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February 1994

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## Recommended Citation

Khan, J. A., Islam, N., Akhter, J., Hussain, S. F. (1994). Endobronchial tuberculosis simulating bronchial asthma. *Journal of Pakistan Medical Association*, 44(2), 49-50.

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# Endobronchial Tuberculosis Simulating Bronchial Asthma

Pages with reference to book, From 49 To 50

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## Introduction

Endobronchial tuberculosis (ETB) was not that uncommon before the advent of anti-tuberculosis chemotherapy but it is rarely encountered nowadays. The importance of ETB is that it can present as a normal chest X-ray and hence diagnosis may be delayed. Endobronchial tuberculosis can present in variety of ways. Here we describe a case where ETB was initially mistaken as bronchial asthma.

## Case

A 23 years old female medical student presented to the Aga Khan Hospital with three months history of cough; sputum and weight loss. Physical examination at that time revealed bilateral wheeze and PEFV was reduced to 60% of predictive value. Chest X-ray PA and lateral views were normal. A diagnosis of bronchial asthma was made and patient was started on inhaled B2 agonist. Her cough slightly improved, however, she continued to loose weight and developed fever. She was admitted in the hospital for further investigations. There was nothing significant in the past medical history. She also denied any family history of tuberculosis. On examination she looked ill, her weight was 40 kg and temperature of 37.4°C. There was no lymphadenopathy. Abdominal, cardiovascular and central nervous system examinations were within normal limits. Her chest examination revealed wheeze more marked on the left mid zone. Rest of the chest examination was normal. Investigations showed Hb 11.6 g/dl, WBC 11.9x10<sup>9</sup>/L, with 72% neutrophil, ESR was 32 mm after first hour. Renal and liver function tests were normal. Sputum smear for acid fast bacilli (AFB) was negative. Fibre optic bronchoscopy under local anaesthesia showed that left main stem and apical segment of left lower lobe were severely inflamed with mucosa covered by whitish necrotic material. Rest of the bronchial tree was normal. Bronchial lavage was done and biopsy obtained. Examination of bronchial lavage (from apical segment) showed presence of AFB culture report later confirmed mycobacterium tuberculosis. Biopsy of bronchial mucosa showed presence of chronic granulomatous inflammation. Patient was started on anti-tuberculous treatment and at six weeks follow-up was asymptomatic and physical examination was normal. She had gained 4kg of weight. During 6 months of treatment patient remained well.

## Discussion

Endobronchial tuberculosis is not as well known to physicians as tuberculosis involving the lung parenchyma. It has been said that a normal chest X-ray almost always exclude pulmonary tuberculosis with the exception of endobronchial tuberculosis which can present without showing any abnormality on chest x-ray. Our patient also had normal chest x-ray on several occasions, hence the diagnosis was delayed. Endobronchial tuberculosis can present in variety of ways. It can be mistaken in elderly patients as a case of lung cancer when they present as chronic cough and weight loss<sup>1</sup>. Endobronchial mass may be found on bronchoscopy which mimicks lung cancer on naked eye examination<sup>2,3</sup>. It can also simulate foreign body aspiration<sup>4</sup>. Endobronchial tuberculosis sometime can be mistaken as obstructive airway disease<sup>5</sup>. Our patient was also mistaken initially as a case of bronchial asthma. It can also present as unilateral obstructive emphysema on the chest X-ray<sup>6</sup>. X-ray may show abnormality at a

later stage of disease when there is associated parenchymal involvement. A higher incidence of endobronchial involvement has been reported in patient with lower lung field tuberculosis<sup>7</sup>. CT scan is quite valuable in assessing the degree of endobronchial involvement<sup>8</sup>. Endobronchial tuberculosis has been classified into various sub-types based on bronchoscopic findings<sup>9</sup>. This includes: (a) stenotic type with fibrosis, (b) stenotic type without fibrosis, (c) actively caseating type, (d) tumorous type, (e) ulcerative type, (f) granular type and (g) non-specific bronchitic type. Standard anti-tuberculosis treatment is recommended. Stenosis of bronchial tree and post-stenotic dilatation is well recognized complication<sup>6,10</sup>. In an attempt to prevent stricture and stenosis of bronchial tree steroids have been tried but not found to be very useful<sup>10</sup>, Chan et al however described a case in which corticosteroid did help in improving airway lesion<sup>11</sup>. Other modalities available for treatment of stenosis of airways following endobronchial tuberculosis include surgical resection followed by anastomosis, balloon dilatation, laser photo resection or a combination of these procedures<sup>12</sup>. In conclusion, diagnosis of ETB can be difficult as ETB can occur in the absence of X-ray abnormality, sputum may also be negative for acid fast bacilli. Therefore, bronchoscopy should be done when this condition is suspected in a patient who has unexplained cough, wheezing, dyspnoea or hemoptysis.

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