

Extrapulmonary Tuberculosis Presenting as an Infected Preauricular Sinus

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Case Report

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Abstract

Preauricular sinuses are common congenital anomalies which may manifest unilateral or bilateral. This condition is usually asymptomatic but sometimes present with recurrent bacterial infections. Tuberculosis (TB) involving a preauricular sinus is very rare. We report an 18-year-old Malay male who presented with a five days history of painful swelling and purulent discharge from the left preauricular sinus, associated with intermittent fever. He had a recent COVID-19 infection one week prior. Clinical examination revealed fluctuating, tender swelling with purulent discharge over the left side and asymptomatic preauricular sinus on the right side. Pus aspirate tested positive for acid-fast bacilli (AFB), while chest x-ray was clear. The patient was diagnosed with extrapulmonary TB involving left preauricular sinus and commenced on standard anti-tuberculosis therapy. At one-month follow-up, he showed marked improvement, and at six months, infection was resolved then scheduled for surgical excision of the sinus tract. This case highlights the importance of considering TB preauricular sinus infections, particularly in endemic regions, and emphasizes the role of combined medical and surgical management in achieving definitive cure.

Introduction

Preauricular sinus is a benign congenital malformation of the preauricular soft tissues which was first described by Van Heusinger in 1864¹. It happens due to incomplete fusion of the Hillocks of His of the first and second branchial arches². Most remain asymptomatic, but when infected, they present with swelling, erythema, tenderness, and discharge. The common pathogens encountered usually are *Staphylococcus epidermis*, *Staphylococcus aureus*, *Streptococcus viridans*, *Peptococcus* species, and *Proteus* species. These recurrent bacterial infections are indication for surgical excision³.

Tuberculosis, caused by *Mycobacterium tuberculosis*, remains a global health burden. In 2023, it was estimated 10.8 million people developed TB and remained the second leading infectious killer after Covid-19. Tuberculosis accounts for 1.3 million deaths in 2023⁴. In Malaysia, TB remains a major public health problem and is considered endemic^{4,10}. Extrapulmonary TB accounts for 15–20% of cases, and higher among immunocompromised patients⁴. The head and neck region is an uncommon site, and TB of a preauricular sinus is exceptionally rare^{5,6}.

Case Presentation

An 18-year-old Malay male with no known medical condition presented with a five day history of swelling in the left preauricular region. The swelling was painful, fluctuant, and associated with purulent discharge and intermittent fever. He had a recent COVID-19 infection one week earlier. He denied ear discharge, hearing loss, tinnitus, vertigo, nasal or throat symptoms, and systemic features such as weight loss or night sweats.

On examination, he was alert and afebrile, with no facial palsy or cervical lymphadenopathy. Otoscopy showed intact tympanic membranes bilaterally with normal cone of light. The right preauricular sinus was dry, while the left sinus discharged pus with surrounding swelling and tenderness.

Approximately 3 cc of pus was drained and sent for analysis. The pus smear was positive for AFB, confirming extrapulmonary TB.

Table: Summary of Investigations

Investigation	Result	Reference/Remarks
Pus AFB	Positive	Suggestive of TB
Chest X-ray	Clear	No pulmonary involvement
Erythrocyte Sedimentation Rate (ESR)	31 mm/hr	Mildly elevated
White Blood Cell Count (WBC)	$11 \times 10^9/L$	Slight leucocytosis
Haemoglobin (Hb)	15 g/dL	Within normal range
Platelet Count	$355 \times 10^9/L$	Within normal range
Renal Profile (RP)	Normal	
Liver Function Tests (LFT)	Normal	

He was started on anti-TB regimen as per the Malaysian management of TB guideline Akurit-4(fixed dose combination of Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol) for first two months, followed by Isoniazid and Rifampicin for the next four months. At one month follow-up, symptoms had resolved. At six months, he was scheduled for surgical excision of the sinus tract under general anesthesia.

Discussion

Infected preauricular sinuses are usually bacterial, with Staphylococcus aureus the most common pathogen³. TB infection of a preauricular sinus is extremely rare, with only sporadic cases reported^{5,6}. The pathogenesis may involve direct inoculation, hematogenous spread, or reactivation of latent bacilli. In this case, the absence of pulmonary disease suggested localized extrapulmonary TB.

COVID-19 may have transiently altered the patient’s immune response, potentially unmasking latent TB, as described in reports of TB–COVID coinfection⁷.

