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Case Report

Retropharyngeal Tuberculous Lymphadenitis Revealed by Obstructive Sleep Symptoms in a 12-Year-Old Girl: A Case Report

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A B S T R A C T

Introduction: Cervical tuberculous lymphadenitis is the most common form of extrapulmonary tuberculosis, but involvement of the retropharyngeal lymph nodes remains exceptional, particularly in children. Its nonspecific clinical presentation can lead to diagnostic delay, especially when it mimics an obstructive upper airway disorder.

Case presentation: We report the case of a 12-year-old girl, with no significant past medical history, admitted for nocturnal snoring evolving over 2 months associated with episodes of dyspnea. Clinical examination revealed a bulging of the posterior oropharyngeal wall. Cervical computed tomography (CT) showed a necrotic left retropharyngeal lymph node suggestive of a tuberculous infectious origin. An incomplete retropharyngeal lymphadenectomy was performed, and histopathological examination confirmed necrotizing tuberculoid granulomatous inflammation. The patient was referred to a specialized tuberculosis treatment center for therapeutic management. Clinical evolution at 4 months showed marked regression of symptoms, radiologically confirmed by a decrease in the size of the retropharyngeal lymph node with resolution of the necrotic component.

Conclusion: In children presenting with oropharyngeal obstructive symptoms, retropharyngeal tuberculous lymphadenitis should be considered, particularly in tuberculosis-endemic countries. Early diagnosis, based on imaging and histological confirmation, allows for appropriate management and avoids the need for extensive surgery.

Keywords: Tuberculous lymphadenitis; Retropharyngeal; Child; Sleep-disordered breathing; Lymph node

Introduction

Tuberculosis (TB) remains a major public health problem worldwide, particularly in endemic countries such as Morocco[1]. While pulmonary tuberculosis represents the most common clinical form, extrapulmonary tuberculosis (EPTB) accounts for a significant proportion of cases, with tuberculous lymphadenitis being its most frequent presentation, reported in 25-60% of all EPTB cases; cervical lymph node involvement alone represents up to 50% of extrapulmonary tuberculosis[2].

Retropharyngeal lymph node tuberculosis, however, is a rare entity, especially in the pediatric population. These lymph nodes, which normally involute during early childhood, can occasionally persist and become the site of tuberculous infection, most often through lymphatic spread from a primary focus[3,4]. Due to their deep anatomical location, retropharyngeal lymphadenopathies often present with nonspecific and potentially life-threatening symptoms, such as snoring, dysphagia, or upper airway obstruction, which can mimic other more common causes of oropharyngeal masses, particularly retropharyngeal abscess of bacterial origin[3,5].

This nonspecific clinical presentation, combined with the rarity of this localization, often results in diagnostic delay[5,6]. Imaging plays a key role in raising suspicion of the diagnosis, while histopathological confirmation remains essential, as it allows differentiation from other causes of necrotic cervical masses, particularly malignant lymphadenopathies[6].

Through this case report, we aim to highlight the diagnostic challenges of retropharyngeal tuberculous lymphadenitis in children and to emphasize the importance of considering this diagnosis when evaluating a pediatric patient with obstructive oropharyngeal symptoms, particularly in tuberculosis-endemic regions.

Case Presentation

A 12-year-old girl, with no significant past medical history, presented with a 2-month history of nocturnal snoring associated with episodes of dyspnea. On physical examination, oropharyngeal inspection revealed a bulging of the posterior oropharyngeal wall, with normal-appearing overlying mucosa (Figure 1).

A cervical computed tomography (CT) scan was performed, revealing a left retropharyngeal lymph node with central necrosis, suggestive of an infectious/tuberculous origin (Figure 2).

The patient underwent an incomplete retropharyngeal lymphadenectomy. Histopathological examination of the surgical specimen revealed necrotizing tuberculoid granulomatous inflammation, characterized by dense inflammatory infiltrate composed of histiocytes, lymphocytes, epithelioid cells, and giant cells, with caseous necrosis, without individualized granuloma formation and with no evidence of malignancy - findings consistent with tuberculous lymphadenitis.

