

Case Report

Primary Nasal Tuberculosis Presenting with Septal Perforation

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ABSTRACT

Tuberculosis (TB) is a disease caused by bacteria belonging to the Mycobacterium tuberculosis complex. The disease typically affects the lungs, although, in up to one-third of cases, other organs may also be involved. Extrapulmonary TB occurs in perhaps 15% of all patients with TB. Tuberculosis (TB) is a global health problem with 8 million people infected annually and 3 million people dying from diseases related to its complications. Nasal tuberculosis may be primary or secondary to pulmonary tuberculosis or facial lupus. All of these are rare clinical entities. With the advances in the diagnosis of TB and with even faster and more reliable tests, such as polymerase chain reaction (PCR), its detection almost always requires the performance of invasive procedures, such as fine-needle aspiration or biopsies. The gold standard diagnostic tool is still the culture of mycobacteria which requires a waiting period of more than a month.

Key Words: Extrapulmonary tuberculosis, nasal septal perforation, primary nasal tuberculosis

INTRODUCTION

Tuberculosis is caused by Mycobacterium tuberculosis, an acid-fast bacillus that is transmitted primarily through the respiratory tract. The incidence of TB in underdeveloped countries is increasing, and this is thought to be because of associated poor hygiene conditions and the greater prevalence of AIDS [1]. Head and neck tuberculosis is very rare, except for cervical adenitis. The third most common form of TB in the head and neck is the oropharynx, after adenopathies and laryngeal TB [2] [3]. Primary tuberculosis of the nose is exceedingly rare, with fewer than 100 cases having been reported in the literature. Nasal TB has always been considered secondary to tuberculosis of the lungs and in rare instances

constituting a primary infection usually due to inhalation of mycobacterium. Nasal involvement of tuberculosis was first described in Venice by Giovanni Morgagni in 1761, but it was not until 1876 that primary nasal disease was described by Clarke in an address to the Pathological Society of London [4] [5].

CASE REPORT

A 45 years old female presented to the ear, nose, and throat (ENT) outpatient department of Janaki Medical College Teaching Hospital (JMCTH) with complaints of bilateral nasal blockage for 2 years, which was insidious in onset and gradually progressive. There was no history of trauma, pain, bleeding, nasal discharge, sneezing, watering or redness of eyes, or any upper

respiratory tract infection. There was also no evidence of fever, cough, headache, fatigue, or bodyweight loss. There was no history of tuberculosis (TB), diabetes, hypertension, asthma in the past. The patient denied any addiction or history of drug allergy. There appeared to be no abnormality upon external nasal and neck examination. On nasal examination revealed a septal perforation about 1.5cm in diameter, with marginal brownish crusting over the anterior one-third of the nasal septal cartilage (Figure 1).



Figure 1: Nasal examination showing septal perforation with crusting

Oral examination and fiberoptic laryngoscopy were normal. On neck examination, there was no lymphadenopathy.

The white cell count was within the normal range. Chest X-ray was normal. Mantoux test was negative. The sputum smear was also negative for acid-fast bacilli. Hemoglobin was 11 g/dl and erythrocyte sedimentation rate (ESR) was 43 mm/h. VDRL, HIV, HBsAg were

negative. Simple resection of perforation margin tissue was taken. Histologic investigation of the resected margin revealed chronic inflammation and the presence of necrosis with the caseating granulomatous lesion (Figure 2). Diagnosis of granulomatous lesion of the nose with necrosis, the possibility of tuberculosis cannot be excluded.

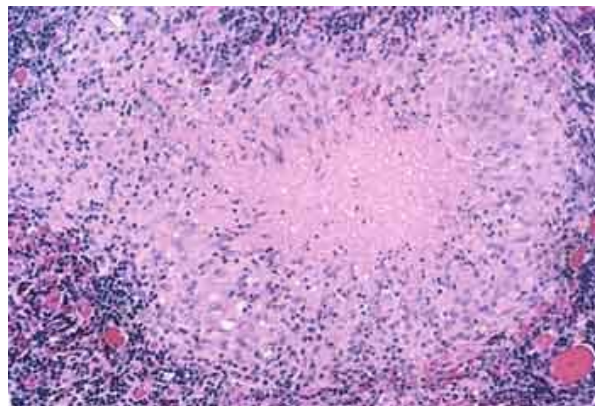


Figure 2: Histological picture showing chronic inflammation and the presence of necrosis with the caseating granulomatous lesion

Under the impression of primary nasal TB, we referred our patient to the medical chest department for the administration of oral anti-tuberculous agents. Following a 6-month anti-tuberculous treatment regimen, the patient represented to the otorhinolaryngology outpatient department. Local physical examination revealed that the septal perforation persisted, and was approximately the same diameter as previously, although the perforation margins were smooth and no longer crusted.

DISCUSSION

Nasal tuberculosis is a rare, chronic, granulomatous infection caused by *Mycobacterium tuberculosis*. It can occur either as a primary infection or secondary to an infection at another site. The rarity of the

disease can be explained by the protective function provided by the ciliary action of the nasal mucosa, the bactericidal properties of the nasal secretions, and the protective mechanisms of nasal vibrissae. The infection can be introduced into the nose by inhalation of infected droplets or dust, and by inoculation via the finger [6]. Tuberculous involvement of the nasal cavity usually appears as a rapidly growing ulcer or tumor mass in the quadrangular cartilage of the nasal septum. Frequently, a septal perforation develops but in contrast to lupus vulgaris, the adjoining skin is not affected. The anterior portions of the inferior turbinate are frequently involved. Involvement of posterior nares is rare and the nasal floor is almost always spared [7].

The most common presenting symptom of nasal tuberculosis is nasal obstruction followed by nasal discharge, nasal bleed, crusting, eye-watering, postnasal discharge, recurrent nasal polyps, and ulceration [8].

The main diagnostic problem is that nasal TB mimics other granulomatous diseases of nose and malignancy. Histopathological examination is required for the diagnosis. The differential diagnosis includes fungal infections (mucormycosis, aspergillosis, blastomycosis, histoplasmosis, rhinosporidiosis), leprosy, rhinoscleroma, syphilis, Wegener's granulomatosis, sarcoidosis, leishmaniasis, inhalation granuloma, and natural killer-T cell lymphoma [9] [10].

The diagnosis is difficult because NTB signs and symptoms are nonspecific. A definitive diagnosis is made by identifying or isolating tuberculosis bacilli from tissue removed during biopsy or surgery [11]. A portion of any biopsy specimen should be sent for

culture, along with a notification of the types of organisms that are suspected [12].

Among the treatment options for nasal tuberculosis are drug therapy, surgical excision, diathermy, cautery, and radiotherapy. However, Goguen and Karmody reported that the recurrence rate following excision was greater than 50% [9]. The management essentially consists of adequate anti-tuberculosis therapy with excisional surgery, if an obstruction is significant and reconstruction plastic surgery for perforation of nasal septum and cosmetic purposes if required [13] [14]. Standard 6 months anti TB treatment should be established for the treatment of NTB. The accordance with current TB incidence trends, it would be kept in mind of infectious disease specialists as well as ENT specialists to consider TB as a potential entity when encountering an unusual lesion in the nasal cavity [15] [16].

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