

Three Rare Cases of Otolaryngology Tuberculosis: A Report of Extra-Pulmonary Tuberculosis Cases in the Larynx, Tonsil and Parotid

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ABSTRACT

Tuberculosis (TB) remains a global health problem, and in the South-East Asia Region, 15% are extra-pulmonary TB (EPTB). The occurrence of EPTB in the upper airway, tonsil and the parotid gland is a rare finding. Moreover, EPTB in these regions would present mimicking symptoms as common ENT cases. The authors found three cases of EPTB at the department of ENT-Otolaryngology, West Nusa Tenggara General Hospital. Patients presented with non TB specific symptoms, with no indications of being immunocompromised. However, after further examinations, the authors concluded the findings of EPTB.

Keywords: Otolaryngology Tuberculosis, Extra-Pulmonary, Larynx, Tonsil and Parotid.

1. INTRODUCTION

Tuberculosis (TB) remains a global health problem, with an estimated 10 million people diagnosed with tuberculosis in 2018 (1). The South-East Asia Region (SEARO) being one of its main contributors, with Indonesia being recognised as a high-burden country of TB and MDR TB. Of all TB cases in the SEARO, 15% is extra-pulmonary TB (EPTB) [1,2]. EPTB is defined as an infection by Mycobacterium Tuberculosis which affects tissues and organs outside the pulmonary parenchyma [3]. We report three rare cases of EPTB with three different anatomic locations, presented at the Ear Nose and Throat-Otolaryngology (ENT) clinic of the West Nusa Tenggara General Hospital. All of the three cases did not show common TB symptoms and signs of being immunocompromised. However, the three cases showed symptoms that are commonly found in an ENT clinic. Thus, our initial approach was not in regard of EPTB.

The three cases points out the importance of additional work-up such as Gene X-pert and histopathological examinations in determining the diagnosis of EPTB. Furthermore, our report also intends to raise awareness on the possibility of making an EPTB diagnosis, especially in TB endemic regions.

2. CASE REPORT

2.1 Case 1

A 57-year-old male patient came to the ENT department with a chief complaint of hoarseness for two months. The patient did not recall any excessive use of vocals and denied any episodes of chronic productive cough and no record of weight loss since the first complaint developed. The patient did not recall any family member who complains of chronic productive cough. However, the patient admitted being an active smoker since teenager, normally one pack a day.

2.2 Case 2

A 36-year-old female came to the ENT department with a chief complaint of pain when swallowing for three months prior to the first visit. There was no history of chronic productive cough and chronic fever. Initial physical examination found an enlargement of the left tonsil (T3, more than the paramedian line between the base of the tongue to the oral midline) but right tonsil was within normal limits. Moreover, there was an enlargement of a lymph node in the level II region of the left neck.

2.3 Case 3

A 14-year-old female patient presented to the ENT department with a growing mass in front of the right ear. The patient first recognised the mass three months before the visit; however, in the last two weeks, the patient felt there was an enlargement to with an additional mass in the right upper neck. The patient did not record any signs of weight loss, or symptoms of malignancy.

2.4 Investigation and Differential Diagnosis

2.4.1 Case 1.

Physical examination showed normal respiratory auscultation findings. Furthermore, Chest x-rays found the lungs are within normal limits and endoscopy to the larynx found suggestions of mild inflammation. Several symptomatic medicines were given to the patient, and vocal rest was suggested. However, two months after the initial visit, hoarseness became more severe with the presence of dyspnoea.

Re-examination found signs of fibro-infiltrate on the right suprahilar and the apex of the left lung. Endoscopy found a yellowish mass (caseous tissue) on supraglottis with the narrowing of 40% rima glottis (figure 1.). Gene-Xpert testing detects the presence mycobacterium TB, moreover, rifampicin resistance was not detected. We concluded that the final diagnosis was tuberculosis of the larynx.

2.4.2 Case 2

Fine Needle Aspiration Biopsy (FNAB) of the lymph node shows chronic lymphoid hyperplasia without signs of malignancy. Chest x-ray examination did not show any abnormality. Laboratory findings of completed blood count did not show concerning abnormalities, and no indication of the patient is immunocompromised (leucocyte count of 7400, lymphocyte count 36%). The initial diagnosis was chronic tonsillitis with a tumour of the left tonsil as the differential diagnosis.

However, upon tonsillectomy, histopathology examination found there is tuberculosis on the left tonsil, with the presence of a wide necrotic substance, an epitheloid group forming a granuloma, and the presence of Datia Langhans cells (figure 2.). Therefore, the final diagnosis was tuberculosis of the left tonsil.

2.4.3 Case 3

On physical examination, found a painless solid mobile mass with a diameter 2 cm in the right parotid region and other mass in level II right neck with diameter 1.5 cm (figure 3.). CT scan was then performed and found a soft tissue mass on superficial right parotid (there was no sign of malignancy) (figure 4). An FNAB was

performed, and the results found a chronic inflammation with no signs malignancy. Finally, the diagnosis was benign neoplasm in the right parotid.

The patient then underwent superficial parotidectomy and followed by histopathology examination. The result of histopathology found wide necrotic materials, groups of epitheloid cells, and Langhans multinucleated giant cells. Thus, the final diagnosis was tuberculosis of the parotid.

