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Case Report

Primary nasal tuberculosis: diagnostic dilemma: a case report with role of GeneXpert

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ABSTRACT

Tuberculosis of the nose is so rare that it has become a forgotten entity among the clinicians. The clinicians fail to diagnose primary nasal TB as symptoms and signs of this specific nasal inflammation mimic other nonspecific nasal inflammatory conditions and therefore, its diagnosis and treatment is often delayed. We came across a case of primary nasal TB in a 65 years old female presented with complaints of nasal obstruction, epistaxis and anosmia since past 3 years. Anterior rhinoscopy showed friable nasal mass in both nasal cavities. Computed tomography scan showed heterogeneously enhancing soft tissue in nasal cavity with destruction of the nasal septum and hard palate. Histopathological examination and GeneXpert confirmed mycobacterium tuberculosis. The patient was put on antituberculous therapy. Nasal endoscopy and tissue biopsy play important role in diagnosis of the disease. GeneXpert test not only has good sensitivity and specificity for the diagnosis of EPTB but also perfectly fits the requirements of the Indian health care setting.

Keywords: Histopathology, Nasal, Tuberculosis, Primary, Extra-pulmonary

INTRODUCTION

Nasal TB was first reported by the Italian anatomist Giovanni Morgagni in 1761 during the autopsy of a young man with pulmonary TB, who had ulcerations on the nose.[1] Primary tuberculosis of the nose is quite rare that it has become a forgotten entity among clinicians. However, it should be kept in mind especially in the developing countries, in the differential diagnosis of chronic nasal symptoms and granulomatous lesions of the nose. Sinonasal tuberculosis (TB) usually occurs secondary to pulmonary TB by inhalation of infected particles and rarely presents as a local disease in the form of a primary infection. Primary nasal TB is quite rare mainly due to the protective action of sinonasal mucosa.[2]

It is difficult to diagnose primary nasal TB because it shows subtle signs and symptoms which mimic other non-specific nasal inflammatory conditions and therefore, its diagnosis and treatment is often delayed.[3]

However, histopathology and GeneXpert of the nasal lesions plays an important role in the timely diagnosis and treatment of sinonasal TB. We report a case of primary nasal TB with importance of histopathology and GeneXpert for early diagnosis.

CASE REPORT

A 65 years old female presented with complaints of nasal obstruction, epistaxis and anosmia since past 3 years.

There was no history of contact or family history of TB or any other chronic illness. There was no history of fever, weight loss, or any other chronic illness in the past. Anterior rhinoscopy showed friable nasal mass in both nasal cavities. Her laboratory investigations revealed hemoglobin 12.1 g%, total leukocyte count- 7520 cells/cumm, differential leukocyte count- P82L12E2M4, platelet count-3.08 lac, erythrocyte sedimentation rate (ESR)- 60 mm in 1st hr, blood sugar- 94 mg%, and blood urea- 20 mg/dl. Sputum for AFB was negative and chest X-ray was normal. Computed tomography scan showed heterogeneously enhancing soft tissue in nasal cavity with destruction of the nasal septum and hard palate (Figure 1).

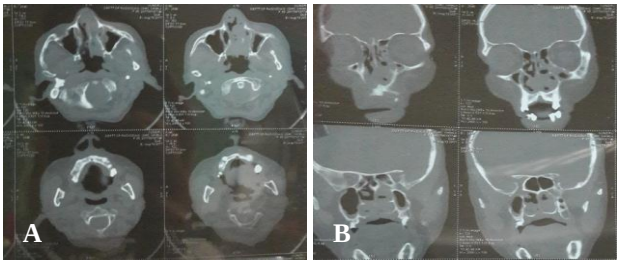

Figure 1 (A and B): Computed tomography scan showing heterogeneously enhancing soft tissue in nasal cavity with destruction of the nasal septum and hard palate.

