

Tuberculous parotitis in an immuno-competent adult: A rare clinical entity

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Abstract

Majority of the cases of Tuberculosis (TB) occur in the pulmonary system, other extrapulmonary sites are rare, accounting for 15% of all TB cases. Among the extrapulmonary manifestations, TB parotitis is extremely rare, only few cases were reported in Africa despite the endemicity of the disease. We present a 23 years old man who developed a right infra-auricular swelling of three month duration, with no clinical or laboratory evidence of immunosuppression or TB in the lungs or other part of the body. High index of suspicion is required to diagnose this rare condition and the place of histological examination is imperative.

Introduction

Tuberculosis (TB) is a major public health problem of international concern. According to WHO Global TB Report 2019, Nigeria has the highest tuberculosis burden in Africa and ranked sixth among the eight high TB burden countries in the world.^{1,2} The incidence of tuberculosis in Nigeria account for about 4% of the estimated global incidence.^{1,3} Majority of the cases of tuberculosis occur in the pulmonary system, however there are other rare extrapulmonary sites which account for about 15% of all TB cases.⁴ The common sites for extrapulmonary TB include: lymphatic tissues, abdomen, genitourinary tract, skin, meninges, bones and joints.⁵ Among the extrapulmonary manifestations, TB of the parotid gland is extremely rare, only few cases were reported in Africa despite the endemicity of the disease.⁶

The occurrence of tuberculosis in the parotid gland present a diagnostic challenge to the otorhinolaryngologist. Clinically, it usually presents as a slow growing swelling usually indistinguishable from a parotid neoplasm. The diagnosis of parotid tuberculosis needs a high degree of clinical suspicion but this is commonly overlooked by

the treating physician.⁷ The rarity of this condition has been the main drawback to diagnose the entity by conventional means of identifying *Mycobacterium tuberculosis*, the organism responsible for the disease. As a result, histology of a surgical specimen has been commonly used to diagnose TB parotitis.

Extra-pulmonary TB is known to occur commonly in immuno-compromised individuals. People living with HIV are 26-31 times more likely to develop TB compared to the general population.⁸⁻¹⁰ Therefore, we present a case of 23 years old immuno-competent patient with an unusual histological diagnosis of parotid tuberculosis.

Case Report

A 23 years old undergraduate student presented to our clinic with three months history of right infra-auricular swelling. The swelling was initially painless, slowly increasing in size until two weeks prior to presentation when it became painful with sudden increase in size. He had no swelling in the neck or other part of his body. There was no history of fever, cough, weight loss or history of contact with chronically coughing patient. Review of other systems was unremarkable. He had normal findings on general physical examination. Local examination revealed a right infra auricular swelling measuring about 7x5 cm in size with positive differential warmth, tender, soft-to-firm in consistency and fluctuant at the center. Facial nerve was grossly normal. He has no cervical lymphadenopathy. The Stenson's duct opening was patent and discharging clear fluid. Fine Needle Aspiration Cytology (FNAC) of the swelling revealed benign features, and a high resolution Ultrasound Scan (USS) showed multiple hypochoic mass lesions of varying sizes within the parotid gland with area of abscess collection (Figure 1). Full blood count with differentials, erythrocyte sedimentation rate, serum electrolyte urea and creatinine were all normal and retroviral screening was nonreactive. He had incision and drainage of the abscess. The aspirate Microscopy, Culture and Sensitivity (MCS) revealed pus with epithelial cells and gram positive cocci in clusters. However, no growth was yielded after 48 hours incubation. He was placed on a 14 days course of broad spectrum oral antibiotics. He developed persistent discharge of clear fluid from the site of the drainage, which continued for about 3 months, necessitating right superficial parotidectomy. Sample of the parotid tissues was sent for histology, which confirmed tuberculosis (Figure 2 and 3). Chest

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Key words: Tuberculosis; parotid gland; extrapulmonary tuberculosis; parotitis.

Conflict of interest: The authors declare no conflict of interest.

Availability of data and materials: All data underlying the findings are fully available.

Ethics approval and consent to participate: Ethical approval was obtained from the research and ethics committee of Aminu Kano Teaching Hospital.

Consent for publication: The patient gave his written consent to use his personal data for the publication of this case report and any accompanying images.

Received for publication: 11 September 2020.
Revision received: 16 December 2020.
Accepted for publication: 22 December 2020.

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Pyramid Journal of Medicine 2020; 3:108

doi:10.4081/pjm.2020.108

X-ray, Mantoux test, sputum Acid Fast Bacilli (AFB) and GeneXpert were all not suggestive of TB. He was reviewed by the infectious disease specialist and was commenced on anti-TB drugs. The wound was healed one month after commencement of anti-TB therapy.

Discussion

Tuberculosis is a communicable disease and a major cause of ill health worldwide. It is one of the top 10 causes of death globally and the leading cause of death from a single infectious cause. It is caused by the bacillus *Mycobacterium tuberculosis* which typically affects the lungs, but can also affect other sites.¹ Extrapulmonary sites vary from cervical lymph node, bone, skin, meninges, abdomen and many more, but the involvement of parotid glands is extremely rare and uncommon even in endemic areas.¹¹ The first reported case of tubercular parotiditis was diagnosed in 1893 by C. De Poali (in Janmeja *et al.*),¹² and since then less than 200 cases have been reported in the litera-

ture.¹³ Parotid tuberculosis can occur both as a primary entity when the mycobacterium ascends into the salivary gland via its duct from a focus of mycobacterial infection in the oral cavity or secondarily through hematogenous or lymphatic spread from a primary lung focus.^{11,14} Parotid TB has a wide clinical presentation. It commonly present as a painless mass which results from infection of intracapsular or pericapsular lymph nodes, parotid abscess, sialadenitis or as pre-auricular fistula.⁷ Parotid tuberculosis becomes a real diagnostic problem in the absence of clinical disease in the lung and without any systemic signs and symptoms.¹⁵ Our case presented with a primary parotid abscess with no involvement of the lung or any other extrapulmonary sites.

Traditionally, tuberculous salivary gland disease is diagnosed with a combination of AFB staining, culture, FNAC, and histology in some cases.¹⁶ FNAC is advocated as a useful and reliable technique for the diagnosis of tuberculosis in the parotid gland,^{14,17,18} due to its high sensitivity of 81–100% and specificity of 94–100%.⁷ However, FNAC is not always contributory to a diagnosis in large parotid mass as these are often necrotic.¹⁹ AFB staining requires the presence of many bacteria to be detected histopathologically, and culture can take up to 6 weeks to return a result.¹⁵ Radiological investigations, such as USS, computed tomography, and magnetic resonance imaging are used in detecting intra-parotid tubercular mass, but associated findings are not specific as most of the images mimic neoplasms.²⁰ But when ultrasound guided-FNAC is used, the diagnostic yield is improved and it has been shown to corroborate postoperative histologic findings.²¹ When ultrasonography and FNAC are inconclusive, parotidectomy is performed, and the sample is sent for histological examination. Histopathological features of tuberculosis is caseating granulomas.¹³ In our case, diagnosis was made histologically after superficial parotidectomy. The patient did not have any radiographic evidence of either active or latent pulmonary tuberculosis on chest X-ray and GeneXpert was negative. This affirmed that the diagnosis of extrapulmonary TB remains challenging even with the availability of GeneXpert.

The patient was placed on 6 months course of anti-TB under the directly observed therapy short course (DOTs), within 4 weeks of commencing the drugs, the wound healed completely. Patient had completed the treatment and currently on follow up, and no complication was noticed.

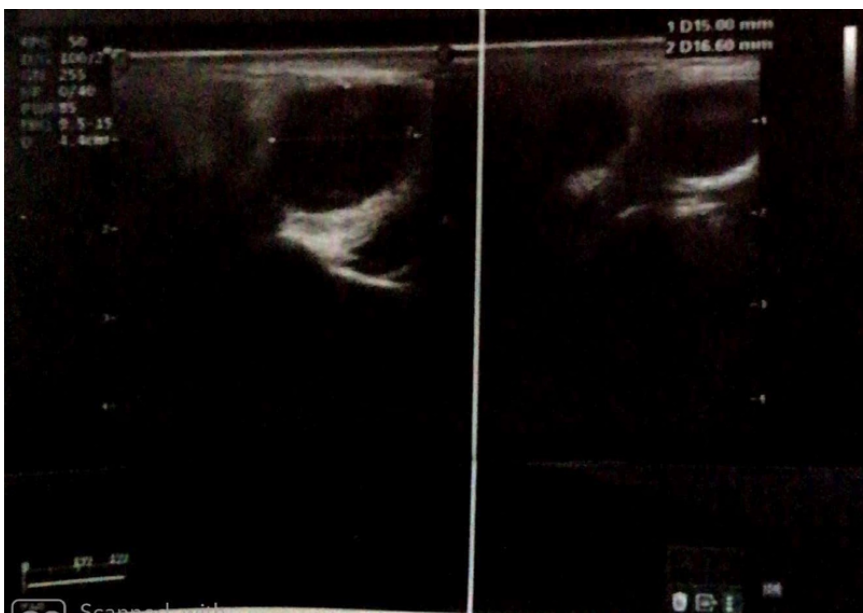


Figure 1. High resolution ultrasound scan showing multiple hypoechoic mass lesions of varying sizes within the parotid gland with area of abscess collection.



Figure 2. Sample of the parotid tissues confirming TB.

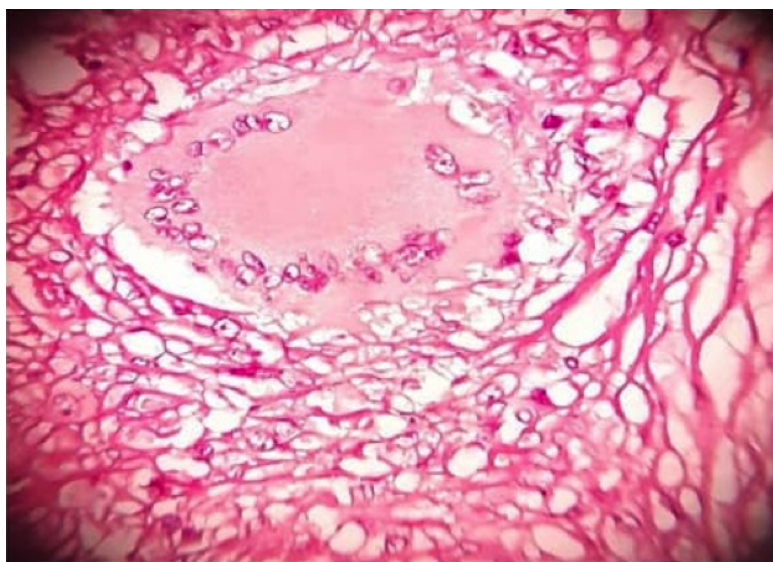


Figure 3. Sample of the parotid tissues confirming TB.

Conclusions

Despite being a rare condition, the need to consider parotid tuberculosis in the diagnostic work up of diffuse parotid swelling cannot be over emphasized. This will reduce unnecessary surgery for this condition, since chemotherapy is the main stay of treatment.

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