**Tubercular Lesions in Otolaryngology - Our Experience**

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Abstract

Tuberculosis affects almost all organ systems in the body. As the incidence of extrapulmonary tuberculosis is increasing, it is challenging for the clinician to make the correct diagnosis at an early stage. We present 5 cases of extrapulmonary tuberculosis in otolaryngology with different clinical manifestations.

**Key Words:** Tuberculosis; extrapulmonary tuberculosis; otolaryngology; head neck

Introduction

Tuberculosis continues to intimidate the human race since time immemorial not only due to it is a medical malady, but also its social and economic impact. Though mycobacterium tuberculosis can affect any organ system, the pulmonary tuberculosis infection is the most common approximately 80% of all the cases of tuberculosis. The introduction of and the improvement in anti tubercular chemotherapy led to decrease in incidence of pulmonary and extra-pulmonary tuberculosis until-1980s when an alarming turnaround was observed. This change in epidemiology has resulted because of human immunodeficiency infection (HIV), acquired immune deficiency syndrome, immigration and outbreak of strains of multi drug resistant mycobacteria. Extra-pulmonary tuberculosis constitutes 15 to 20% of all cases of pulmonary tuberculosis in immunocompetent patients and accounts for more than 50% in HIV positive individuals. Tuberculosis of otolaryngological organ is one of the rarer forms of extra-pulmonary tuberculosis, but still poses a significant clinical and diagnostic challenge.

In order to contribute to a better understanding of clinical, epidemiological aspects and diagnostic difficulties in ENT related tuberculosis we have presented a few cases.

**Materials and Methods**

We have studied the patients who attended the otorhinolaryngology out-patient department in RG KAR medical college, Kolkata during the last one year.

**Case 1**

A 48-year-old farmer, diagnosed with active pulmonary TB attended the out-patients' department of otolaryngology for ulcerative lesions over his nose since last 4 years. The patient had a history of significant weight loss, evening rise of temperature and night sweats - the classic prodrome of tuberculosis since the last 6 months. He was known to be a defaulter - discontinued antitubercular drugs (ATD) 10 years back. Presently, his chest x-ray showed non-cavitating bilateral patchy opacities in the mid and upper zones suggestive of Koch's pneumonitis. He was sputum-positive for acid-fast bacilli (AFB) and was strongly positive for Mantoux (20 x 20mm). Apart from having a raised ESR, routine haematological investigations were within normal limits. The lesion over the nose had started about 4 years back as few coalescent reddish patches on the tip that softened and eroded with time leaving a small ulcer; this ulcer had gradually increased in size, with rapid progress in the last 6 months causing disfigurement. The patient had been prescribed several courses of antibiotics by physicians suspecting the condition to be vestibulitis, but the lesion did not ameliorate completely.

We took punch biopsies from the ulcer over the nose. Histopathology revealed several non-caseating ill-defined granulomas with typical Langerhan's giant cells, with dense lymphocytic infiltrates but without any feature of vasculitis, necrosis or dysplasia. No AFB was found on Ziehl-Neelsen (ZN) stain. The patient was diagnosed as a classical case of lupus vulgaris affecting the nose. He was put on cat II ATD under DOTS and nose healed after the completion of the treatment.

**Case 2**

A 30-year-old male patient presented to our out-patient department with multiple swellings involving both sides of the neck noted since one month. He had 6 month history of...
of chronic cough, night sweat, evening rise of temperature. On examination, there was bilateral level V lymphadenopathy; the lymph nodes were firm, matted, mobile without any signs of acute inflammation. Fine needle aspiration of lymph node revealed granulomatous inflammation. Chest x-ray showed patchy opacities in both the lungs suggestive of Koch's lesion. Sputum was positive for AFB bacilli. The patient was treated successfully with ATD category I under DOTS regimen.

Case 5

A 40-year-old male patient presented to the otolaryngology department with pain during swallowing for last 3 months. He had all the prodromal symptoms of pulmonary tuberculosis since last 8 months. On examination of oral cavity an ulcerated lesion seen over right tonsillar fossa. Sputum was positive for AFB bacilli and chest radiograph showed features of active Koch's lesion. Punch biopsy was taken from the lesion and showed non-caseating ill defined granuloma with langerhan's giant cell. Patient was treated with ATD category I under the DOTS regimen. The oro pharyngeal lesion disappeared after the completion of ATD.

