

## Case Report

# PRIMARY NASAL TUBERCULOSIS REVISITED: CASE REPORTS

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## ABSTRACT

Tuberculosis has emerged to be a major health problem in last few decades. Nasal septal tuberculosis is rare extrapulmonary tuberculosis with characteristic granulomatous lesion over the septum. We present 3 cases of nasal tuberculosis; all of them are female aged between 20 to 35 years. Two cases presented with nasal obstruction, third case mimicked nasal vestibulitis. Confirmatory diagnosis in all cases was made on basis of histopathological examination. All the 3 patients responded successfully to antitubercular drug therapy.

**Keywords:** Extrapulmonary Tuberculosis; *Mycobacterium Tuberculosis*; Granulomatous Lesion

## INTRODUCTION

Tuberculosis both pulmonary and extrapulmonary is major health problem. This disease, which is caused by bacteria of the *Mycobacterium tuberculosis* complex, usually affects the lungs, although other organs are involved in upto one-third of cases. It is one of the world's leading causes of death, due to single infective agent. According to Revised National TB Control Programme annual status report(2014) in 2012 out of estimated global annual incidence of 8.6 million T.B. cases, 2.3 million (25%) were estimated to have occurred in India, making India the world's highest tuberculosis burdened country. Tuberculosis of head and neck area, excluding laryngeal forms, is exceptional and constitutes only 2-6% of extrapulmonary tuberculosis and 0.1-1% of all forms of tuberculosis (Weir and Thosnton, 1985). Given the high prevalence of tuberculosis, otolaryngologist should remain cautious of tuberculosis as potential cause of unusual lesion in head and neck.

Nasal septal tuberculosis is a rare entity characterized by granulomatous lesion over septum (Lai *et al.*, 2007). Nasal tuberculosis is usually secondary to tuberculosis of lungs and larynx, facial lupus but rarely primary nasal tuberculosis can occur (Page and Jash, 1974; Purohit and Gupta, 1997). Lodging of tubercle bacilli in nasal mucosa, which is inherently resistant to tubercle bacilli, is facilitated by trauma and atrophic changes (Choi *et al.*, 2000; Waldman *et al.*, 1981). Symptoms of nasal septal tuberculosis include nasal bleeding, nasal obstruction, and nasal discharge. On nasal endoscopy ulcerative red nodules (granulomatous lesion) can be seen over the septum. In advanced stage septal perforation and scar stenosis can occur. Nasal endoscopy, Mantoux test, chest x-ray, histopathological verification of langerhans cell help in making diagnosis (Nayar *et al.*, 2004).

## CASES

### Case 1

A 21 year old female presented with right nasal obstruction for last 1 month. There was no history of nasal bleed, nasal discharge, fever, cough or weight loss. On anterior rhinoscopy a granulomatous mass was seen over the anteroinferior part of nasal septum. Findings were confirmed on nasal endoscopy. There was no significant cervical lymphadenopathy. Systemic examination did not yield any significant finding.

Haemogram except for raised ESR was within normal limits. Chest X-ray was within normal limits. Sputum for AFB was negative. Computer rhinomanometry showed increased nasal resistance at medium difficulty level, on right. Mantoux revealed an induration of 15 mm. CT nose and paranasal sinuses revealed right septal mass (Figure 1).

HPE revealed ill defined granulomas composed of epithelioid cells, langerhans type giant cells, lymphocytes and histiocytes with areas of micro-caseation Biopsy smear was positive for AFB on ZN staining.

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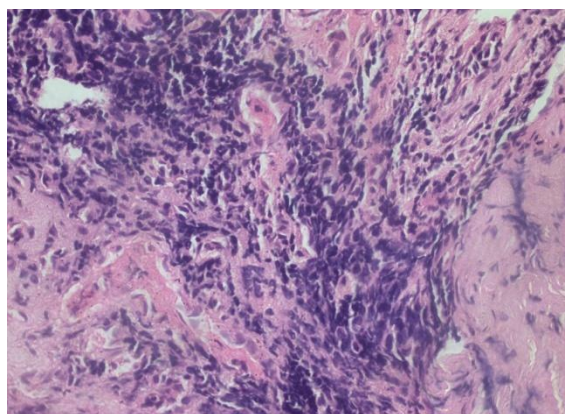
Definitive diagnosis was made on basis of clinical examination, PPD, histopathological findings. No clue for any other focus of tuberculosis in body was found. She was put on antitubercular therapy and she responded well to treatment.



**Figure 1: CT Nose & PNS showing right septal mass**

### Case 2

A 35 year female came to our outpatient department with complains of episodes right nasal bleed for last 2 months. On anterior rhinoscopy there was redness, tenderness and crust covered ulcerative lesion over the anteroinferior part of right nasal cavity. Lesion used to bleed on touch. There was matted, firm, painless lymphadenopathy in right submandibular region. Rest of examination was within in normal limits. Diagnosis was confirmed by histopathological examination [Figure 2]. Patient was investigated for other tubercular foci but was negative. She was put on antitubercular treatment category I for 6 month and she responded well to the treatment.



