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Conservative management of complicated retropharyngeal abscess with Antitubercular Therapy

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Abstract

Retropharyngeal abscess is a deep neck space infection with Tuberculosis (TB) as a rare cause. Here, we describe a case of a 45-year-old female, recently diagnosed diabetic, with complaints of fever and dry cough for one month, shortness of breath, change in voice, dysphagia, facial swelling, and history of contact with a Pulmonary TB (PTB) patient. Mantoux test was positive. Radiological imaging suggested it to be a complicated retropharyngeal abscess. Pleural fluid was exudative with low Adenosine Deaminase (ADA). Considering the clinical scenario and endemicity of TB in the region, the patient was put on Antitubercular Therapy (ATT), to which she responded very well.

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Introduction

Retropharyngeal abscess, the infection of deep neck spaces, extends from the base of the skull to the posterior mediastinum. It develops as a sequela of dental infection, upper respiratory tract infection, or any interventional procedure like laryngoscopy, endotracheal intubation, *etc.* Retropharyngeal abscess is a rare presentation of Tuberculosis (TB), with an annual incidence rate of 2.64 per 100,000 population, and gender-based incidence rates of 3.34 for males, and 1.94 for females per 100,000 population.¹ It, as a part of head and neck TB, has a prevalence of 0.1-1% among all forms of TB. If not managed timely, it may lead to the spread of its infection to the mediastinum, which can be life-threatening at times, owing to airway compromise and other catastrophic complications like mediastinitis, mediastinal abscess, pericarditis, pyopneumothorax pleuritis and empyema. We hereby present a case of a middle-aged woman diagnosed with a complicated retropharyngeal abscess but managed conservatively with Antitubercular Therapy (ATT).

Case Report

A 45-year-old woman with no prior comorbidities presented with complaints of fever and dry cough for one month, shortness of breath, change in voice, difficulty in swallowing, and facial swelling for two weeks. The patient had a history of molar tooth extraction from a local practitioner and contact with Pulmonary TB (PTB) in her husband, who took ATT. The patient

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was afebrile, and vitally stable with right-side bronchial breath sound over the inframammary area on physical examination. Routine blood investigations were as follows: hemoglobin 10.7 mg/dL, total leucocyte count 12470 per mm³, neutrophilic (63%), platelets 4.27 lakhs per mm³, random blood sugar level 185 mg/dL, glycated hemoglobin 10.1%, liver and renal function test were normal. A ninety-degree endoscopy was done, suggesting laryngeal crepitus with restricted motility of the left true vocal cord. Ultrasonography (USG) of the neck showed diffuse subcutaneous soft tissue edema in the anterior aspect of the neck, suggestive of cellulitis. Chest X-Ray Posterior-Anterior (CXR-PA) view suggested hilar widening and right lower zone opacification with costophrenic angle blunting, likely pleural effusion (Figure 1).

The patient was put on empirical intravenous antibiotics, anti-inflammatory agents, insulin therapy, and other supportive measures. A Computed Tomographic (CT) scan of the chest with neck revealed heterogeneously enhancing retropharyngeal collection with its mediastinal extension as mediastinal abscess with right side loculated pleural effusion with enhancing parietal and visceral pleura suggesting empyema (Figure 2).

Contrast-enhanced magnetic resonance imaging of the spine did not show any spinal and bony extension (Figure 3). Pleural diagnostic aspiration was done, which revealed turbid yellow fluid which was exudative in nature, neutrophils 48%, lymphocytes 45%, low Adenosine Deaminase (ADA) (28), no malignant cells, negative for AFB smear and Cartridge-Based Nucleic Acid

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Amplification Test (CBNAAT). Pyogenic culture and sensitivity were sterile after 48 hours of incubation. Mantoux test was positive.

In view of the subacute onset, exposure to PTB, and investigations, the patient was put on ATT under the National Tuberculosis Elimination Program (NTEP), according to the weight band, to which she responded very well. Her symptoms and chest radiography showed gradual improvement (Figure 4). Also, on repeat ninety-degree endoscopy, findings were normal. The patient was discharged under hemodynamically stable conditions.

Discussion

TB infection is an entity of high incidence in developing countries and commonly involves the lungs, but it can also affect other parts of the body as extrapulmonary TB. The most common presentation of extrapulmonary TB is cervical lymphadenitis, followed by pleural TB.^{2,3} Tubercular retropharyngeal abscess is a rare presentation of extrapulmonary TB and a potentially life-threatening deep neck infection.³ Retropharyngeal Abscess (RPA) in adults is mostly chronic, and it occurs mostly in immunocompromised patients.

