



Original article

Primary sinonasal tuberculosis: Our experiences in a tertiary care hospital of eastern India

Santosh Kumar Swain^{a,*}, Ishwar Chandra Behera^b, Mahesh Chandra Sahu^c^a Department of Otorhinolaryngology, IMS and SUM hospital, Siksha "O" Anusandhan University, K8, Kalinganagar, Bhubaneswar 751003, Odisha, India^b Department of Community Medicine, IMS and SUM hospital, Siksha "O" Anusandhan University, K8, Kalinganagar, Bhubaneswar 751003, Odisha, India^c Directorate of Medical Research, IMS and SUM hospital, Siksha "O" Anusandhan University, K8, Kalinganagar, Bhubaneswar 751003, Odisha, India

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ABSTRACT

Background: Primary sinonasal tuberculosis is an extremely rare clinical entity. Often the clinician fail to diagnose the primary sinonasal tuberculosis, so treatment is frequently delayed and leading to complications.**Objective:** To evaluate the clinical profile, diagnostic tools, treatment and outcome of primary sinonasal tuberculosis.**Materials and Methods:** Retrospective studies of six cases of primary sinonasal tuberculosis were done over period of five years. The detail clinical profile, diagnosis, treatment and outcome were studied in these patients.**Results:** Out of the six cases of primary sinonasal tuberculosis, four cases were female and two were male. The mean age during the time of diagnosis was 35 years (16–67 years). The most common clinical presentations were chronic nasal obstruction, epistaxis and ulcerations at the nasal vestibule and nasal cavity. Diagnosis was confirmed by Histopathological diagnosis in all six cases. All cases received antitubercular therapy for 6–9 months. All six patients successfully responded to antitubercular therapy. Two year follow up showed no relapse, dissemination and death.**Conclusion:** Primary sinonasal tuberculosis is a rare clinical entity. It is always suspected among the patients with nasal obstruction, epistaxis and ulcerations at nasal vestibule and nasal cavity in the region with high prevalence of Tuberculosis.© 2017 Egyptian Society of Ear, Nose, Throat and Allied Sciences. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

In developing countries, tuberculosis is a major health problem. Tuberculosis is a chronic granulomatous infection caused by a bacterium called *Mycobacterium tuberculosis*. Tuberculosis is an infectious disease caused by intra-cellular acid fast bacilli which is demonstrated by different acid fast stains like kinyoun and commonly used Ziehl Neelsen staining method.¹ Extrapulmonary Tuberculosis is the tuberculosis affecting the organs other than lung. Extrapulmonary tuberculosis is not rare and occurs mainly in the head and neck region. Cervical tuberculous lymphadenopathy is the most common form in the head and neck region. The common sites for extrapulmonary tuberculosis are lymph node tuberculosis, joint tuberculosis and milliary tuberculosis. Neck node tuberculosis

is the commonest variety of extrapulmonary tuberculosis. In Otorhinolaryngology practice, commonly reported tuberculosis are cervical lymph nodes, middle ear cleft, larynx, pharynx, nose, sinuses, tonsils and salivary glands. The clinical features depend on the organ to be involved.² Tuberculosis may be pulmonary or extrapulmonary variant. The primary site affected by tuberculosis is lung. Extrapulmonary tuberculosis occurs in 15% of all tuberculosis patients.³ Primary sinonasal tuberculosis is extremely rare clinical manifestations caused by mycobacterium tuberculosis even in high prevalence country.³ Sinonasal tuberculosis may occur secondary to pulmonary tuberculosis through contagious, haematogenous or lymphatic channel or lupus vulgaris of nasofacial skin.⁴ The symptoms of sinonasal tuberculosis may mimic other rhinosinusitis. Primary sinonasal tuberculosis is often missed as tubercular lesion by clinician, delay in diagnosis which causes morbidity and mortality. Our experiences of six cases of primary sinonasal tuberculosis, which are uncommon variety of extrapulmonary tuberculosis with successful treatment are reported here.

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* Corresponding author.

E-mail address: santoshswain@soauniversity.ac.in (S.K. Swain).<https://doi.org/10.1016/j.ejenta.2017.10.002>

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2. Materials methods

A retrospective study of six patients with primary sinonasal tuberculosis was done during 2009–2014 at the Otorhinolaryngology department of our tertiary care teaching hospital. The diagnoses of primary sinonasal tuberculosis of all six cases were confirmed on the basis of Histopathological examination. Past history of tuberculosis or any tubercular foci in the body other than sinonasal area were excluded from the study. The clinical profiles, demographic details, bacteriological, Histopathological, imagings of all six patients were analyzed.

