Atypical presentation of cutaneous tuberculosis and a retropharyngeal neck abscess

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Abstract
A 70-year-old Asian man with noninsulin-dependent diabetes presented with a 4-month history of left-sided otitis externa and right-sided facial palsy. Physical examination of the left ear revealed a punched-out ulcerative lesion on the tragus, an edematous and inflamed external auditory canal, and a purulent nonmucoid discharge. Computed tomography of the brain and neck demonstrated a large retropharyngeal abscess, an abscess in the left parapharyngeal space, and a small collection adjacent to the right carotid sheath at the level of C4; the cervical vertebrae and lungs were normal. Microscopy of drained pus and histology of left ear and neck node biopsies identified tuberculosis. The patient was started on antituberculosis drug therapy, but he died within 2 weeks of treatment. We discuss the characteristics of this unusual presentation of tuberculosis infection.

Introduction
Tuberculosis is reemerging worldwide. The spread of multidrug resistance and the interaction between tuberculosis and human immunodeficiency virus (HIV) infection are responsible for this surge.1 The incidence of cutaneous tuberculosis is rising in areas where HIV infection and multidrug resistance are relatively prevalent.2 Even so, tuberculosis affecting the skin is still rare. When it does occur, it is often confused with other granulomatous diseases.3 Retropharyngeal abscesses in adults are also rare. When they occur, they are often secondary to chronic tuberculosis of the cervical spine.4

To the best of our knowledge, a combination of external ear tuberculosis and deep-neck retropharyngeal and parapharyngeal space abscesses has not previously been reported in the literature. In this article, we describe such a case, which also featured facial nerve palsy on the opposite side.

Case report
A 70-year-old Asian man with noninsulin-dependent diabetes was referred to our ENT clinic with a 4-month history of left-sided otitis externa and right-sided lower motor neuron facial nerve palsy. He reported dysphagia for solids, and he had progressively lost weight and appetite over the 4-month period. He had no history of neck pain or stiffness, coughing, breathing difficulties, or recent contact with a tuberculous patient.

On examination, the patient was cachectic and dehydrated. A punched-out ulcerative lesion was present on the tragus of the left ear (figure 1). The left external auditory canal was edematous and inflamed, and it produced a purulent nonmucoid discharge. The external ear on the right side was normal, but the tympanic membrane contained a dry central perforation. The patient’s facial palsy was classified as House-Brackmann grade V. His right eye was affected by ectropion and exposure keratopathy. Findings on examination of the throat were unremarkable, and his chest was clinically clear.

Laboratory testing revealed that the patient’s leukocyte, neutrophil, lymphocyte, urea, and electrolyte values were normal, but his C-reactive protein level was elevated (201 mg/L). Initial ear swabs taken in the clinic grew Candida species.

Computed tomography (CT) of the brain and neck demonstrated a large retropharyngeal abscess that extended from the subtemporal area to the level of the base of the tongue (figure 2). A second abscess was seen in the left parapharyngeal space adjacent to the parotid gland and sternocleidomastoid muscle, and another small collection was present adjacent to the right carotid sheath at the level of C4. The cervical vertebrae were not involved. Mastoid air cells were normal on the right but deaerated on the left. The right middle ear cleft was normal, but the left exhibited inflammatory mucosal thickening. The chest x-ray was clear.

Theretropharyngeal and parapharyngeal space abscesses were drained via an external approach. Biopsies were taken of the punched-out lesion and a left neck node that was discovered during drainage. The corrugated drains were
left in the retro- and parapharyngeal spaces for 72 hours. The pus from the deep neck spaces was found to contain caseating granulomas with Langerhans’ giant cells and acid-fast bacilli (AFB) on Ziehl-Neelsen staining; this finding confirmed a Mycobacterium tuberculosis infection. Similarly, the pinna and lymph node biopsies were positive for M tuberculosis. However, sputum and urine samples were negative for AFB.

The patient was started on a four-drug antituberculosis regimen recommended by the infectious diseases unit: ethambutol and rifampin/isoniazid/pyrazinamide. However, he developed an acute abdomen associated with abdominal distention and died within 2 weeks. There was no clinical evidence of ongoing abdominal tuberculosis, but we believed that the patient’s death was related to the M tuberculosis infection. Postmortem examination confirmed the presence of disseminated tuberculosis in both the chest and abdomen.

Discussion
The combination of cutaneous disease, retropharyngeal abscess, and parapharyngeal abscess is an unusual presentation. In our patient, the presence of diabetes and his age may have played a significant role in his disease.

The increase in the incidence of cutaneous infection with M tuberculosis today has been attributed to the increase in the number of immunocompromised and HIV-infected patients. Cutaneous tuberculosis is notorious for its long latency period. It is acquired either endogenously or exogenously, and it is often confused with other granulomatous diseases. The diagnosis, which is often difficult, requires correlation among clinical findings, findings on diagnostic tests (e.g., AFB smears), culture results, and most recently, the results of polymerase chain reaction assays.

Our patient had lived in an area of southern Asia with a high prevalence of tuberculosis. It was difficult to ascertain when he had been exposed to the disease. Prior to referral to our department, he had been treated as a case of otitis externa. This case illustrates the difficulty of making a clinical diagnosis. In 1982, Levin-Epstein and Lucente described this difficulty and called tuberculous cervical lymphadenitis (scrofula) “the dangerous masquerader.”

However, the presence of the classic punched-out ulcer, as seen in our patient, allows for a clinical diagnosis of tuberculosis to be made.

Treatment regimens for cutaneous tuberculosis are
similar to those for systemic tuberculosis. Several cases of retropharyngeal abscess secondary to tuberculosis of the cervical vertebrae have been reported, but to the best of our knowledge, there has been no previous report of a retropharyngeal tuberculosis abscess (1) with a cutaneous abscess and facial nerve palsy and (2) without involvement of the cervical vertebrae. Our case further complicates the entire picture and supports the view of Farina et al. that the number of atypical presentations of tuberculosis is rising because of an increase in the size of the immunocompromised population and the increase in drug resistance. It would appear that our patient's ear disease was the source of the infection in his deep neck space. The validity of this presumption is supported by the fact that his initial symptoms were the ear symptoms and the fact that he showed no evidence of pulmonary or cervical vertebral disease.

We do not have a clear understanding of the patient's facial nerve palsy on the opposite side, considering that his middle ear cleft on that side was normal on CT. Patients presenting with retropharyngeal abscess commonly report an insidious onset, fever, neck pain, dysphagia, and hoarseness. Patients can rapidly deteriorate as the abscess causes stridor and threatens airway patency. CT and magnetic resonance imaging are useful imaging techniques in these situations. Retropharyngeal abscess is drained via an external approach, and medical treatments are the same as those for systemic disease.

Our patient had abdominal pain and distention shortly before he died. We suspected abdominal involvement, which was confirmed at autopsy. This case illustrates the need for early diagnosis and the need for a high index of suspicion when a case of otitis externa does not respond to conventional treatment. The fatal outcome may have been prevented if the diagnosis had been made earlier and treatment instituted earlier.

References