Patients with retropharyngeal abscesses may present with myriads of symptoms, as mentioned in Table 1, ranging from mere fever to catastrophic presentation with delirium.

The diagnosis of the disease with unusual presentation is difficult, though important, because a delay in diagnosis may result in an inferior extension of the infection into the mediastinum,

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making its treatment difficult and affecting its outcome.^{4,5} Radiological imaging is important in assessing the extent of the disease and possible complications. A CT scan can accurately differentiate cellulitis from an abscess, while magnetic resonance imaging provides a better evaluation of soft tissues in the neck and is useful in assessing vascular complications like venous thrombosis. The diagnosis is based on careful patient history, physical examination, and a high index of clinical suspicion with confirmation on radiological imaging. Though there was no microbiological evidence of TB in our case, in view of clinical history, radiological evidence, and contact with PTB patients in endemic areas, ATT was started.

Retropharyngeal abscesses can usually be managed medically with intravenous antibiotics and surgical drainage, as evidenced in similar cases depicted in Table 1.^{1,3} In our case, the patient responded well to ATT, which was started on clinicoradiological grounds, without any surgical intervention.

If not treated on time, retropharyngeal abscess may lead to life-threatening complications involving its spread to other deep spaces of the neck, extending it to the mediastinum. In our case, its extension to the mediastinum and to the pleural space led to empyema, which was managed medically with ATT later.

Despite the availability of effective anti-TB drugs, TB remains the leading cause of death among curable infectious diseases because of reasons like delayed detection and treatment. Hence, tubercular etiology should always be suspected in endemic countries on the clinical and

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radiological basis to reduce disabilities and complications and improve clinical outcomes, and timely start of treatment decreases the incidence of resistant cases.

Conclusions

As unspecified symptoms and location can lead to delayed detection and treatment, tubercular etiology of retropharyngeal abscess is suspected in cases that are refractory to medical treatment and surgical drainage, especially in endemic countries like India, to reduce disabilities and improve clinical outcomes.⁵

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Table 1. List of similar case reports.

Sr.No.	Age/Gender	Clinical presentation	Evidence of tuberculosis	Intervention	Author
1	33/F	Upper respiratory tract infection, flu like symptoms with neck pain	ATT started on clinical ⁴ and radiological suspicion, later MTB detected on culture reports	Intraoral aspiration	Menon et al.
2	64/M	Neck pain for 6 months ⁷	ATT started bacteriological evidence	Incision and drainage	Kamath et al.
3	20/M	Dysphagia, cephalgia and neck pain for 2 months	Polymerase chain reaction showed MTB, ATT started	Intraoral aspiration of retropharyngeal abscess	Xu et al.

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4	18/F	A 1 day history of acute delirium, a month history of a painless right-sided posterior neck swelling, intermittent fever, headache, loss of weight and appetite	Gastric lavage AFB ⁶ staining positive, ATT started	Nil	Chong et al.
5	27/M	Neck pain, dysphagia and odynophagia with chest wall abscess and retropharyngeal abscess on radiological imaging	ATT started and evidence of MTB confirmed on histopathological examination	Drainage of ⁸ retropharyngeal abscess and debridement of chest wall	Hsu et al.

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6	34/M	A two-month history of neck pain and swelling, localized to the right posterolateral neck with fevers, chills, and malaise ⁹ later diagnosed as retropharyngeal abscess with Pott spine	ATT started empirically later confirmed microbiologically on pus from retropharyngeal abscess	The patient underwent posterior spinal fusion from occiput to C4 and transoral incision and drainage of the abscess	Hassman et al.
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ATT, Antitubercular Therapy; MTB, *Mycobacterium tuberculosis*; AFB, Acid Fast Bacilli

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Figure 1. Chest X-Ray Posterior-Anterior (CXR-PA) view suggesting hilar widening and right lower zone opacification with costophrenic angle blunting likely pleural effusion.

