

## TUBERCULOUS PAROTITIS: CLINICAL EVALUATION OF TWO CASES

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### Abstract

Although parotid gland involvement with tuberculosis is the most common among salivary glands tuberculosis, tuberculous parotitis is rare. Parotis tuberculous is clinically indistinguishable from a parotid tumour and also diagnostic techniques may fail to reveal the diagnosis.

We have been presented two cases with diagnosis of parotid gland involvement with tuberculous. We made fine needle aspiration cytology to our patients as preoperative.

It was observed granulomatous sialoadenit harmony with tuberculosis in one patient and non-specificity in the other patient. Diagnosis confirmed with histological examination after parotidectomy. After that, the patients were treated with long-term antituberculosis treatment.

In conclusion, it should be remembered to the tuberculous parotitis in the differential diagnosis of masses which appears to be tumour and swelling in parotitis.

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### Introduction

Tuberculosis is a necrotizing granulomatous disease with varied clinical presentations and a wide distribution. Extrathoracic forms of the disease account for approximately 20% of overall active tuberculosis and can be seen in the kidneys, bones, meninges, and lymph nodes<sup>1,2</sup>. Cervical lymphadenitis is the most common form of head and neck tuberculosis<sup>3</sup>. The major sites of involvement of the head and neck tuberculosis are cervical, laryngeal, nasal, and nasopharyngeal<sup>4-6</sup>. However, tuberculous parotitis is extremely rare, even in countries in which tuberculosis is endemic<sup>7,8</sup>.

Less than 200 cases have been reported since the first description of this condition by von Stubenrauch in 1894<sup>9,10</sup>. Tuberculous parotitis usually presents as a localized mass resulting

from intracapsular or periglandular lymph nodes<sup>3</sup>. The disease involves the parenchyma of the gland, either through hematogenous spread or from infection of the lymph nodes within or around the parotid gland<sup>3</sup>.

The diagnosis of parotid tuberculosis needs a high degree of clinical suspicion. If there is no history of pulmonary tuberculosis and no relevant symptoms, diagnosis can be extremely difficult<sup>2</sup>. Therefore it is generally overlooked by otolaryngologists and most cases are undergoing unnecessary surgery<sup>2</sup>.

It was presented two patients with tuberculous parotitis, applied to the otolaryngology department, cumhuriyet university hospital, Sivas, Turkey, together with clinical findings, review the literature and hypothesize on its.

### Case 1

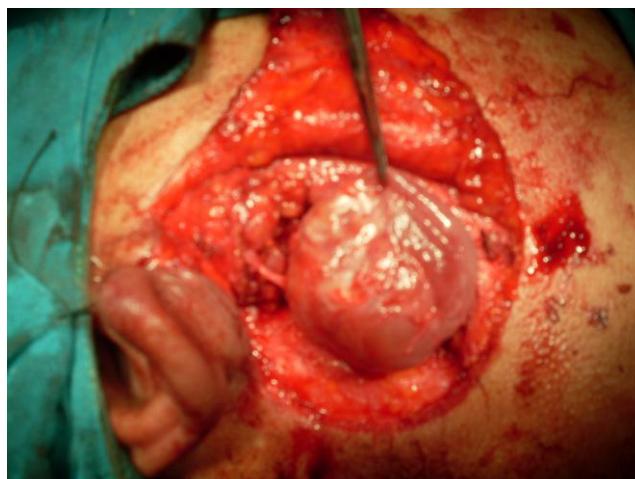
55-year old female patient admitted to our department of otorhinolaryngology with complaining of swelling localized in the right parotid region during 9-10 years. There was no tuberculous in the patient's history of previous. During his physical examination, we noticed a soft mass, of movable, painless, without heat rise

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and the sensitivity, of approximately 4×7 cm in diameter (figure 1), in the right parotid region. It was observed that there was no palpable lymphadenopathy in the neck examination.



**Figure 1.** The mass appearance in parotid gland of patient with tuberculous parotitis.

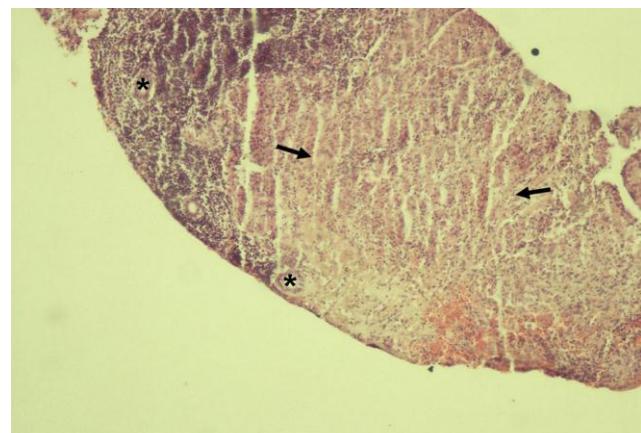
We determined a minimal edema in the mouth of stenon's channel. The patient's routine findings such as whole blood count, biochemistry and chest x-ray were normal. However, sedimentation rate was 27 mm/hr. It was observed non-specific results in sialography. In parotid ultrasonography examination, we determined also a solid mass with small cystic areas, septated and diameter of 4×7 cm. It was observed non-specific results in fine needle aspiration cytology (FNAC). The right superficial parotidectomy was performed to the patient under general anesthesia and the mass was removed. It was reported by pathology as granulomatous (tuberculous) parotitis. In addition, it was observed acid-alcohol resistant bacteria in tissue with EZN stain.