Discussion:

Incidence of extrapulmonary tuberculosis is on the rise, probably due to the emergence of multidrug resistance, HIV/AIDS, immigration, and the coexistent poor socioeconomic condition and malnutrition in most developing and poor countries. Tuberculous infection is divided into four phases: first phase includes an initial establishment of mycobacterium tuberculosis infection in the resident macrophages. This is followed by influx of polymorphonuclear leucocytes, subsequently monocytes (second phase). Granuloma formation occurs in the third stage and in the fourth stage dissemination occurs to the local and distant sites.

Extrapulmonary tuberculosis is the result of dissemination of tubercle bacilli from an initial focus in the lungs soon after primary infection. The dissemination is primarily by way of the lympho-hematogenous route, with seeding of tubercle bacilli in almost all of the organs and tissues of the body. Although in most patients, both pulmonary and extrapulmonary lesions heal, clinically subtle granulomas contain tubercle bacilli can remain viable for decades. Subsequent breakdown of these lesions can lead to reactivation of extrapulmonary diseases. Reactivation may be clinically deceptive as the usual features of infection are often absent. Indeed, the infection may become far advanced before any observable symptom occurs. Extrapulmonary tuberculosis can occur in isolation or associated with pulmonary focus. Exogenously route may be through respiratory, genitourinary, gastrointestinal (unpasteurized milk ingestion), inoculation through abraded skin, mucus membrane, conjunctiva.
Extrapulmonary TB in otolaryngology can affect cervical lymphnodes, spine, oral cavity, larynx, salivary glands, pharynx, ear, and the nose and paranasal sinuses. Lymphadenopathy is the most common manifestation of extrapulmonary tuberculosis, cervical lymphnode being most common. Lymphatic spread may be through hilar lymph node from lung parenchyma or through tonsils to the nearest cervical lymphnode. In case 2 spread from the active parenchymal disease through lymphatics.

Case 1 illustrates a classic case of ulcerative form of lupus vulgaris. Lupus vulgaris occurs by haematogenous spread of tubercle bacilli involving the skin in a subject with moderate to high immunity who has had a reactivation of an internal tuberculous focus (generally in the lymph nodes, mucosa, lungs or joints). Less commonly, primary infection through direct inoculation from an exogenous source may occur in abraded skin or over the scar of Bacille Calmette-Guerin vaccination. Our patient was a defaulter, and this chronic, progressive cutaneous involvement most likely had resulted from the incompletely treated latent infection. Later, when his immunity was on a transient wane, the pulmonary lesion flared up producing manifestations of sputum-positive diseases, as also causing rapid progression of the nasal ulceration.

Case 3 was diagnosed of having chronic tubercular retropharyngeal abscess. As he had no cervical lymphadenopathy, or paratracheal lymphadenopathy, lymphatic spread of retropharyngeal space is excluded. In X-ray soft tissue neck showed no signs of cervical spine tuberculosis (no destruction of vertebra, no increase in disc space) here the probable disease spread may be hematogenous having primary source in lungs.

Case 4 is diagnosed of having tuberculous mastoiditis. As his chest x-ray was normal. It was probably the reactivation of latent tubercular focus or may be due to direct inoculation of mycobacterium tuberculosis through prexisting perforation in the tympanic membrane. He was probably previously exposed to tuberculosis which was not manifested at that time.

In case 5 diagnosed as mucosal tuberculosis, in which oropharynx gets involved usually through the coughed-up infected sputum or through the hematogenous route. In this case probably due to any breach in oropharyngeal mucosa inoculation of mycobacterium tuberculosis occur from the sputum.

Mycobacterium culture and histopathology are the cornerstones of diagnosis. Chest x ray and sputum examination are done to exclude pulmonary tuberculosis. Antitubercular chemotherapy is the mainstay of treatment of tuberculosis in head and neck region. Surgery may be required in some specific cases.

Conclusions -
Atypical presentation of extrapulmonary tuberculosis in the head and neck region, often causes delay in its diagnosis. Early diagnosis and prompt initiation of the proper treatment can completely cure the disease. Thorough history taking and proper clinical examination by understanding the pathology of extrapulmonary tuberculosis, plays an important role in its proper diagnosis. Hence by doing thorough evaluation of the disease, the chest physicians, otolaryngologists, dermatologists, primary physicians can diagnose the disease properly.

References -
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