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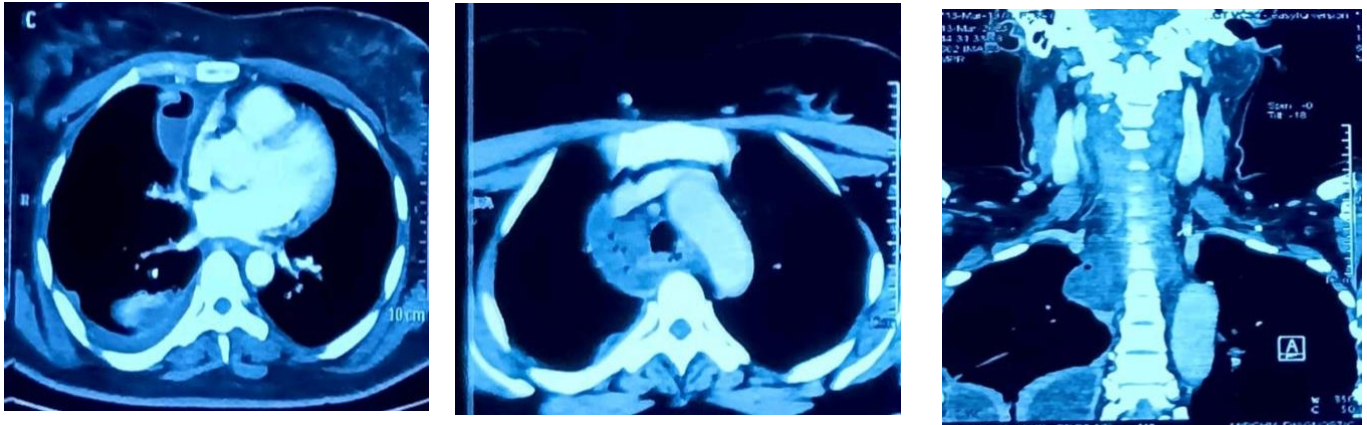


Figure 2. A computed tomographic scan of the chest and neck revealed a heterogeneously enhanced retropharyngeal collection with its mediastinal extension as a mediastinal abscess, with a right-side loculated pleural effusion enhancing parietal and visceral pleura, suggesting empyema.

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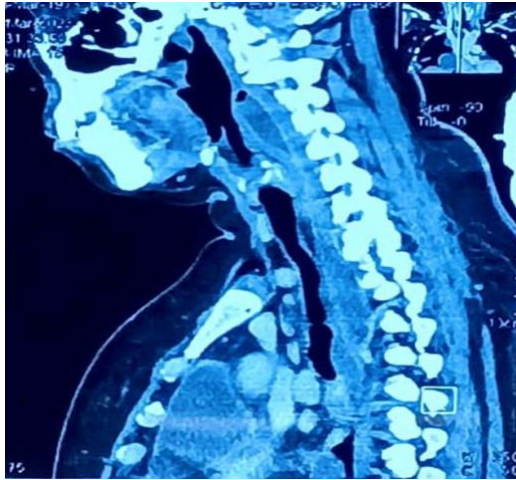
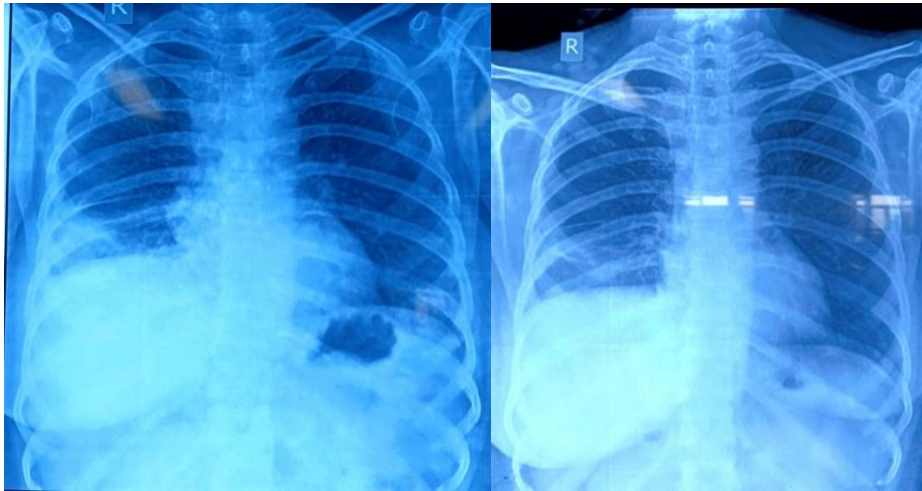


Figure 3. Contrast enhanced magnetic resonance imaging of spine showing its extension without any spinal and bony involvement.

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A)

B)

Figure 4. **A)** Chest X-Ray Posterior-Anterior (CXR-PA) view before starting Antitubercular Therapy (ATT); **B)** CXR-PA view after two months of ATT.

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