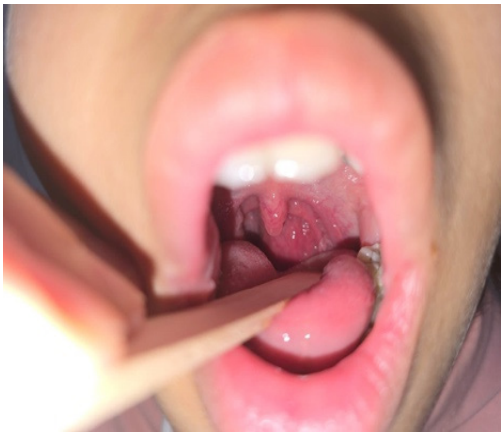

Figure 1: Clinical oropharyngeal examination showing bulging of the posterior oropharyngeal wall with normal overlying mucosa.

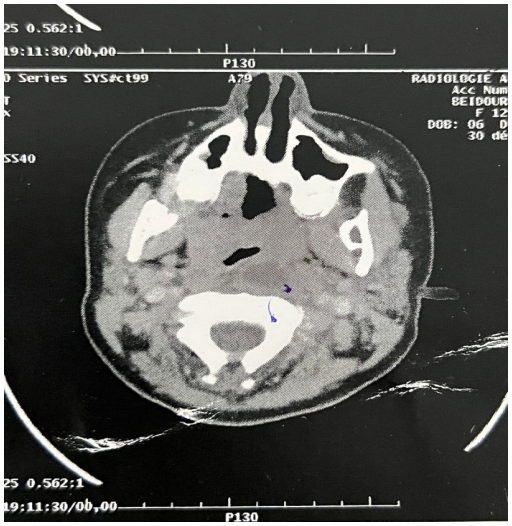

Figure 2: Initial cervical CT scan showing a necrotic left retropharyngeal lymph node.

Following histological confirmation, the patient was referred to a specialized tuberculosis treatment center for therapeutic management. Clinical follow-up reported by the family showed marked improvement, with near-complete resolution of snoring and dyspnea.

A follow-up cervico-thoracic CT scan performed approximately 4 months after initiation of antituberculous treatment, showed regressionin size of the left retropharyngeal lymph node without residual necrosis, persistence of a small left anterior spinal lymph node measuring 10 × 20 mm, and bilateral infracentimetric cervical lymph nodes. No pulmonary parenchymal lesion, mediastino-hilar lymphadenopathy, or pleuro-pericardial effusion was identified **(Figure 3)**.

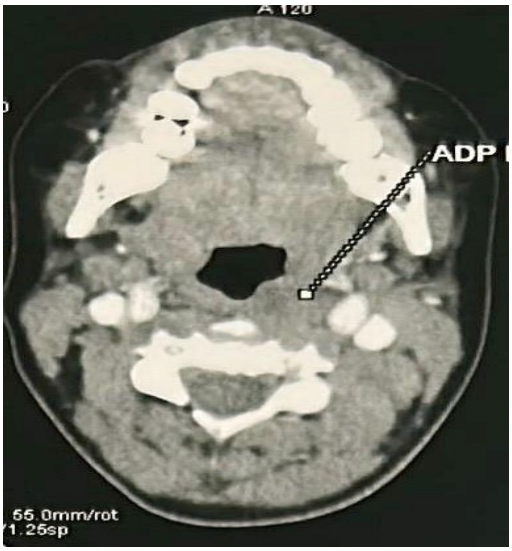

Figure 3: Follow-up cervico-thoracic CT scan showing regression of the retropharyngeal lymph node without residual necrosis.

Discussion

Retropharyngeal lymph node tuberculosis is an exceptionally rare clinical entity, particularly in children. The medial retropharyngeal lymph node chain, which normally regresses during early childhood, can occasionally persist into later life and constitute a reservoir for tuberculous infection, most often through lymphatic spread from a primary pulmonary or

oropharyngeal focus rather than through direct hematogenous dissemination[3,4]. This anatomical peculiarity explains both the rarity of the condition and its predominance in a pediatric population where residual retropharyngeal nodal tissue may still be present.

