

Tuberculous Pre-Auricular Sinus: A Case Series of Rare Clinical Presentation and Management



Bernard Kok Haur Teoh MD¹, Li Yun Lim MD, MMed (Otol-HNS)², Khim Soon Vong MD, MMed (Otol-HNS)

¹Department of Otorhinolaryngology, Sarawak General Hospital, Kuching, Sarawak, Malaysia

²Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine and Health Sciences, University Malaysia Sarawak (UNIMAS), Kota Samarahan, Sarawak, Malaysia

EP
179

RSCH ID-23-04067-UVG

Introduction

Tuberculosis (TB) is an infectious granulomatous disease caused by the bacillus *Mycobacterium Tuberculosis*. It is primarily seen in the lungs with head and neck tuberculosis (HNTB) accounting for 10-35 % of extrapulmonary tuberculosis (EPTB)(1). Preauricular sinus (PAS) is a congenital malformation due to the incomplete or defective fusion of the six auditory hillocks during the sixth week of gestation(2). Preauricular sinus tuberculosis (PASTB) is an unusual entity in head and neck tuberculosis (HNTB). This case series explores the management approach for three patients of different ages diagnosed with PASTB.

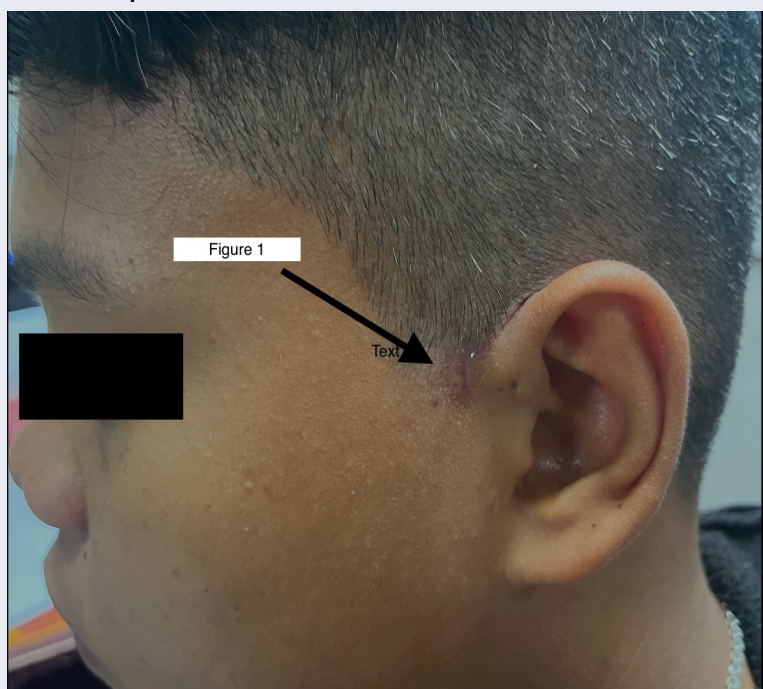
Case presentation

Case 1

A 9-year-old girl presented with left pre auricular swelling for one month with pus discharge. Incision and drainage under local anaesthesia was done. Pus for acid fast bacilli (AFB) was scanty positive.

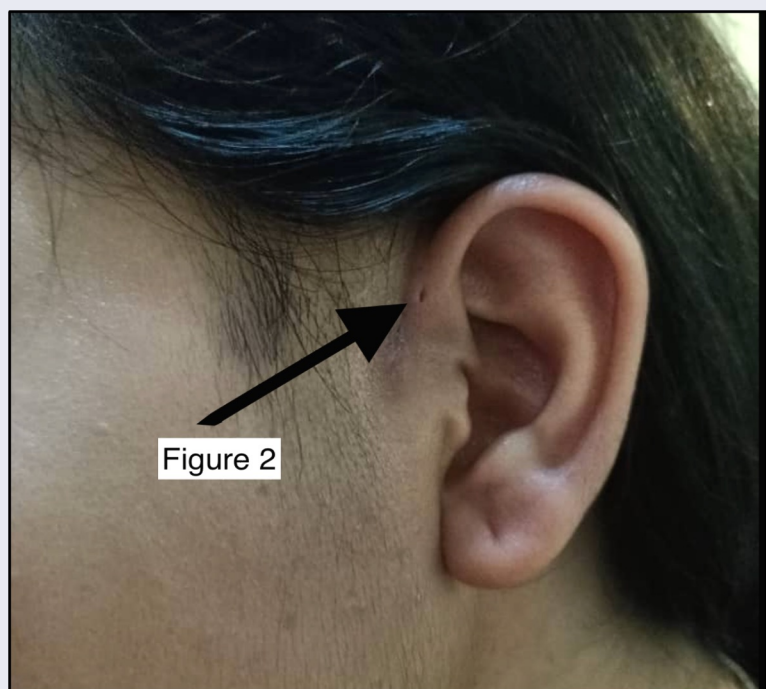
Case 2

A 14-year-old boy with no known medical illness presented with left recurrent PAS infection (**Figure 1**). He underwent incision and drainage procedures twice and completed 2 courses of oral amoxicillin and clavulanate. Pus for AFB was positive (1+).



