International Journal of Otorhinolaryngology and Head and Neck Surgery
Bajwa D et al. Int J Otorhinolaryngol Head Neck Surg. 2025 Oct;11(5):594-597
http://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937
DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20252994

Case Report

In the shadows: nasopharyngeal tuberculosis as adenoid hypertrophy in adult

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Received: 12 March 2025
Accepted: 02 September 2025

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ABSTRACT

Nasopharyngeal tuberculosis is an uncommon presentation, often posing a diagnostic challenge due to its rarity and the non-specific nature of its symptoms, which can mimic other more common ENT conditions. Tuberculosis is a multi-systemic disease affecting almost any part of the body. Primary nasopharyngeal tuberculosis is described as an isolated infection of the nasopharynx in the absence of pulmonary or systemic disease. A 38-year-old female patient presented to ENT department with complaints of nasal obstruction, cough. On flexible fiberoptic nasal endoscopy, nasopharyngeal mass was seen occupying whole of the nasopharynx. The mass had irregular surface with few necrotic areas over the surface. Post op recovery was uneventful. Final histopathology report came out to be suggestive of granulomatous disease with caseous necrosis. Patient has been on regular follow for the same and she has been showing adequate recovery with the medications. Nasopharyngeal tuberculosis is an uncommon presentation, often posing a diagnostic challenge due to its rarity and the non-specific nature of its symptoms, which can mimic other more common ENT conditions. Given the complexity and rarity of this condition, a meticulous, multidisciplinary approach was essential for accurate diagnosis and effective management. The patient was promptly initiated on an Anti-Koch's Therapy (AKT) regimen following confirmation of the diagnosis through advanced imaging and histopathological analysis. Her consistent and marked improvement on AKT underscores the importance and efficacy of a collaborative treatment strategy in managing such rare and complex ENT cases.

Keywords: Nasopharyngeal tuberculosis, Granulomatous disease, Anti-Koch's therapy

INTRODUCTION

Tuberculosis is the leading cause of infectious mortality and continues to be a major challenge to global health. With most frequent site being lungs, nasopharyngeal tuberculosis is a rare type of extrapulmonary tuberculosis comprising only less than 1% of tuberculosis found in the upper respiratory tract.[1] A global total of about 10 million people fell ill with tuberculosis in 2020. Until the coronavirus (COVID-19) pandemic, tuberculosis was the leading cause of death from a single infectious agent, ranking above HIV/AIDS. Tuberculosis is a multi-systemic disease affecting almost any part of the body.[2] Primary nasopharyngeal tuberculosis is described as an isolated infection of the nasopharynx in the absence of pulmonary or systemic disease.[2] Previously reported cases of primary nasopharyngeal tuberculosis involved mostly healthy people who had never been exposed to tuberculosis and was slightly more common among young women.[3] The diagnosis of nasopharyngeal tuberculosis is often difficult because nasal endoscopic evaluation and radio-imaging can only offer a differential diagnosis.[4]

CASE REPORT

A 38-year-old female patient presented to ENT department with complaints of nasal obstruction, cough.

Patient also gives history of loss of weight, loss of appetite and fever on and off in nature. Routine endoscopic examination was done for the patient followed by fibreoptic laryngoscopy. On flexible fibreoptic nasal endoscopy, nasopharyngeal mass was seen occupying whole of the nasopharynx. The mass had irregular surface with few necrotic areas over the surface. Narrow band imaging of the mass had features suggestive of granulation tissue. Patient was sent for CT PNS which was reported as nasopharyngeal mass with deviated nasal septum with turbinate hypertrophy. Patient was worked up for endoscopic septoplasty with turbinoplasty with nasopharyngeal mass biopsy. Post op recovery was uneventful. Final histopathology report came out to be suggestive of granulomatous disease with caseous necrosis. Slides were reviewed at a different hospital and showed similar findings.

Pulmonology and general physician opinion was taken and decision was taken to start patient on AKT regimen for 6 months. Patient has been on regular follow for the same and she has been showing adequate recovery with the medications. This 38-year-old female presented with significant ENT complaints, prompting a thorough diagnostic workup that revealed a nasopharyngeal mass with necrotic features. Advanced imaging and surgical biopsy confirmed granulomatous disease with caseous necrosis, suggesting tuberculosis. Following a multidisciplinary approach, the patient was started on an AKT regimen and has shown consistent improvement.

