Clinical History:

The patient was admitted with an 11-month history of a chronically draining left ear. The ear discharge was purulent and had not diminished after multiple courses of oral antibiotics. The patient noted progressive hearing loss on the left. There was also temporomandibular joint dysfunction.

Imaging Findings:

A chest film was normal. The patient had temporomandibular joint dysfunction. Intact facial nerve function was confirmed. Physical examination showed total perforation of the left tympanic membrane, purulent discharge from the middle ear and a cervical abscess medial to the sternocleidomastoid muscle (Bezold's abscess). The diagnosis of tuberculosis was confirmed by microscopy and cultivation of infected material.

CT demonstrated a soft tissue mass in the middle ear, spreading into the external auditory canal, with bone destruction of the middle ear structure and a large bony defect in the mastoid, associated with a mass of soft tissue retroaural (Bezold's abscess).

The patient was treated with both medical and surgical methods including systemic antituberculous agents (oral isoniazid, rifampin and pyrazinamide) and mastoidectomy.

Ear drainage and temporomandibular joint symptoms were resolved after 12 months of therapy.

Discussion:

Tuberculous otitis is an uncommon disease. Mycobacterium tuberculosis infects the middle ear cleft either by the haematogenous route or by direct extension from the upper respiratory tract via the Eustachian tube. The typical clinical features of tuberculous otitis are painless aural discharge, which may have started months to years beforehand, associated with progressive conductive hearing loss. Examination typically shows a unique large tympanic membrane perforation.
Tuberculosis of the temporal bone can cause destruction of the ossicles, a cervical abscess medial to the sternocleidomastoid muscle (Bezold's abscess), facial nerve paralysis, temporomandibular joint involvement and both conductive and sensorineural hearing loss.

CT and MRI are the procedures of choice for evaluating both intracranial and extracranial injuries that often accompany temporal bone tuberculosis. In this case, CT findings included abnormal soft tissue in the middle ear, mastoid and external auditory canal with Bezold's abscess and destruction of the glenoid fossa of the temporomandibular joint.

However, the CT findings are not pathognomonic; the differential diagnosis of tuberculous otomastoiditis should include changes similar to otomastoiditis caused by pyogenic bacteria, sarcoidosis, syphilis, blastomycosis, lymphoma, acquired cholesteatoma, Wegener's granulomatosis, adenocarcinoma and even some glomus tumours. Definitive diagnosis requires the identification of M. tuberculosis within the suspect lesion.

The therapy of choice was mastoidectomy with appropriate antituberculous chemotherapy to avoid recurrent infections. Because of its rarity, there can be a significant delay in the diagnosis and treatment of tuberculosis of the middle ear.

**Differential Diagnosis List:** Tuberculosis of the temporal bone

**Final Diagnosis:** Tuberculosis of the temporal bone

**References:**


Figure 1

Description: Histological section of tuberculoid granulation tissue with central necrosis surrounded by epitheloid and Langhans' giant cells (arrow). Origin:
Description: This non-contrast-enhanced CT image shows destruction of the middle ear structures (long arrows), erosion of the lateral wall of the mastoid (short arrows), with an associated retroauricular soft-tissue mass (arrowheads). IAC: Internal Auditory Canal. Origin:
Description: CT with bone window shows destruction of the glenoid fossa of the temporomandibular joint (arrowheads). IAC: Internal Auditory Canal. Origin: