed.[6] Most of them are unilateral parotid swelling; however, bilateral involvement also has been noticed in this disease. Patients with parotid TB can either have coexistence of enlarged cervical lymph nodes or not. The presence of cervical adenopathy with painless parotid swelling, like this case in its initial stage, may confuse the treating physician with parotid malignancy. In addition, the presence of facial nerve paralysis will favour a diagnosis of parotid malignancy, which is not apparent in this case. Meanwhile, co-infected pulmonary and parotid TB has been encountered in quite a few cases. Unlike pulmonary TB, the presence of night sweat, weight loss, and fever are rarely present. The coexistence of pulmonary TB symptoms will guide the general practitioner to diagnose parotid TB earlier, however this was not the case in this patient. Thus, it contributed to the delay in making the diagnosis.

The difficulty in diagnosing parotid TB from the preliminary assessment and in being able to differentiate it from malignancy makes ultrasound the first diagnostic tool to be done. Since ultrasound is an operator dependence imaging, most parotid TB cannot be picked up.[4] Furthermore, most of the lesions showed features of malignancy in ultrasound. Thus, it leads to surgical resection in most cases. One study found that a positive Mantoux test with cervical adenopathy, together with a suggestive lesion found in computerized tomography (CT) or magnetic resonance imaging (MRI), may be helpful to make a diagnosis of parotid TB. We can conclude that with the limited diagnostic radiological modalities, late diagnosis has always been encountered.[5] Thus, ultrasound-guided fine needle aspiration cytology (FNAC) is recommended as the gold standard diagnostic tool, subsequently avoiding unnecessary surgical intervention. As of treatment, a 9–12-month anti-tuberculous treatment will significantly settle the infection.

## CONCLUSION

A high index of the possibility of parotid TB is required when dealing with people living with HIV. On top of that, a chronic parotid swelling that is resistant to multiple attempts of antibiotic course should alert the attending physician of parotid TB, particularly in endemic countries. Due to its varied presentation and difficulty to choose the best preliminary test, perhaps the aid of the Mantoux test and suggestive features of parotitis in ultrasound could be an appropriate initial step for primary care physicians.

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**CONFLICT OF INTEREST**

None to declare.

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