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Large Retropharyngeal Abscesses in an Immunocompetent Adult Patient with Disseminated Tuberculosis

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Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
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Conflict of interest: None declared

Patient: Male, 46
Final Diagnosis: Generalized tuberculous lymphadenitis with retropharyngeal abscesses and disseminated tuberculosis
Symptoms: Lymphadenopathy • dysphagia • weight loss
Medication: —
Clinical Procedure: —
Specialty: Infectious Diseases





Objective: Unusual clinical course
Background: The retropharyngeal abscess is a rare presentation of head and neck tuberculosis. The pathogenesis of the abscess formation in the retropharyngeal space in the adult is controversial.

Case Report: We report a case of large retropharyngeal abscesses in a 46-year-old man with disseminated tuberculosis. The patient had severe progressive dysphagia, weight loss, and a slowly enlarging bilateral cervical mass during a period of three months. His posterior pharynx wall was bulging and red, and both tonsils were enlarged and congested. The neck had an abscess of 5 cm in diameter that was firm, tender, and warm along the left sternocleidomastoid muscle. Palpable bilateral lymphadenitis was detected in the submandibular, cervical, axillary, and inguinal regions. A computed tomographic (CT) scan of the neck revealed large bilobulated retropharyngeal abscesses. A liver ultrasound showed multiple hypoechoic lesions. A Ziehl-Neelsen smear for acid-fast bacilli was positive from different abscess samples, and mycobacterial cultures subsequently yielded *Mycobacterium tuberculosis*. Antituberculous therapy was begun and the retropharyngeal abscesses were aspirated by external incision with complete drainage and relief of symptoms.

Conclusions: Large retropharyngeal abscess is a rare entity in which *Mycobacterium tuberculosis* etiology should be considered, especially in endemic countries, and the diagnosis may be difficult because symptoms and signs are influenced by abscess size and time of onset, or if the etiology is not suspected.

MeSH Keywords: *Mycobacterium tuberculosis* • Retropharyngeal Abscess • Tuberculosis, Lymph Node

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Background

Tuberculous retropharyngeal abscess (TBRPA) is extremely rare, even in populations with a high incidence of tuberculosis (TB). Infection of the retropharyngeal space results most commonly from contiguous spread from an adjacent focus of infection. Retropharyngeal abscess secondary to TB of the cervical spine is a recognized condition; however, without evidence of cervical osteomyelitis, it is an uncommon condition [1]. The following case report illustrates a form of generalized tuberculous lymphadenitis with TBRPA and disseminated TB. From cervical lymphadenitis, *Mycobacterium tuberculosis* may continue to spread via the lymphatic system.

Case Report

A 46-year-old man was hospitalized for evaluation of lymphadenopathy, dysphagia, and weight loss. He had been previously healthy until three months prior to admission, when he developed weakness, malaise, chills, night sweats, odynophagia, dysphagia, and a bilateral cervical mass. The patient's symptoms persisted, and 15 days before his admission, the patient had progressive dysphagia, weight loss, and a slowly enlarging bilateral cervical mass.

His medical history was significant for smoking of 21 years' duration (20 cigarettes per day). He denied having any risk factors for HIV infection and he had no known exposure to TB. The patient's family history was remarkable in that his mother died of cancer of the larynx.

His physical examination revealed a chronically ill man with hoarseness. His temperature was 36°C, his blood pressure was 110/70 mm Hg, and his pulse was 100 beats/minute. His posterior pharynx wall was bulging and red. Both tonsils were symmetrically enlarged and congested. His tongue had adherent white plaques. He had palpable bilateral lymph nodes of different sizes (1 to 3 cm) in submandibular, cervical, axillary, and inguinal regions. Furthermore, in his neck, a mass of 5 cm in diameter was firm, tender, and warm along the left sternocleidomastoid muscle. There were no other abnormal findings.

Laboratory studies revealed a hemoglobin level of 14.6 g/dL, white blood cell count of 7.6 mm³ (lymphocytes of 460 cells/uL with absolute CD4 T and CD8 T cell count of 256/uL and 71/uL), sodium of 120 mmol/L, albumin of 2.8 g/dL, alanine aminotransferase (ALT) of 38 U/L, aspartate aminotransferase (AST) of 59 U/L, phosphatase alkaline of 220 U/L, and a total bilirubin of 1.0 mg/dL. Two serologies for antibodies to HIV-1 and HIV-2 were negative.