The clinical presentation of retropharyngeal tuberculous lymphadenitis is often insidious and nonspecific, as illustrated by our patient's presentation with isolated obstructive symptoms (snoring and dyspnea) evolving over two months, without fever, night sweats, or weight loss. This subacute, indolent course contrasts with the presentation of a bacterial retropharyngeal abscess, which typically develops rapidly and is accompanied by high fever, marked inflammatory signs, torticollis, and severe odynophagia[5]. This distinction is clinically relevant, as bacterial retropharyngeal abscess remains by far the most frequent diagnosis to be considered in a child presenting with a retropharyngeal mass, given its far greater incidence compared with tuberculous involvement of this site[3,5]. Other differential diagnoses include second branchial cleft cysts, lymphoma, and other malignant or congenital retropharyngeal masses, underscoring the necessity of histopathological confirmation before any therapeutic decision.

Imaging plays a central role in guiding the diagnostic workup. On contrast-enhanced CT, tuberculous lymphadenitis classically presents as a lymph node with central hypodensity corresponding to caseous necrosis and peripheral rim enhancement, a pattern reported in the large majority of cases of cervical tuberculous lymphadenitis[7]. This appearance, while highly suggestive, is not pathognomonic and can also be observed in suppurative bacterial lymphadenitis or necrotic malignant lymph nodes[8,9]. In our patient, this radiological pattern was the first element raising suspicion of a tuberculous etiology, subsequently confirmed by histopathology; follow-up imaging under treatment showed disappearance of this necrotic component, consistent with the expected radiological response to effective antituberculous therapy[8].

Histopathological examination remains the diagnostic cornerstone, as it was in our case, demonstrating necrotizing granulomatous inflammation with epithelioid and giant cells. Bacteriological confirmation, ideally through Ziehl-Neelsen staining, mycobacterial culture, or nucleic acid amplification testing (GeneXpert MTB/RIF), is recommended whenever feasible, as it allows definitive confirmation of the diagnosis and detection of drug resistance[4]; however, histological findings alone, in a compatible clinical and radiological context, are often considered sufficient to justify initiation of antituberculous treatment, particularly in high-burden countries where access to molecular testing may be limited.

Regarding management, the therapeutic approach to tuberculous lymphadenitis primarily relies on standard antituberculous chemotherapy, generally following a 2-month intensive phase with three to four drugs (isoniazid, rifampicin, pyrazinamide ± ethambutol) followed by a 4-month continuation phase with two drugs (isoniazid, rifampicin), in accordance with World Health Organization guidelines[10,11]. Surgery is not curative in itself and should be limited to diagnostic biopsy or, in selected cases, drainage of a compressive collection when there is a risk of airway compromise, as was the case in our patient given the obstructive presentation. Complete surgical excision is neither necessary nor recommended once the diagnosis is established, medical treatment alone generally being sufficient to achieve resolution, as illustrated by the favourable clinical and radiological evolution observed at 4-month follow-up in our patient.

Finally, this case highlights the importance of maintaining a high index of suspicion for tuberculosis in children presenting with retropharyngeal masses, particularly in endemic settings, given the potential for delayed diagnosis and the risk of life-threatening airway obstruction. Early recognition, combining clinical suspicion, imaging findings, and histopathological confirmation, allows for prompt referral to specialized tuberculosis care and avoids unnecessary or excessive surgical intervention.

Conclusion

Retropharyngeal tuberculous lymphadenitis is a rare but important differential diagnosis to consider in children presenting with nonspecific obstructive oropharyngeal symptoms, such as snoring or dyspnea, particularly in tuberculosis-endemic regions. Its insidious clinical course and deep anatomical location often delay diagnosis, exposing patients to the risk of airway compromise. A high index of suspicion, combined with appropriate imaging and histopathological confirmation, allows for early diagnosis and prompt referral for antituberculous therapy, thereby avoiding unnecessary extensive surgery. This case underscores the favourable outcome achievable with timely diagnosis and adequate medical management alone.

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