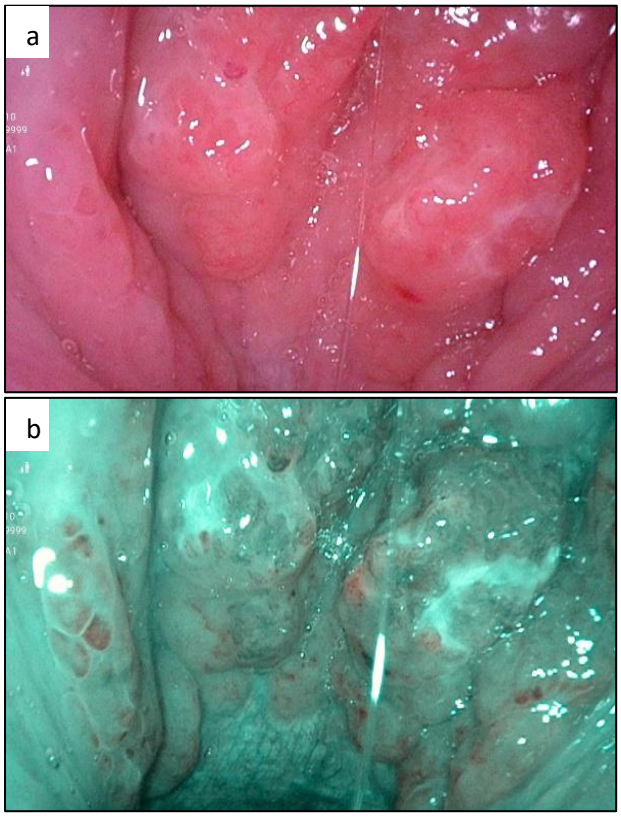

Figure 1 (a and b): Pre operative fiberoptic nasal endoscopy.

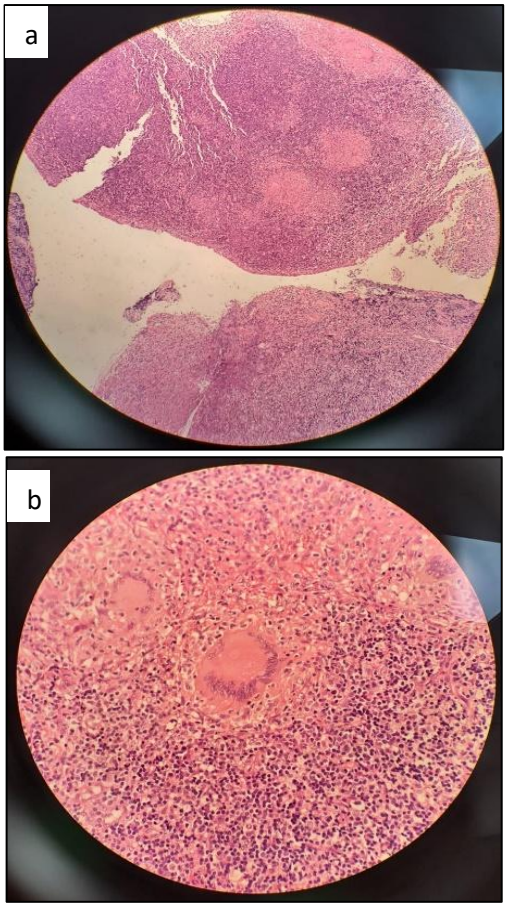

Figure 2 (a and b): Histopathological slide showing features of caseating granuloma.