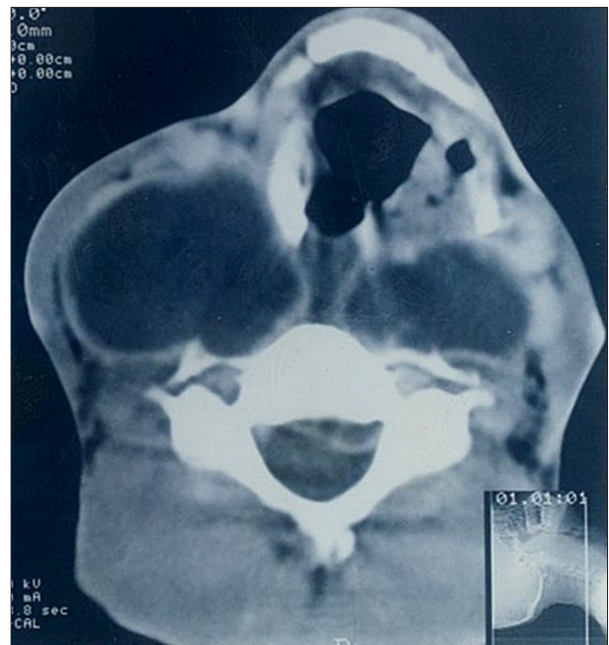


Figure 1. Computed tomographic (CT) scan of the neck showing large hypodense lesions in the retropharyngeal space.

A chest radiograph was normal and computed tomographic (CT) scan of the neck revealed a large bilobulated retropharyngeal abscess on either side of the midline (Figure 1). Empirical treatment with clindamycin and itraconazole was begun.

The aspirate smear of the cervical lymph nodes demonstrated acid-fast bacilli (AFB) with Ziehl-Neelsen staining. The histologic findings within the inguinal lymph node showed caseating lesions with AFB and therapy with isoniazid, rifampin, pyrazinamide, and ethambutol was started. No AFB was found in sputum or urine. The tuberculin skin test was positive.

On the first week of therapy with antituberculous drugs, he showed improved odynophagia and dysphagia, and several cervical nodes had a swollen fluctuant area. The aspirate smear of the cervical nodes showed greater numbers of AFB. However, despite antituberculous therapy, he continued to have bulging of the posterior pharynx. His dysphagia was progressively worsening and he presented with neck stiffness. The retropharyngeal abscesses were aspirated by external incision with complete drainage and relief of symptoms.

On the twenty-fifth hospital day, the patient developed clinical jaundice and the results of liver function tests revealed the following values: a total bilirubin of 3.9 mg/dL, ALT of 83 U/L, AST of 64 U/L, and alkaline phosphatase of 151 U/L. The liver was smooth and nontender with a span of 3 cm. An abdominal ultrasonography showed an enlarged liver with multiple hypoechoic hepatic lesions and mesenteric lymphadenitis (Figure 2).

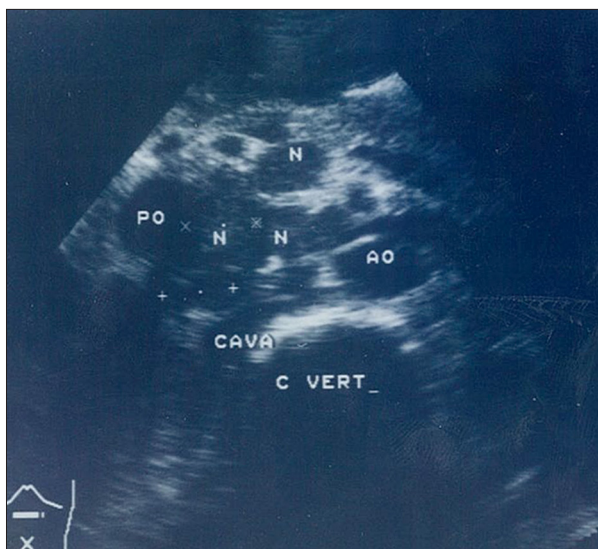


Figure 2. Abdominal ultrasonography shows an enlarged liver with multiple hypoechoic lesions and multiple mesenteric enlarged lymph nodes. Portal vein (PO), mesenteric lymph nodes (N), aorta (AO), inferior vena cava (CAVA), and vertebral column (C VERT).

