A Case of Primary Nasal Tuberculosis

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Abstract
A 17 year old male presented with frequent blocking of nose and history of recurrent colds. On nasal examination, he was found to have a polypoidal soft tissue mass arising from the nasopharynx and extending on either side anteriorly upto the posterior choana, which was confirmed on CT scan. Endoscopic excision of this mass was done which on histopathological examination was suggestive of chronic granulomatous inflammation probably of tubercular aetiology. There was no other systemic involvement. Excellent response to AKT was noted.

Introduction
During the last decade, tuberculosis has reemerged as a major health problem in India. It may be attributed to deterioration of the social infrastructure. Primary tuberculosis of the nose is rare. The rare localizations of tuberculosis include the sinuses, nasopharynx, nose and facial bones. It is sometimes confused with granulomatous or neoplastic processes for which diagnostic suspicion is important. Although the incidence of mycobacterial diseases, especially the extrapulmonary type, is on the rise in many regions of the world, it still remains an underdiagnosed entity. The first case of primary tuberculosis of the upper respiratory tract and nose was presented to the Pathological Society of London by Clarke in 1852. Later in the 18th century, reviews published by Herzog described 20 cases of primary nasal tuberculosis among over all 80 cases of nasal tuberculosis. In a review of the 20th-century medical literature published in 1997, Butt found only 35 cases of nasal tuberculosis. Review added eight other recently reported cases. We present here a case of primary nasal tuberculosis.

Case Report
A 17-year-old male presented with the complaints of blocking of nose intermittently (L > R) and history of recurrent cold. He had no history of associated headache, excessive sneezing, epistaxis, ear discharge or throat complaints. There was no history of haemoptysis, dyspnoea, dysphagia, loss of appetite or significant loss of weight. He had received several courses of antibiotics without any response. Patient had received BCG in childhood. On examination: pulse rate 74/min, respiratory rate 18/min and blood pressure was 120/80 mm of Hg respectively. He was afebrile and his general condition was fair. ENT examination revealed rhinitis and inferior turbinate hypertrophy was present. He was found to have a polypoidal mass involving the left nasal cavity. The mass was seen arising in the nasopharynx. There was minimal deviated nasal septum to right side (Fig.1). The routine haematological and biochemical analyses were within normal limits. ESR was 29 mm in 1st hour. Mantoux test was negative and peripheral blood smear for malaria parasites was negative. Skiagram of the chest showed no evidence of tuberculosis. Test for Anti neutrophilic cytoplasmic antibodies was negative. CT scan of the paranasal sinuses showed a diffuse lobulated minimally enhancing soft tissue mass in the midline nasopharyngeal region extending on either side and anteriorly upto the posterior choana. It was also compressing the oropharynx and measured about 4.1 x 3.1 x 2.8 cm. A lobulated soft tissue lesion was seen involving the anterior part of the nasal septum extending on both sides and partially obstructing the

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nasal cavity (Figs. 2, 3). Endoscopic excision of nasopharyngeal mass was done under general anaesthesia. This was sent for histopathological examination (HPE) and the rest of the mass was excised. The mass extending to oropharynx was debrided via oral approach and the remnants were debrided using adenoid curette. Haemostasis was achieved and posterior nasal packing was done. Anterior nasal packs were kept. Nasopharyngeal mass for fungal stain and AFB was negative. The biopsy material from the involved area revealed fragments lined by partly ulcerated respiratory and squamous epithelium. Multiple discrete and confluent epitheloid granulomas with Langhan’s giantscells, an occasional area showing central necrosis were identified within the stroma with intervening lymphoid tissue contains few hyperplastic lymphoid follicles. Bits of fibrinous necrotic material containing neutrophils were also evident. No malignancy was reported. Diagnosis was chronic granulomatous inflammation probably of tuberculous aetiology.

In view of the above findings AKT was planned and started. The patient was put on anti-tubercular drugs which included: Isoniazid (300 mg), rifampicin (450 mg), pyrazinamide (1500 mg) and ethambutol (1000 mg) for 2 months, followed by isoniazid (300 mg) and rifampicin (450 mg) for 4 months. Patient is responding well to the treatment and is currently on follow up.

At 8 weeks follow up, he was doing well and he had no episodes of nasal blockage or recurrent colds. ENT examination showed no evidence of any nasal growth. He is afebrile, has gained 5 kg weight and nasal symptoms had disappeared.

Discussion
The incidence of extrapulmonary tuberculosis has increased and represents a diagnostic challenge to clinicians. Involvement of the nose is rare. When it does occur, it is usually secondary either to pulmonary tuberculosis or to lupus vulgaris of the facial skin.\footnote{In children, they usually have no evidence of pulmonary disease and their chest X-rays at presentation are usually normal.\cite{12-14} This disease is rarely infectious, and patients typically have bacterial counts much lower than do those who have cavitary pulmonary disease.\cite{15}} In children, they usually have no evidence of pulmonary disease and their chest X-rays at presentation are usually normal.\cite{12-14} This disease is rarely infectious, and patients typically have bacterial counts much lower than do those who have cavitary pulmonary disease.\cite{15} Patients with extrapulmonary tuberculosis account for only

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**Fig. 1**: CT Scan (sagittal view) of soft tissue mass in nasopharynx.

**Fig. 2**: CT Scan (coronal view) of soft tissue mass in nasopharynx with mild DNS to right.

**Fig. 3**: CT Scan (Axial view) of the nasopharyngeal mass.
15% of patients with tuberculosis, but constitute 70% of patients with AIDS and tuberculosis.

Tuberculosis of nose and paranasal sinuses is rare even in patients with tuberculosis of other organs. The rarity of the disease can be explained by the protective functions provided by the ciliary action of the nasal mucosa, the bactericidal properties of the nasal secretions, and the protective mechanisms of the nasal vibrissae.\textsuperscript{16}

Nasal tuberculosis usually manifests as nasal obstruction or discharge. A 16 year old girl with tubercular paranasinusitis presenting as a nasal polyp has been reported by Sethi et al.\textsuperscript{17}

The pathogenesis of tuberculosis may be either primary or secondary. Primary infection of the nose occurs when there is absence of pulmonary disease and the organism directly infects the mucosa via aerosolized particles resulting in the formation of a granuloma.\textsuperscript{13}

Our patient had also received BCG and his Mantoux test was negative. Similar findings have been reported by du Pleiss and Hussey as well as Ulloa et al.\textsuperscript{12,14}

A Korean study presented the largest number of nasal tuberculosis cases reported in the medical literature from a single institute. A total of eight patients presented with nasal tuberculosis during the study period (from January 1989 through December 2006). Six were female and two were male. The patient age varied from 17 to 51 years, with a mean of 31 years. The most commonly involved site was the nasal septum. Six of the cases were a result of primary infections, while two were secondary disease manifestations. Diagnosing nasal tuberculosis requires a high index of suspicion and occasionally the use of experimental drug treatment options.\textsuperscript{18}

A definitive diagnosis of nasal tuberculosis is made by isolating M. tuberculosis from a biopsy specimen on histopathology report, but this may not always be possible.\textsuperscript{12} Remarkable response to anti-tubercular therapy further confirmed the diagnosis. Hence importance of biopsy and histo-pathological study in order to reach a positive diagnosis and the healing "ad integrum" by means of suitable drugs is emphasized.\textsuperscript{19}

References

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Tuberculoma of Posterior Pharyngeal Wall

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A 28 year old male presented with a rare case of primary tuberculosis of oropharynx whose site and appearance simulated a malignancy, but histopathology showed a tuberculoma.