Diagnosis of extrapulmonary TB is challenging because symptoms are nonspecific. AFB smear positivity is diagnostic, but culture remains the gold standard. Molecular tests such as Xpert MTB/RIF improve sensitivity and provide rapid resistance data⁸. Histopathology of excised tissue often shows granulomatous inflammation with caseating necrosis, which is highly suggestive of TB⁹.

Treatment follows the Malaysian management of tuberculosis (Fourth Edition) guideline 2022: Akurit-4 (fixed dose combination of Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol) for first two months, followed by Isoniazid and Rifampicin for the next four months¹⁰. Fixed-dose combinations improve adherence. Monitoring for hepatotoxicity and optic neuritis is essential.

Surgical excision is the definitive treatment of preauricular sinuses with recurrent infection. In TB cases, excision is best performed after completion of medical therapy to reduce recurrence and surgical complications^{2,11}. Techniques such as the supra-auricular approach reduce recurrence compared with simple excision^{11,12}. Supra-auricular approach extends the incision superiorly, allowing dissection down to the temporalis fascia and better visualization of branching tracts^{11,12}.

This case emphasizes the need to consider TB in preauricular sinus infections in endemic regions. Early diagnosis and combined medical–surgical management optimize outcomes.

Conclusion

TB of a preauricular sinus is rare but clinically important. In endemic areas, atypical or persistent sinus infections warrant mycobacterial evaluation. Early diagnosis with AFB/molecular testing, followed by proper medical therapy and definitive surgical excision after infection control can achieve excellent outcomes.

Declarations

Declaration of participant consent to publish: Written informed consent was obtained from the patient for participation in this case report and for the publication of their clinical details, investigations, images, and any potentially identifiable information. The patient was informed that the case report would be published and made publicly available.

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Figures

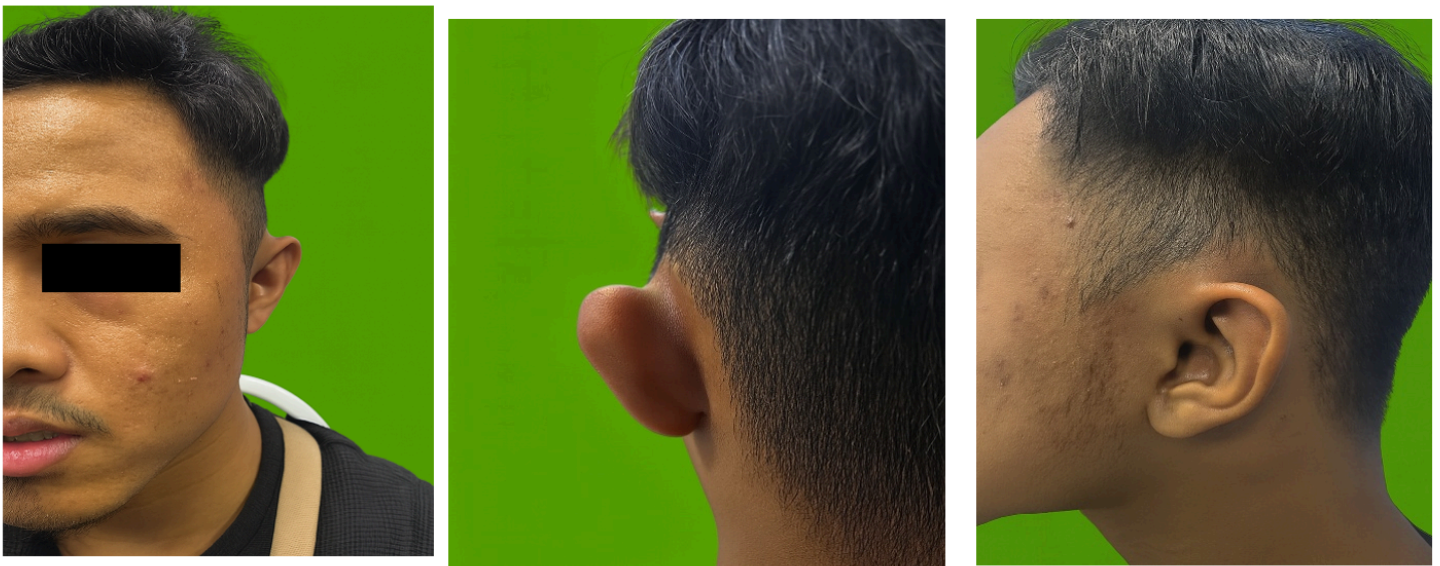


Figure 1

Left preauricular swelling



Figure 2

Left preauricular swelling resolved -post completion Anti-TB (Six months later)