2.5 Treatment

As the final diagnosis was made, all three patients were given standard anti-tuberculosis regimen that include Rifampicin, Isoniazid, Ethambuton, and Pyrazinamid for the initial two months. Followed by four months of Isoniazid and Rifampicin.

Two months after the initial anti-tuberculosis regimen, the patients no longer presented their chief complaints, also no additional symptoms were present during the visit.

3. DISCUSSION

TB is a granulomatous infectious disease mainly affecting the lungs; however, EPTB occurs up to 30%. EPTB may involve any organ due to lympho-hematogenous dissemination of the primary infection, with lymph nodes and pleura being the common site of EPTB. Furthermore, the upper airway, tonsils, and parotid are rare sites of EPTB infection [3,4].

In the first case, the patient presented symptoms of hoarseness with no chronic symptoms such as productive cough and fever that would lead a suspicion on TB or any chronic infections. Thus, the initial workup would seek the possibility of any issues with the vocal cord or the surrounding; this includes vocal cord injury and neoplasms. However, endoscopy results found caseous tissue which may indicate a TB process. Histopathological and Gene Xpert examination was performed to determine a TB infection in this patient. Gene Xpert is a nucleic acid amplification test that simultaneously detects Mycobacterium tuberculosis complex (MTBC) and resistance to rifampicin (RIF) [5]. In this patient, the Gene Xpert detected the presence of MTBC with no Rifampicin resistance. Subsequently, this patient was given anti-tuberculosis regiment for six months.

The chief complaint on the second case was chronic pain when swallowing, which is a common presentation in an ENT clinic. Furthermore, epidemiological findings suggest the most prevalent diagnosis of a chronic sore throat is tonsillitis [6]. Thus, the approach, in this case was in respect to chronic tonsillitis, and by physical examination, we found enlargement of the left tonsils. However, after tonsillectomy, the histopathology

examination found signs of tuberculosis. Therefore, according to the WHO EPTB guideline, this patient was given the six months anti-tuberculosis regimen [7].

The third case presents a complaint of a growing mass in front of the right ear, and the initial approach was to consider it as a neoplasm of the parotid gland. FNAB results show signs of chronic inflammation. FNAB in parotid lesions has a sensitivity of 81 – 100% and specificity of 94 – 100%. However, when FNAB findings are deemed inconclusive or inadequate, such cases may undergo inadvertent surgery [8]. Subsequently, histopathology specimens concluded a diagnosis of lymphadenitis tuberculosis.

Due to its different clinical courses in different organs and mimicry of other diseases such as neoplasms causes difficulties in establishing the EPTB diagnosis. Furthermore, EPTB in the locations such as larynx, tonsils, and the parotid glands, are a rare entity where it only makes up 2 – 4% of EPTB cases [4]. Early diagnostic tools utilise radiological examination including USG, CT and MRI; however, this leads to less specific results [9]. Therefore, the diagnosis of EPTB requires histological confirmation. Consequently, anti-tuberculosis prescribing may be delayed until the prompt treatment of other differential diagnosis has not shown any remission of the primary chief complaint and histological confirmation is available.

4. CONCLUSION

The three cases that were presented at our ENT department shows how the clinical signs EPTB are similar to common ENT cases such as vocal cord polyps, chronic tonsillitis and neoplasm of the parotid glands. However, one should consider the possibility of making EPTB as a differential diagnosis where TB is endemic and if the patient is known to be immunocompromised to prevent delays in giving anti-tuberculosis treatment.

REFERENCES

- [1] WHO. *Global Tuberculosis Report 2018*. Geneva: World Health Organization; 2018. WHO Publication. 2018.
- [2] Main S, Lestari T, Triasih R, Chan G, Davidson L, Majumdar S, et al. Training for tuberculosis elimination in Indonesia: Achievements, reflections, and potential for impact. *Trop Med Infect Dis*. 2019;4(3).
- [3] Ramirez Lapausa M, Menendez Saldana A, Noguerado Asensio A. Extrapulmonary tuberculosis: an overview. *Rev Española Sanid Penit*. 2015;17:3–11.
- [4] Güngör S, Soğukpınar Ö, Yalçınsoy M, Afşar Dönmez BB, Akkan O, Akkütük Öngel E, et al. Rare Extrapulmonary Tuberculosis in Immunocompetent Adults: Experience of a Tertiary Hospital. *Eur Arch Med Res*. 2019;35(3):115–9.
- [5] Yusuf NW. *Rapid diagnosis of tuberculosis using Xpert MTB/RIF assay - Report from a third world country*. Pakistan J Med Sci [Internet]. 2014 Nov 24;31(1). Available from: <http://pjms.com.pk/index.php/pjms/article/view/6970>
- [6] Carter S, Laird C. 10 assessment and care of ENT problems. *Emerg Med J*. 2005;22(2):128–39.
- [7] World Health Organization. *Guidelines for Treatment of Tuberculosis and Patient Care*. Who. 2017.
- [8] Koç A, Cengiz K, Şengör A, Han T. Tuberculosis of the parotid gland. *Otolaryngol - Head Neck Surg*. 2005;133(4):640.
- [9] Wei Y, Xiao J, Pui MH, Gong Q. Tuberculosis of the parotid gland: Computed tomographic findings. *Acta radiol*. 2008;49(4):458–61.