3. Results

3.1. Case 1

A 32 years old lady attended the Outpatient department of Otorhinolaryngology with complaints of intermittent epistaxis and bilateral nasal obstruction months ago. On examination, anterior rhinoscopy showed multiple reddish to pinkish ulcerations covered with whitish cheesy materials in the both nasal cavity and bleeds on touch. The consistency and appearance of the nasal mass is different from nasal polyp. The skin of the nasal dorsum and other facial area were normal. The ear, oral cavity, oropharynx, larynx, hypopharynx and other head-neck area were within normal limits. Patient had taken BCG vaccination during her childhood. She had no evidence of pulmonary tuberculosis. Her laboratory data was showing erythrocyte sedimentation rate 22 mm/hour, negative HIV, VDRL, TPHA and C-ANCA. Chest X-ray and other biochemical tests were within normal limit. Computed tomography (CT scan) was showing soft tissue density in the anterior part of both nasal cavities along with maxillary sinus. Diagnostic nasal endoscopy showed multiple reddish to pinkish ulcerations in the nasal cavities along with cheesy materials in surface of the ulcers (Fig. 1). The tissue from the ulceration was sent for Histopathological and microbiological examination. The Ziehl Neelsen (ZN) staining revealed positive acid fast bacilli but Montoux test was negative. The Histopathological examination showed caseating granulomatous lesions with epithelioid cells, lymphocytes and few giant cells (Fig. 1). These findings confirmed the diagnosis of tuberculosis. Then patient had taken antitubercular therapy (ATT) with isoniazid (5 mg/kg), rifampicine (10 mg/kg), pyrazinamide (25 mg/kg) and ethambutol (15 mg/kg) for 2 months

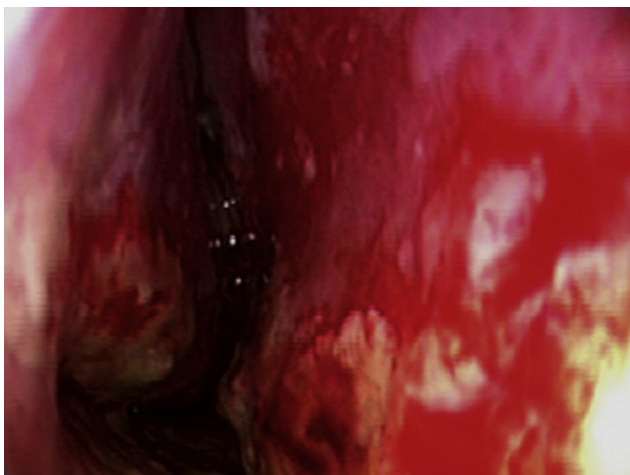


Fig. 1. Diagnostic nasal endoscopy showing multiple reddish to pinkish mass in the nasal cavities along with cheesy materials in the floor of the nose.

followed by isoniazid (5mg/kg) and rifampicine (10 mg/kg) for next 7 months. After complete course of 9 months of ATT, the lesions were completely disappeared.

3.2. Case 2

A 16 year old boy attended the Outpatient department of Otorhinolaryngology with complaints of nasal obstruction since 2 months. There was no complaints of epistaxis, hyposmia, coughing and fever or weight loss. Anterior rhinoscopy showed granular changes on the anterior part of the nasal septum with ulcerative appearance. The ulcer was single shallow with indurated surface along with irregular margin. Nasopharynx, oropharynx, larynx and ear did not have any pathological changes. There was no cervical lymphadenopathy. X-ray paranasal sinus and Chest X-ray were normal. Montoux test was positive whereas sputum was negative for AFB. VDRL, ELISA and HIV test were negative. Biopsy from the granular swelling of the nasal septum revealed a granulomatous lesion with Langerhans cells and caseations which confirmed the tuberculosis. Patient had completed nine month course of antitubercular therapy (ATT) and responded well to the therapy.

3.3. Case 3

A 21 year old girl attended the Out patient department of Otorhinolaryngology with complaints of blood stained nasal discharge since 3 months ago, more from right side of nostril. She had also complaints of nasal obstruction, post nasal drip which indicate sinusitis and also hyposmia. Anterior rhinoscopy showed deviated nasal septum to the right with thick purulent nasal discharge and ulcerations in the right nasal cavity. CT scan of nose and paranasal sinuses revealed diffuse mucosal thickening of the right maxillary and ethmoidal sinuses (Fig. 2). Chest X-ray was normal. Blood report showed moderate lymphocytosis with raised ESR. Sputum AFB was negative but Montoux test was positive. Patient was undergone for endoscopic sinus surgery with biopsy. The Histopathological report revealed chronic granulomatous infections with caseations and giant cells (Fig. 3). The sample stained with Ziehl Neelsen (ZN) stain showed acid fast bacilli. The diagnosis was confirmed for tuberculosis. Patient responded well to nine month course of ATT.



Fig. 2. CT scan of nose and paranasal sinuses showing diffuse mucosal thickening of the right maxillary and ethmoidal sinuses.

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