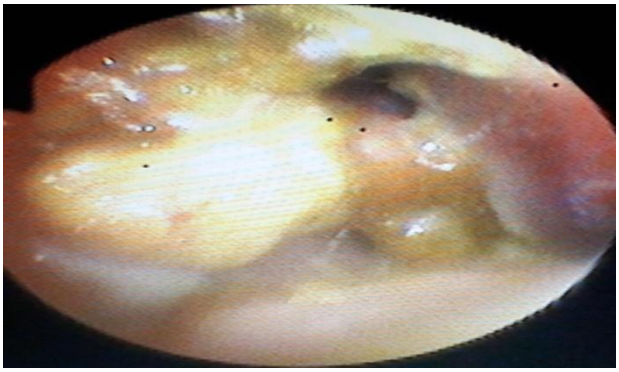

Figure 2: Nasal endoscopy: showing friable mass in nasal cavity with destruction of the nasal septum.

Thus, possibilities of carcinoma nasal cavity or granulomatous disease of nose was kept. Then the patient was taken up for nasal endoscopy with biopsy. Endoscopy showed friable mass in both nasal cavity with destruction of the nasal septum (Figure 2).

Multiple punch biopsies were taken and sent for histopathological examination which showed necrotizing granulomatous inflammation with acute inflammatory exudates (Figure 3).

No fungi or malignancy seen. ZN staining revealed no acid fast bacilli. GeneXpert revealed mycobacterium tuberculosis. The patient was put on antituberculous therapy and showed considerable symptomatic improvement on follow up.

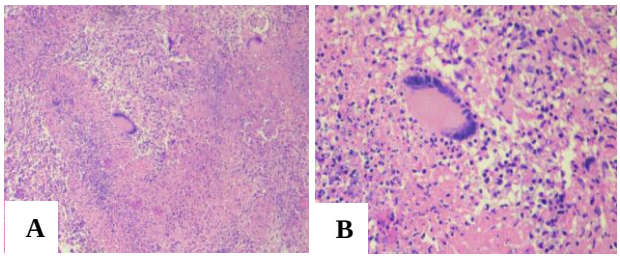

Figure 3: Histopathology: showing large areas of necrosis with epithelioid cell granuloma and Laghan's type giant cells. (A= Hematoxylin and eosin 100 X, B= Hematoxylin and eosin 400 X).

DISCUSSION

Tuberculosis (TB) is a disease caused by Mycobacterium tuberculosis. The most commonly involved organ is the lung, and extrapulmonary TB accounts for only about 15% of all TB cases.[4] The occurrence of primary sinonasal tuberculosis is rare, probably due to the self-protective functions of the nose, such as mechanical filtering by vibrissae, ciliary movement, inherent resistance of the nasal mucosa to bacterial growth and bactericidal action of nasal secretion.[5]

The most probable routes of infection for nasal tuberculosis are mainly associated with secondary infection from pulmonary tuberculosis. In addition, dust or sneezing droplets from infected persons may introduce the organism into the nasal mucosa.[5] Primary nasal TB was seen in our case as there was no evidence of pulmonary TB or any focus of TB anywhere else in the body.

Most commonly presenting symptom of nasal tuberculosis is nasal obstruction followed by nasal discharge, nasal bleed, crusting, eye watering, postnasal discharge, recurrent nasal polyps, and ulceration.[6] In our case complaints were nasal obstruction, nasal bleed and anosmia.

The main diagnostic problem is that nasal TB mimics other granulomatous diseases of nose and malignancy. Diagnosis of nasal TB requires a high index of suspicion. Radiological investigation may be helpful when TB of the head and neck is suspected. 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.[5,7]

Vadwai et al study showed that the Xpert test had true diagnostic potential with good sensitivity (86 to 100%) for specimens such as synovial, pericardial, and peritoneal fluids; pus; and fine-needle aspirates and

moderate sensitivity (63 to 73%) for tissues, lymph nodes, and pleural fluid but poor sensitivity (29%) in the case of CSF. GeneXpert test not only has good sensitivity and specificity for the diagnosis of EPTB but also perfectly fits the requirements of the Indian health care setting.[9]

The treatment of nasal tuberculosis is standard antitubercular drugs for extrapulmonary tuberculosis and usually sufficient to treat the disease. In case of significant nasal destruction, reconstructive surgery may be required later on.[8]

CONCLUSION

Nasal TB though not very frequent, still remains an important clinical entity which should be kept in mind during the differential diagnosis of patients with chronic inflammation of nose that does not respond to antibiotic treatment especially in developing countries. Histopathological examination and GeneXpert test are very important tools for the timely diagnosis of nasal TB.

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