**Figure 2: HPE slide showing ill defined granulomas Composed of epithelioid cells and giant cells (10x, H&E stain).**

### Case 3

A 30 Year female presented with progressive difficulty in breathing from right nostril along with pain in right nasal cavity for last 20 days. Anterior rhinoscopy reveled bulge on right side septum along with ulcerative lesion over anteroinferior part of nasal cavity. There was no significant cervical lymphadenopathy. Rest of examination was within normal limits. Diagnosis was confirmed by histopathological examination. No clue for any other tubercular foci was found. She was given antitubercular treatment, category 1, for 6 month and responded well to treatment.

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### DISCUSSION

Nasal tuberculosis is a rare, chronic, granulomatous lesion of nose which is usually secondary to tuberculosis of lungs or larynx. Causative organism is mycobacterium tuberculosis. Nasal mucosa is resistant to tuberculosis by ciliary action of mucosa, bactericidal properties of nasal secretions and protective mechanism of nasal vibrissae (Hyams and English, 1991). Finger nail trauma by regular pricking of nose and atrophic changes facilitate lodging of bacilli within nasal lining. Signs and symptoms imitate that of chronic rhinitis and vestibulitis. Patients usually present with nasal obstruction, nasal bleed, and nasal discharge. A review report shows predominance of disease in middle aged women (Adeel and Butt, 1997). All the patients in our report are female aged between 20 to 35 years. The most commonly involved site is the cartilaginous portion of nasal septum, followed by the turbinate and nasal floor. Endoscopic examination of nasal cavity shows granulomatous ulcerative lesion which is usually unilateral affecting the cartilaginous part of septum. Kim *et al.*, (2007) demonstrated eight cases of nasal tuberculosis, average age of patient was about 30 years and localization of tuberculosis infiltrates was, as it was in our cases, the nasal septum. Tuberculin skin test is usually positive, though negative test do not rule out the disease. Erythrocyte sedimentation rate is elevated as in our case, but is not specific.

Confirmatory diagnosis was made on basis of histopathological examination of biopsied sample which demonstrated caseous necrosis along with langerhan's giant cells and epithelioid cells, demonstration of acid fast bacilli on ZN staining of biopsy sample and growth of mycobacterium tuberculosis from the biopsy specimen. No other tubercular foci were found in all three cases. Chest X-ray was done in all the cases to rule out primary tubercular foci in lungs.

All the patients were kept on antitubercular therapy category I for 6 months. This consisted of intensive phase of 2 months in which isoniazide, pyrazinamide, rifampicin, ethambutol were given followed by continuation phase of next 4 months in which isoniazide and rifampicine was given. Patient responded well to the treatment. In all the cases visible lesion over nasal cavity subsided within 2 to 3 weeks of start of treatment. Liver function test and serum uric acid level was performed in every case at commencement of treatment and was repeated regularly.

It can be concluded that physician should always keep tuberculosis as differential diagnosis in granulomatous lesions of nose not responding to usual treatment.

### REFERENCES

- Adeel A and Butt MB (1997).** Nasal tuberculosis in the 20th Century. *American Journal of the Medical Sciences* **313**(6) 332-5.
- Choi YC, Park YS, Jeon EJ and Song SH (2000).** The disappeared disease: tuberculosis of the nasal septum. *Rhinology* **38**(2) 90-2.
- Hyams VJ and English GM (1991).** *Otolaryngology. Pathology of the nose and paranasal sinuses* (Philadelphia: JB Lippincott) 24-5.
- Kim YM, Kim AY, Park YH, Kim DH and Rha KS (2007).** Eight cases of nasal tuberculosis. *Otolaryngology-Head and Neck Surgery* **137**(3) 500-4.
- Lai TY, Liu PJ and Chan LP (2007).** Primary nasal tuberculosis presenting with septal perforation. *Journal of the Formosan Medical Association* **106**(11) 953-5.
- Nayar RC, Al Kaabi J and Ghorpade K (2004).** Primary nasal tuberculosis: a case report. *Ear, Nose & Throat Journal* **83**(3) 188-91.
- Page JR and Jash DK (1974).** Tuberculosis of the nose and paranasal sinuses. *Journal of Laryngology and Otology* **88** 579-83.
- Purohit SD and Gupta RC (1997).** Primary tuberculosis of nose. *Indian Journal of Chest Disease and Allied Science* **39** 63-4.
- Waldman SR, Levine HL, Sebeck BA, Parker W and Tucker HM (1981).** Nasal tuberculosis: a forgotten entity. *Laryngoscope* **91**(1) 6-11.
- Weir M and Thosnton G (1985).** Extrapulmonary tuberculosis. *American Journal of Medicine* **79** 467-76.