

## Case Report

### Nasal tuberculosis: a case report

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#### ABSTRACT

We present a case of nasal tuberculosis, a rare presentation of extra-pulmonary tuberculosis. This report emphasizes how nasal tuberculosis can mimic other granulomatous disease and

place a major challenge in its diagnosis and treatment. (Rawal Med J 2013;38:81-83).

**Keywords:** Tuberculosis, granuloma, nasal discharge.

#### INTRODUCTION

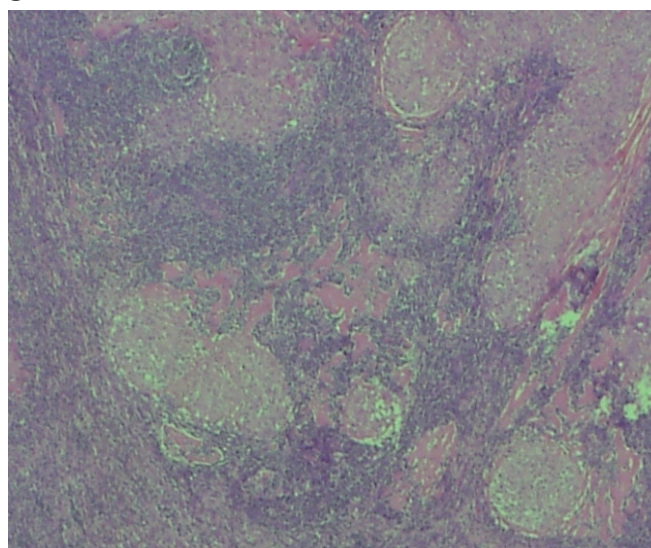
Data from WHO in year 2010 showed that 1.4 million people died from tuberculosis.<sup>1</sup> Due to improvement in anti-tuberculosis drugs and proper vaccination program, the incidence of tuberculosis has decreased. However, due to HIV, immigrants, drug abuse and presence of multidrugs resistance mycobacterium, the trend is changing.

#### CASE REPORT

A 45 year old lady presented with two months history of right nasal blockage. This was associated with foul smelling discharge and para-nasal pain. There was no history of chronic cough or loss of weight. External examination showed normal nasal frame. Nasal endoscopy showed congested right nasal cavity with intact nasal septum. Granulation tissue was noted over the right nasal floor, inferior meatus and in left nostril. Nasopharynx was normal. There was no palpable lymph node.

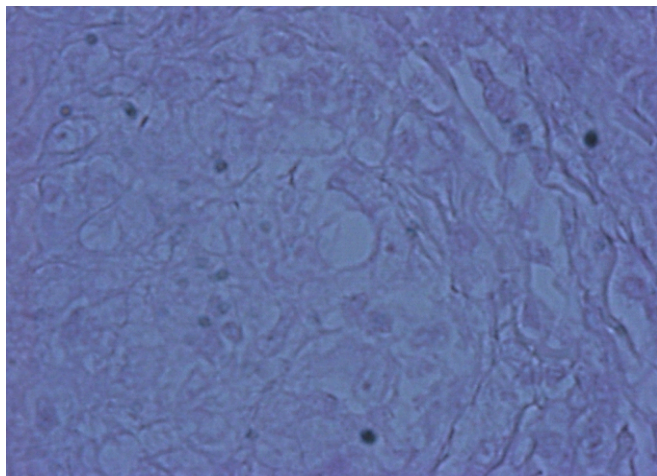
Chest x-ray showed no changes suggestive of tuberculosis. Baseline blood investigations showed no abnormality and ESR was not raised. CT scan of paranasal sinuses showed only soft tissue swelling over both nostrils with thickening of right maxillary sinus without bony erosion.

**Figure 1: H&E Stain showing granulomatous lesions in the lymphoid background. Black arrows show caseating granuloma formation.**



Multiple tissue biopsies from the granulation tissue of both nostrils showed vague caseating granuloma with epithelial cells and lymphocytes and showed no vasculitis or acid fast bacilli. Tuberculosis culture of the granulation tissue was also negative for mycobacterium growth. Investigations for connective tissue disease was done but showed inconclusive results. HIV and VDRL screening were both negative.

**Figure 2: Ziehl neelson stain reveals presence of scattered acid fast bacilli (black arrows).**



During follow up, patient complained of left sided neck swelling which she had noticed for past two weeks. Examination revealed two palpable lymph nodes over the left cervical region; the largest measuring 2cmx2cm. Excisional biopsy was performed and histopathological examination showed caseating granulomatous lesion with presence of Langhan's giant cell (**Figure 1**). On Ziehl-Neelsen staining, scattered acid fast bacilli were seen (**Figure 2**). She was treated with anti-tuberculosis drugs and after two months, showed no more lymphadenopathy or granulation tissue in the nasal cavity. Therapy was continued for further seven months. Regular follow up has shown no recurrence or complications.

## DISCUSSION

Literatures review showed tuberculosis involving nose and paranasal sinuses is extremely rare and usually arises from tuberculosis elsewhere, like in the respiratory tract.<sup>2,3</sup> Trauma and atrophic changes to nasal mucosa facilitate the lodging of bacilli within the nasal mucosal lining.<sup>2,3</sup> However, in our patient, there was no history of trauma or evidence of pulmonary tuberculosis.

The common symptoms for nasal tuberculosis are nasal obstruction, rhinorrhea and recurrent polyps<sup>3</sup>. Nasal deformity is usually found in advance disease. Diagnosing extrapulmonary tuberculosis can be challenging and is usually due to smaller number of bacteria that are not enough to produce positive

culture and difficulty to get tissue sample from certain body area.<sup>4</sup> The ability of tuberculosis to mimic other granulomatous diseases and malignancy also play a major role in diagnostic dilemma.

Tissue biopsy is important in nasal tuberculosis.<sup>5</sup> Caseating granuloma with epithelial cells and lymphocytes is hallmark of tuberculosis infection.<sup>6,7</sup> Non-caseating granuloma is less common. Simple acid fast bacilli staining of the biopsied tissue can be beneficial. Studies had reported that positive result was obtained in more than 50% of the cases.<sup>6,7</sup> We were also able to demonstrate positive acid-fast bacilli on ZN staining. Culture isolation of *M. tuberculosis* is the gold standard for diagnosis. However, due to fastidious growth requirements and slow growth rate,<sup>8</sup> positive culture is obtained in only small number of cases.<sup>2,6</sup> The PCR for detection of TB derivate protein has shown good sensitivity and specificity.<sup>9</sup>

The differential diagnosis for nasal TB or granulomatous nasal lesion include midline granuloma, syphilis, sarcoidosis, leprosy, fungal granuloma, rhinoscleroma and Wegener's granuloma.<sup>5</sup> Histopathological findings, as seen in this case, can be helpful in differentiation from other granulomas.<sup>6</sup> Treatment suggested by WHO for tuberculosis infection without previous history of multiple TB drugs resistance or previous infection can be curative.<sup>10</sup> In conclusion, TB nose is rare and diagnosis is challenging. The various type of granulomatous diseases and malignancy need to be rule out by biopsy and standard treatment with anti-tuberculosis drugs is effective.

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**Conflict of interest:** None declared

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Rec. Date: Sep 14, 2012 Accept Date: Nov 27, 2012

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