

# *Mycobacterium Tuberculosis* Infection within a Warthin Tumor: A Case Report and Literature Review

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## Abstract

**Context:** The co-existence of tuberculosis and a Warthin tumor in the parotid gland is extremely rare. **Case Report:** A 46-year-old male presented with a mass in the left parotid region of 6-month duration. The patient's history was only remarkable for a facial swelling, night sweats and a 38.5 C° fever. A 2 × 3-cm mobile, non-tender, mass with a smooth surface was palpated on left parotid tail. CT examination showed a well-defined 30 mm in diameter tumor mass in the left superficial lobe of the parotid gland. A superficial parotidectomy was performed. The final pathological diagnosis of the parotidectomy specimen was reported as a Warthin tumor and epitheloid granulomas with caseification necrosis. Purified protein derivative (PPD) was 30 mm in enduration. Two weeks after the antituberculosis treatment fever declined to normal values and night sweats decreased. **Conclusion:** Tuberculosis can also be seen in parotid tumors which can coexist or mimic pleomorphic adenoma, Warthin tumor.

**Keywords:** Tuberculosis, Warthin tumor, Parotid gland

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## Introduction

Warthin tumor is the second most-common tumor of the parotid gland, representing for approximately 14-30% of parotid tumors. In contrast to this, tuberculosis of parotid gland is rare, with so far 200 cases reported in the literature. Extrathoracic forms of tuberculosis account for 20% overall of tuberculosis cases and among these, tuberculosis lymphadenitis is the most common form, especially in cervical lymph nodes.<sup>[1]</sup>

The co-existence of tuberculosis and a Warthin tumor in the parotid gland is extremely rare. This is the new case of this combination.

## Case Presentation

A 46-year-old male presented with a mass in the left parotid region of 6-month duration. The patient's history was only remarkable for a facial swelling, night sweats and a 38.5 C° fever. There were no other symptoms such as pain, facial paralysis, cough associated with this swelling. His past medical history was nonrevealing. There was no family history of tuberculosis. On physical examination, a 2 × 3-cm mobile, non-tender, mass with a smooth surface was palpated on left parotid tail. The physical examination was otherwise unremarkable. Routine laboratory tests, and a chest radiograph were normal. Ultrasound examination showed a well-defined, hypochoic solid mass in the superficial lobe of the left parotid gland accompanied with the lymph node in same region. CT examination showed a well defined 30 mm in diameter tumor mass in the left superficial lobe of the parotid gland [Figure 1]. A superficial parotidectomy operation was performed under general anesthesia. The lymph nodes were also excised. The final pathological diagnosis of the parotidectomy specimen was reported as a Warthin tumor and epitheloid granulomas with

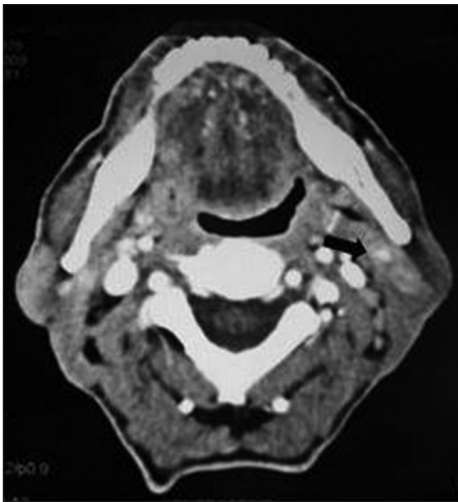
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**Figure 1:** A unilateral hyperdensity with cystic appearance, 3 cm in diameter located in left parotid gland (black arrow)

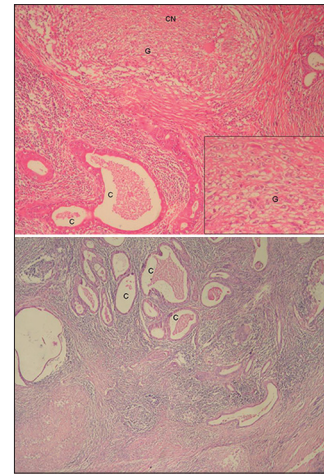
caseification necrosis [Figures 2]. An intradermal test with purified protein derivative (PPD) was performed and it was 30 mm in endurance. Antituberculosis treatment with isoniazid, rifampicin, pyrazinamid and ethambutol was started for a 6-month duration. Two weeks after the antituberculosis treatment fever declined to normal values and night sweats decreased.

### Discussion

Warthin's tumor is a common benign tumor of parotid glands. They are bilateral in 10-15% of the cases and multicentricity is common (10-20%). Only 10% of cases have their origin in the deep lobe of the parotid gland. The tumor is mostly present as a nodular, painless, slow-growing mass in the tail of parotid gland.<sup>[2]</sup>

Warthin tumors are well-encapsulated lesions with cystic and solid areas formed by epithelial elements and lymphoid stroma. The epithelial component can undergo a metaplastic change to squamous, mucous cells or ciliated cells. The lymphoid stroma with germinal centers consist of primarily of B lymphocytes.<sup>[3]</sup>

Tuberculosis of the parotid gland presents in two forms: One resembles benign tumors as a slow growing, firm, localized unilateral mobile mass;<sup>[4]</sup> the second presents as a diffuse paranchymal involvement, sometimes with fistulas. More than 50% of extrapulmonary tuberculosis occurs in patients without pulmonary disease Most of the patients have non-specific chest radiographs and blood counts.<sup>[5]</sup> There are no specific signs of tuberculosis masses in ultrasound, CT or MRI examination. Fine needle aspiration cytology is useful but not helpful in every case. Incisional biopsy causes the risk of fistula formation. Especially in the



**Figure 2:** Cystic lesions (c) at ×40 magnification stained with hematoxylin and eosin. Caseification necrosis (CN) with Langerhans-type giant cells (g)

localized forms, most cases have been diagnosed after superficial parotidectomy, as in our case. The tuberculin skin test is also important. It is not possible to show the microorganism by an acid-fast stain in every case because the number of microorganisms may not be enough.<sup>[5]</sup> This is also a limitation of the present case report. PCR as a direct molecular detection of *Mycobacterium tuberculosis* complex from clinical samples may be a good way to demonstrate the tuberculosis infection especially because it is available from formalin fixed pathologic tissue specimens.<sup>[6]</sup> The typical histology of tuberculosis presents as granulomas with caseous necrosis, epitheloid cells, and Langerhans cells due to low concentrations of organisms in the tissue, acid-fast bacillus may not be demonstrable.

Although Warthin tumors are the most common parotid tumors associated with other tumors, there are few cases showing the coexistence of tuberculosis with Warthin tumors in the literature.<sup>[7,8]</sup> In 1959, the first case of tuberculosis and associated with a Warthin tumor was reported.<sup>[9]</sup> In Seifert's series of 275 Warthin tumors and in Suoglu's series of parotid gland tuberculosis one case of this coexistence was diagnosed in each series.<sup>[10,11]</sup> Watanabe has presented one case of parotid gland and one case of submandibular gland Warthin tumor and the coexistence with tuberculosis.<sup>[7]</sup> Wu and Chen. has also reported a concomitant occurrence of tuberculosis infection within a Warthin tumor.<sup>[12]</sup> In the present paper we have added a new case of this type of combination with a detailed review of both diseases. Microbiological analysis should be done for such a rare coexistence in parotid tumors. In conclusion, tuberculosis can also be seen in parotid tumors which can mimic pleomorphic adenoma and Warthin tumor.

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