Figure 3

Right preauricular sinus (not infected)

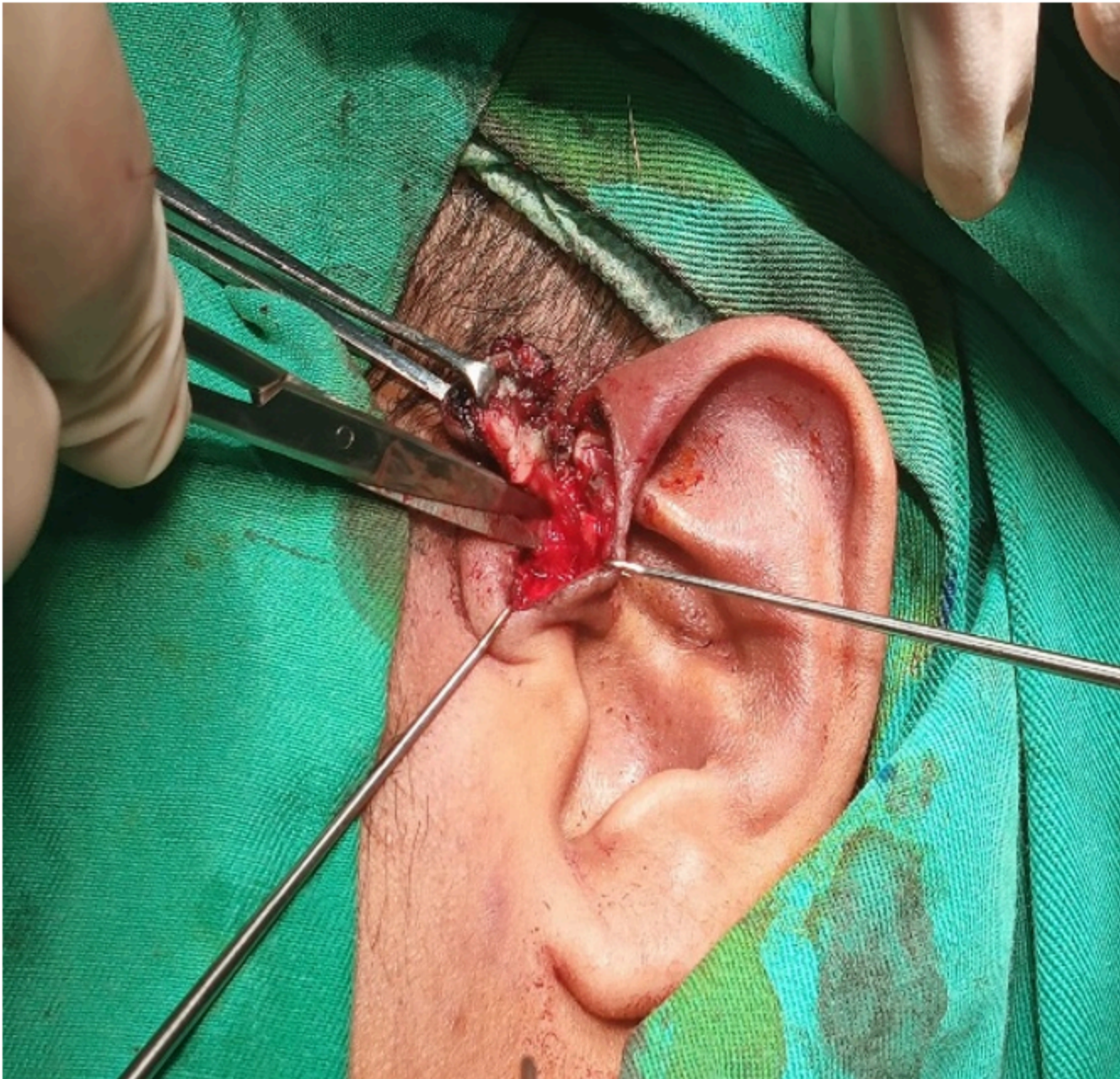


Figure 4

Intraoperative photograph - excision of left preauricular sinus under general anesthesia. The preauricular sinus tract has been carefully identified, traced in its entirety, and excised to ensure complete removal



Figure 5

Excised specimen of the left preauricular sinus, measuring approximately 1.5 cm