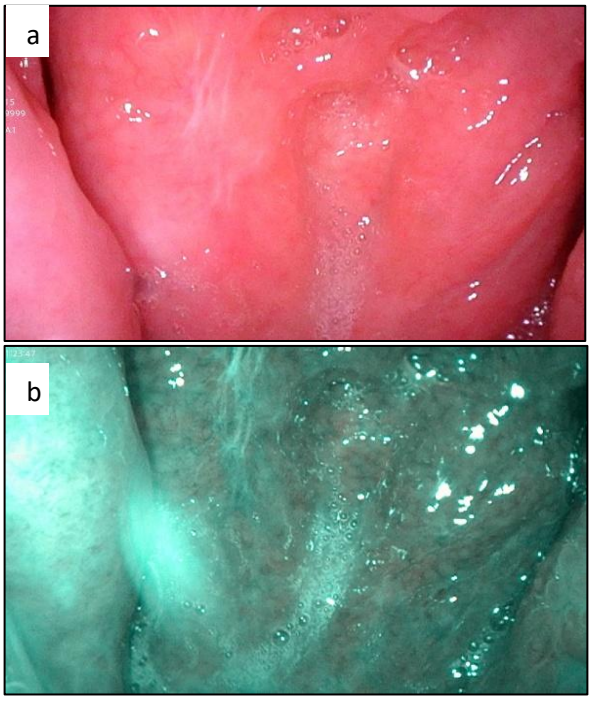

Figure 3 (a and b): Post operative and after one month of AKT treatment nasal endoscopy showing healed up area.

DISCUSSION

Nasopharyngeal lesions encompass a wide spectrum of differential diagnoses, each with distinct etiologies and clinical implications. These include.

Malignancies

Such as squamous cell carcinoma and lymphoma, which are among the most common and serious causes.

Fungal infections

Including aspergillosis and mucormycosis, which can lead to severe invasive disease, especially in immunocompromised patients.

Granulomatous inflammations

Such as sarcoidosis, leprosy, syphilis, and tuberculosis, which involve chronic inflammation and granuloma formation.

Autoimmune diseases

Which can present with various nasopharyngeal manifestations, adding to the complexity of the differential diagnosis.[1] The most common symptoms of nasopharyngeal tuberculosis are cervical lymphadenopathy, weight loss, fever, epistaxis, nasal obstruction, hearing loss, otalgia, tinnitus, postnasal drip and night sweats.[1] The gold standard for diagnosis is a biopsy from the nasopharynx. Histopathology shows granulomatous inflammation with caseous necrosis and giant cells with acid fast bacilli. It is not uncommon for biopsy to be negative of tuberculosis initially.[5]

Studies have shown two main mechanisms leading to nasopharyngeal tuberculosis direct infection with *M. tuberculosis*. Due to the unique structure of the nasopharynx and the lack of filtration and cleaning, it is effortless for *M. tuberculosis* to stay and accumulate here, caused by the lymphatic system or blood system.[6]

The possible nasopharyngoscopy findings include normal appearance, irregular mucosa or ulcerative lesions, a mass, bulging, or swelling; and white patches covering the nasopharyngeal area.[6] Although a granulomatous reaction is frequently observed, the isolation of acid-fast bacilli and a culture of *M. tuberculosis* can be extremely difficult.

Radiologically, nasopharyngeal tuberculosis can exhibit two patterns as defined by magnetic resonance imaging polypoidal mass and diffuse mucosal thickening. Hence, differential diagnosis can vary according to abovementioned patterns.[4] Nasopharyngeal tuberculosis may be overlooked because it is often asymptomatic unless complicated by pulmonary tuberculosis, and the nasopharynx is a difficult site to observe without endoscopy. The ability of FDG-PET/CT to detect extrapulmonary tuberculosis is very high. FDG-PET/CT can also be useful in distinguishing old and active tuberculous lesions and in determining the effects of tuberculosis treatment.[7]

CONCLUSION

Nasopharyngeal tuberculosis is an uncommon presentation, often posing a diagnostic challenge due to its rarity and the non-specific nature of its symptoms, which can mimic other more common ENT conditions. The disease is characterized by the formation of granulomas and caseous necrosis in the nasopharyngeal tissues, leading to significant symptoms such as nasal obstruction, cough, weight loss, decreased appetite, and intermittent fever.

Given the complexity and rarity of this condition, a meticulous, multidisciplinary approach was essential for accurate diagnosis and effective management. The patient was promptly initiated on an AKT regimen following confirmation of the diagnosis through advanced imaging and histopathological analysis. Her consistent and marked improvement on AKT underscores the importance and efficacy of a collaborative treatment strategy in managing such rare and complex ENT cases.

This case highlights the critical role of integrated medical care in diagnosing and treating nasopharyngeal tuberculosis, ensuring the best possible outcomes for patients with this rare disease.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Bajwa D, Tatavarthy S, Chandra I, Srivastava T, Benny ADS, Garg N. In the shadows: nasopharyngeal tuberculosis as adenoid hypertrophy in adult. Int J Otorhinolaryngol Head Neck Surg 2025;11:594-7.