Case 3

A 21-year-old lady with no known medical illness presented with first episode of left preauricular swelling for 6 days. She had a left fluctuant erythematous preauricular swelling measuring 3 cm x 4 cm. 5 ml of pus was obtained after incision and drainage. The pus for AFB was positive (2+) (**Figure 2**).



Discussion:

Tuberculosis (TB) is an endemic communicable disease in Sarawak, Malaysia. The incidence of EPTB cases reported in Malaysia has increased from 13.3% in 2015 to 15.7% in 2020(4). The most common sites of manifestation of HNTB are cervical lymph node(s)(87.9%), followed by larynx(8.7%), pharynx, tonsils, nasal cavity, ears, paranasal sinuses and salivary glands(3.4%) (1). Hence, PASTB is rare even in EPTB. The occurrence of preauricular sinus (PAS) ranges from 0.1% to 10%, showing variations among different countries and ethnic populations, with a higher prevalence in Asia from 1% to 6%(6).

Preauricular sinus infections often manifest with symptoms such as swelling, redness, discomfort, itching, and drainage. If left untreated, it can potentially escalate to the formation of a preauricular abscess. The primary pathogens associated with preauricular sinus infections are typically Staphylococcal species, with *Proteus*, *Streptococcus*, and *Peptococcus* species being less commonly implicated(5).

PASTB, an uncommon disease with a non-specific clinical manifestation, presents with no systemic symptoms such as cough, night sweats, or fever and absence of pulmonary involvement. In all the cases, standard blood tests, chest X-rays, the tuberculin skin test, and sputum examinations for (AFB) all yielded negative results as seen in our cases.

The diagnosis of PASTB in our cases was established by the presence of AFB in pus which provided faster detection. The pus tested negative for TB culture and sensitivity, and no granulomas were observed in the histopathology analysis of the tissue samples.

Non-sputum based interferon gamma release assays (IGRA) such as QuantiFERON-TB-GOLD (QFT-TB) and T-SPOT are recommended for individual suspected with latent TB. A study done in adult patients suspected of TB lymphadenitis showed that showed that QFT-TB had 78.8% sensitivity and 95.5 % specificity(7). Another meta-analysis estimate the diagnosis accuracy for an IGRA is 95 % for both sensitivity and specificity(8). Findings indicate that IGRA may be used in assisting the diagnosis of HNTB.

All patients were treated with anti-tuberculous therapy for extrapulmonary TB which consisted of two months of an intensive phase with ethambutol, isoniazid, rifampicin, and pyrazinamide, and four months of a maintenance phase with rifampicin and isoniazid. Surgical excision was performed after completion of anti-TB therapy. All the patients recovered well with no symptoms of recurrence.

Conclusion :

A high index of suspicion for diagnosis of PASTB is needed in cases of recurrent infection not responding to conventional antibiotics and surgical treatment to ensure an optimal outcome. Therefore, we strongly recommend that pus samples from all infected PAS patients to be sent for AFB and TB culture testing to avoid delays in diagnosis and treatment, particularly in our endemic region.

References:

1. Qian XU, Albers AE, Nguyen DT, Dong Y, Zhang Y, Schreiber F, Sinikovic B, Bi X, Graviss EA. Head and neck tuberculosis: literature review and meta-analysis. *Tuberculosis*. 2019 May 1;116:S78-88.
2. Tan T, Constantinides H, Mitchell TE. The preauricular sinus: a review of its aetiology, clinical presentation and management. *International journal of pediatric otorhinolaryngology*. 2005 Nov 1;69(11):1469-74.
3. World health organization. *Global tuberculosis report 2022*.
4. Malaysia MOH. *Management Of Tuberculosis 4th Edition. Clinical Practice Guideline. 2021 (4th ed.) (2021)*, p.11
5. Scheinfeld NS, Silverberg NB, Weinberg JM, Nozad V. The preauricular sinus: a review of its clinical presentation, treatment, and associations. *Pediatric dermatology*. 2004 May;21(3):191-6.
6. Lee KY, Woo SY, Kim SW, Yang JE, Cho YS. The prevalence of preauricular sinus and associated factors in a nationwide population-based survey of South Korea. *Otology & Neurotology*. 2014 Dec 1;35(10):1835-8
7. Liu Q, Li W, Chen Y, Du X, Wang C, Liang B, Tang Y, Feng Y, Tao C, He JQ. Performance of interferon- γ release assay in the diagnosis of tuberculous lymphadenitis: a meta-analysis. *PeerJ*. 2017 Apr 12;5:e3136.
8. Kim KH, Kim RB, Woo SH. The efficacy of the interferon- γ release assay for diagnosing cervical tuberculous lymphadenitis: A prospective controlled study. *The Laryngoscope*. 2016 Feb;126(2):378-84.