Cultures for bacteria and fungi of aspirates from the lymph nodes and of operative specimens were negative. Mycobacterial culture media (Löwenstein-Jensen medium) subsequently yielded *Mycobacterium tuberculosis* susceptible to all antituberculous agents.

He was discharged home on the thirty-fourth day to continue receiving antituberculous therapy for nine months. Six months after discharge, the patient's symptoms were abated with reduction of size in his lymph nodes. The results of a follow-up examination were normal 12 months later and hepatic lesions completely regressed.

Discussion

TBRPA is a rare presentation of head and neck disease (less than 1%) [2,3]. In one study, infection in the retropharyngeal space by *Mycobacterium tuberculosis* was seen in 3 (15%) of patients who had undergone retropharyngeal abscess over a 10-year period [4]. In western Mexico, 86% of the strains of *Mycobacterium tuberculosis* are isolated from the lower respiratory tract and 14% from extrapulmonary sites [5]. Lymphadenitis is one of the most common extrapulmonary presentations of TB and cervical lymphatic nodes are involved in >40% of cases [6]. Nevertheless, TBRPA occurs infrequently.

Retropharyngeal infection is considered largely a disease of children, as retropharyngeal lymph nodes are usually absent in the adult [7]. The likely mechanism of TB infection in the

retropharyngeal space may be: 1) lymphatic spread from cervical lymphadenitis to involve the retropharyngeal lymph nodes, as the retropharyngeal space does contain some lymph nodes (the nodes of Henle) and some lymphatic channels; however, the nodes of Henle usually regress after the age of 2–5 years [8]; 2) direct extension from osteomyelitis of the cervical spine [1,9–12]; 3) contiguous spread from an adjacent focus of the infection (oral or nasopharyngeal); and 4) reactivation of TB from lymph nodes with prior primary infection.

TBRPA in the adult without evidence of adjacent focus of infection rarely occurs [1]. Cases of TBRPA with cervical lymphadenitis are unusual and probably occur as a result of lymphatic spread to a persistent retropharyngeal lymph node [13,14]. Our patient had no osseous or pulmonary TB. No AFB was found in the sputum or urine. The diagnosis of disseminated TB may represent a diagnostic challenge in patients with normal chest radiograph. For example, in one study, 13% of the patients with disseminated TB had normal findings of chest radiography [15]. Also, our patient had generalized TB lymphadenitis, as well as hepatic lesions that were seen in the liver ultrasound, but these lesions were not assessed by mycobacterial culture or histopathological examination. The only evidence for TB was the response to antituberculous therapy with regression of hepatic lesions.

Odynophagia and dysphagia are seen in severe cases of TBRPA. Voice changes, stridor, and upper respiratory obstruction may occur due to local edema [1,8–10]. Fever and weight loss are unusual manifestations of TBRPA; however, they can be present in patients with disseminated TB involving the retropharyngeal space, as may have occurred in our patient.

To our knowledge, this is the first report of a large retropharyngeal abscess in a non-immunocompromised adult patient with disseminated TB.

The treatment for TBRPA is a combination of antituberculous chemotherapy and surgical drainage. In a well-localized, small retropharyngeal abscess, intraoral drainage avoids contamination of tissue planes and visible scar. However, in the case of a large abscess, it is best to treat with external drainage, as this allows wider access to the abscess cavity and a portal for the insertion of drainage tubes. This drainage obviates an intraoral wound that may result in aspiration of purulent material or persistent sinus drainage or fistula [9].

Conclusions

In conclusion, a large retropharyngeal abscess is a rare entity in which *Mycobacterium tuberculosis* etiology should be suspected. The diagnosis of retropharyngeal abscess may be

difficult because symptoms and signs are influenced by the abscess size and time of onset. Our patient case may contribute to the understanding of the pathogenesis of the abscess

formation in the retropharyngeal space in the adult. The presence of TB lymphadenitis in different regions, concurrent with hepatic lesions, are conditions for potential dissemination of TB.

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