Short Communication

Endobronchial tuberculosis

Abstract

Endobronchial tuberculosis is a rare entity observed in clinical practices. We describe a case of 30-year-old female who presented with non-specific clinical manifestations. A high index of suspicion is required for the diagnosis, more so during the early stage to prevent complications.

Key words:
Atelectasis, bronchus, cancer, complication, pneumonia, tuberculosis

Introduction

Endobronchial tuberculosis (EBTB) is the tuberculosis infection of the trachea-bronchial tree. It is a relatively uncommon detected manifestation of a common disease like tuberculosis and its incidence varies from 10% to 40% in patients with active tuberculosis and usually described in young individuals.[1-3] Since the clinical findings are non-specific, it can easily be confused with other diseases such as bronchial asthma, unresolved pneumonia or even lung cancer.[4-6] One reason of EBTB assuming importance is due to its characteristic delayed diagnosis, treatment and long term sequel of bronchostenosis that may cause complications such as pulmonary infection, atelectasis, bronchiectasis and even death by inducing respiratory failure and asphyxia. In addition, the bronchostenosis may lead to intractable tuberculosis and make patient a continuous source of chronic infection.

Case Report

A 30-year-old married female presented with 1 month complaints of fever, cough with expectoration and right side chest pain. Past and personal history was not significant. On examination patient was febrile with the pulse rate of 90/m, respiratory rate - 22/m, blood pressure - 120/80 mm of Hg, Hb - 8 g/dl, weight - 42 kg; right supra-clavicular lymph node were palpable. Chest examination showed decrease chest movement along with dull percussion note and decreased intensity of breath sound on the right side. Chest-X-ray revealed right hemi-opaque lung [Figure 1]. Sputum for acid fast bacilli (two samples) was negative. Ultrasound chest showed right side mild pleural effusion with underlying collapse consolidation. Fine needle aspiration cytology of supraclavicular lymph node revealed reactive lymphadenitis. Pleural fluid examination was exudative in nature with lymphocyte predominance. Contrast-enhanced computed tomography chest showed right side collapse and consolidation with enlarged bilateral supraclavicular, paratracheal, pretracheal and prevascular lymph nodes [Figure 2]. Fiber-optic bronchoscopy revealed marked narrowing in right main stem bronchus with inflammation, hyperemia and mucous plugging [Figure 3]. Endobronchial biopsy showed multiple epitheliod cells granulomas along with Langerhans giant cell compatible with EBTB. Patient was started on anti-tubercular therapy along with oral prednisolone (1 mg/kg) leading to clinical improvement.

Discussion

The clinical manifestations of EBTB may be acute, insidious or delayed with non-specific chest manifestations while modern treatment has led in overall decline of EBTB. Currently, its incidence may be underestimated since diagnostic bronchoscopy is not performed on every patient with tuberculosis.

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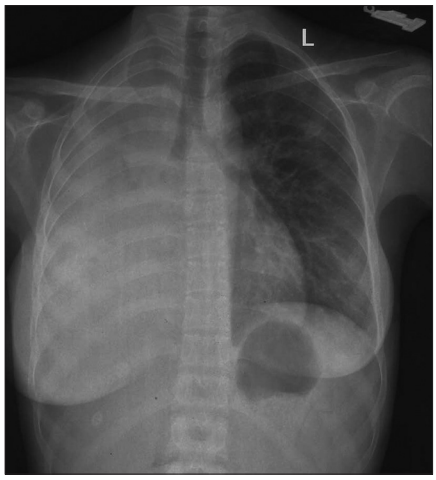

Figure 1: Chest-X-ray revealed the right hemi-opaque lung

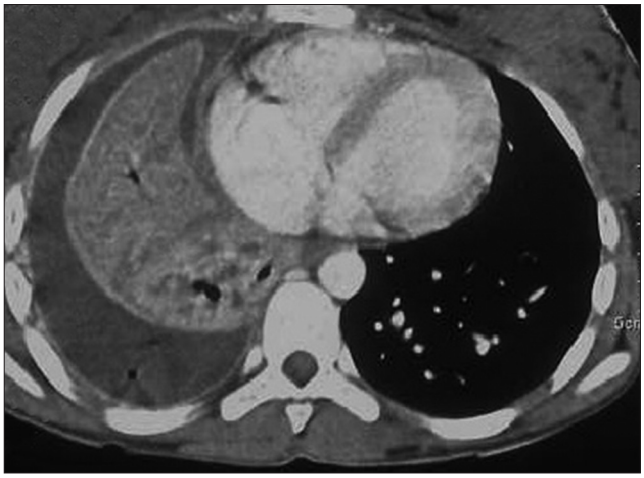

Figure 2: Contrast-enhanced computed tomography chest showed the right side collapse and consolidation

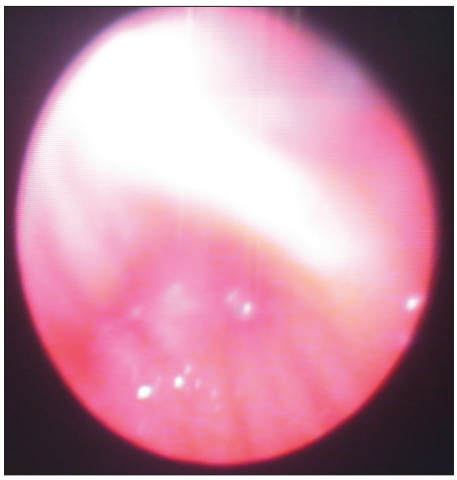

Figure 3: Fiber-optic bronchoscopy revealed marked narrowing in the right main stem bronchus with inflammation, hyperemia and mucous plugging

The pathogenesis of EBTB is not yet fully established. However, proposed mechanisms include direct implantation of tubercle bacilli into the bronchus from an adjacent pulmonary parenchymal lesion, direct airway infiltration from an adjacent tuberculous mediastinal lymph node, erosion and protrusion of an intrathoracic tuberculous lymph node into bronchus, hematogenous spread and extension to the peri-bronchial region by lymphatic drainage.[4,7,8] The various subtypes of EBTB described bronchoscopically are actively caseating, edematous-hyperemic, fibrostenotic, tumorous, granular and ulcerative.

On bronchoscopy, EBTB is known to mimic bronchial adenoma, carcinoid or malignancy.[3,9] In our case; however, young age of the patient was against the possibility of bronchogenic carcinoma and the patient's clinical presentation also was not suggestive of a carcinoid. Prompt diagnosis and efficacious treatment are of paramount importance in EBTB in order to minimize the resultant stenosis. The role of oral steroids in preventing bronchial stenosis has been controversial with some studies favoring its use while others showing no advantage. In ulcerative type of EBTB, use of aerosolized streptomycin and steroids has been reported to reduce healing time of ulcerous lesion and even lesser degree of bronchial stenosis.[10]

In conclusion, the diagnosis of EBTB is easily delayed or mistaken because of non-specific clinical presentation, misleading radiological findings and the low incidence of positive acid-fast bacilli staining. A high index of suspicion is required for the diagnosis of this disease, more so during the early stage to prevent complications.

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