## Case 2

57-year old female patient admitted to our department of otorhinolaryngology with complaining of swelling localized in the left parotid region during 7-8 years. The patient's routine laboratory tests and chest x-ray were normal. In addition, The fine-needle aspiration biopsy was performed to the patient.

It was reported granulomatous sialadenitis, which epitheloid histiocytes, lymphocytes with caseification necrosis, according to FNAC result. It was diagnosed

granulomatous (tuberculous) parotitis with histopathologic examination after superficial parotidectomy (Figure 2). In addition, it was shown acid-alcohol resistant bacteria in tissue with EZN stain. Patient was included postoperative anti-tuberculosis treatment.



**Figure 2.** Granulomatous sialadenitis showing epitheloid histiocytes (arrows) and peripheral lymphocytes with ductuli (\*) (H&E;X100).

## Discussion

Tuberculous parotitis is one of the rare diseases indistinguishable from tumor with physical examination and diagnostic imaging techniques and formed mass in parotid<sup>11</sup>. Despite the presence of parotid tuberculosis is rare, parotid tuberculosis constitute 2.5 % to 10% of salivary gland tuberculosis<sup>12</sup>. Although tuberculous parotitis is usually encountered as a secondary, there are cases, which are not determined as a primary focus of tuberculosis, settled only in the salivary glands<sup>13</sup>.

In our cases, it could not be determined the focus of tuberculosis except parotid gland. Parotid gland can occur in two forms. One is local form that spreads to the intra or periglandular lymph nodes and the other one is diffuse parenchymatous disease resembling common parotid inflammation. Parotid gland tuberculosis possibly occurs by two different ways. First, it may begin as an infection of the teeth, tonsillar tissue or by autoinoculation with infected sputum, which reaches the parenchyma and/or lymphatics of the parotid gland by the afferent lymphatics or by ducts. Secondly, the parotid gland may be infected by metastasis from lungs by a haematogenous or lymphatic route<sup>14,15</sup>.

The definitive diagnosis is made by histological examination. The cases, with tumors and tuberculosis, is very rare. The diagnosis of tuberculosis parotitis is usually after parotidectomy. It is difficult to distinguish tumor tissue with unilateral parotid tuberculosis by imaging techniques and clinically<sup>11</sup>. Laboratory studies such as sedimentation and tuberculin tests are also nonspecific. Although sialography shows focal abscess in gland, it gives to the bacterial sialoadenitis results. In their study of Casselman and Manuscu, they suggest that although conventional radiography and sialography is useful methods in inflammatory or diffuse diseases, computed tomography is better than magnetic resonance imaging (MRI)<sup>16</sup>. However, computer tomography (CT) can not exactly distinguish to inflammatuar mass from benign and malign mass. Although focal and granulomatous processes is seen in Ga-67 sintigraphy, it is not specific<sup>17</sup>.

If the possibilty of tuberculosis in mass is thought, FNAC can use and it can also give opportunity to bacteriologic examination<sup>18</sup>. We made FNAC to our patients as preoperative. It was observed granulomatous sialoadenit harmony with tuberculosis in one patient and non-specificity in the other patient. Diagnosis confirmed with histological examination after parotidectomy. After that, the patients were treated with long-term antituberculosis treatment.

The treatment of tuberculous parotitis is an application of antituberculosis chemotherapy. Therefore, if disease diagnose with FNAC before surgery, the necessity of parotidectomy can be controversial. Since tuberculosis can be diagnosed initially by FNAC and tuberculosis treatment is primarily medical, FNAC would have helped us avoid unnecessary surgery. Another advantage of fine needle aspiration biopsy is that biopsy specimens may provide drug sensitivity of cultures. This technique helps in diagnosis of atypical mycobacterial disease, and appropriate treatment of resistant tuberculosis<sup>3</sup>. The sensitivity of FNAC has been found to be 80% while its specificity is 93%<sup>3</sup>. Since it is not pathognomonic differentiating diagnosis of other granulomatous diseases and can be leading false positive results, no anti-tuberculosis chemotherapy is suggested in all time and surgical intervention is suggested especially malignancy is expected. FNAC causes false positive results especially in large and necrotic

parotid gland neoplasms<sup>19</sup>. However, in the absence of definitive diagnosis due to the reasons such as false-positive rate may need to parotidectomy. In addition, It should be also considered that tumor may be together with the tuberculosis. If there is a doubt in relation to diagnosis, parotidectomy should be made to verify histological<sup>18</sup>.

Parotid gland tuberculosis has mostly been diagnosed by histopathological examination of the parotidectomy specimen. However; it can be diagnosed reliably by FNAC. Hence FNAC avoids the need of surgery and risk of facial nevre paralysis in a medically treatable condition. Athough tuberculosis parotis is rare, it should be included in the list of differential diagnoses for a parotid mass.

## Conclusions

As a result, it should be remembered to the tuberculous parotitis in the differential diagnosis of masses which appears to be tumour and swelling in parotitis.

## Declaration of Interest

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