

Tuberculosis presenting as endobronchial tumor

Sarfraz Saleemi, MSc, MRCP, Mohammed Khalid, MD, FCCP, Mohammed Zeitouni, MD, FCCP, Saleh Al-Dammas, MD, FCCP.

ABSTRACT

Endobronchial tuberculosis (TB) can be present in various forms including ulceration, hyperemia and granulation tissue and rarely as mass lesion. We present a case of TB presenting as endobronchial tumor mimicking lung cancer on bronchoscopic examination. The histology of the tumor showed caseating granuloma and bronchial lavage culture was positive for mycobacterium TB. The patient improved after anti TB treatment. Endobronchial TB is usually a complication of primary pulmonary TB mostly occurring in children but can occur in adults. The most common form of endobronchial TB is mucosal hyperemia and erosions leading to ulceration and granulation tissue. Cough is the most common symptom and the most serious complication is bronchial stenosis. Several treatment modalities have been tried to decrease the incidence of bronchial stenosis including isoniazid inhalation and systemic steroids but results are not convincing. Early diagnosis and treatment is essential to prevent this debilitating complication.

Saudi Med J 2004; Vol. 25 (8): 1103-1105

Endobronchial tuberculosis (TB) is a very common phenomenon before the antituberculous therapy era, but cases are still being reported mainly in the underdeveloped world. It is usually associated with primary TB infection and is defined as involvement of the tracheobronchial tree with microbial and histological evidence.¹⁻³ Endobronchial TB can present as ulceration, hyperemia, granulation tissue and rarely a mass lesion mimicking an endobronchial tumor. Bronchial stenosis is the main complication of endobronchial TB if not treated early and may result in significant morbidity.⁴ We present a case of TB presenting as endobronchial tumor.

Case Report. A 28-year-old Sudanese office worker who was a casual smoker presented with 4 weeks history of dry cough. His past medical

history of note was Kaposi sarcoma of lower limbs treated with chemotherapy and radiation therapy. His blood test was negative for HIV antibody on several occasions. His clinical examination was unremarkable except residual changes on his lower limbs after phototherapy and radiotherapy. A chest x-ray showed nodular infiltrates along the right heart border (**Figure 1**). Blood investigations including blood count, renal and hepatic functions were normal. Sputum for acid fast stain was negative. A bronchoscopy was carried out which showed 2 mass lesions, one in the bronchus intermedius and another in the right middle lobe bronchus (**Figure 2**).

A bronchoalveolar lavage and biopsy of the lesion was performed. The biopsy showed caseating granulomas (**Figure 3**). The patient was started on anti TB treatment comprising of 4 drugs. Later on

From the Department of Medicine, Section of Pulmonary Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, *Kingdom of Saudi Arabia*.

Received 24th December 2003. Accepted for publication in final form 1st March 2004.

Address correspondence and reprint request to: Dr. Sarfraz Saleemi, Pulmonary Section, Department of Medicine, MBC 46, King Faisal Specialist Hospital and Research Centre, PO Box 3354, Riyadh 11211, *Kingdom of Saudi Arabia*. Tel. +966 (1) 4427493. Fax. +966 (1) 4427499 E-mail: sasaleemi@hotmail.com



Figure 1

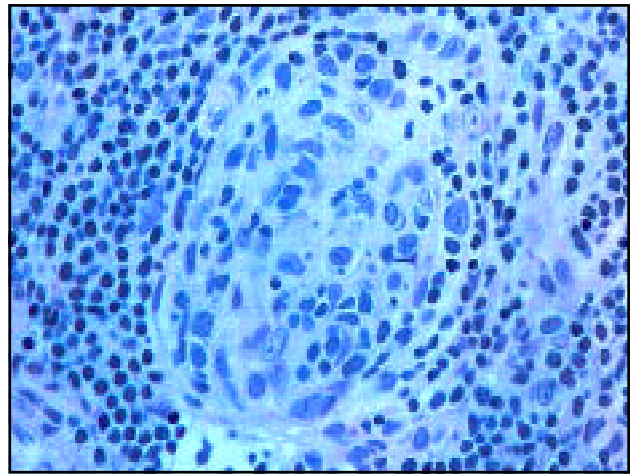


Figure 3

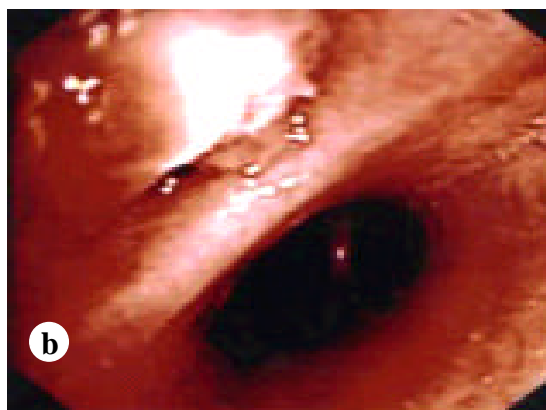
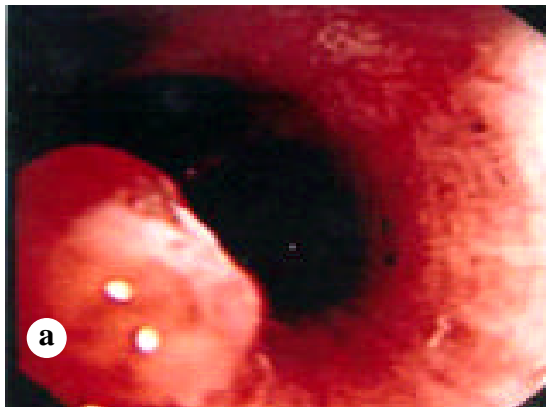


Figure 2

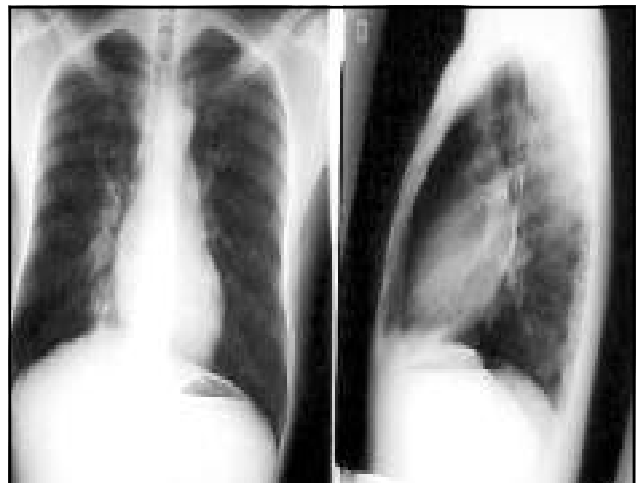


Figure 4

Figure 1 - Chest x-ray on presentation showing infiltrates in the right lower lobe.

Figure 2 - Bronchoscopic view showing **a**) mass lesion in bronchus intermedius **b**) right middle lobe.

Figure 3 - Histology showing caseating granuloma.

Figure 4 - Post-treatment chest x-ray showing significant resolution of lower lobe infiltrates.

the bronchial lavage culture came back as positive for mycobacterium TB, which was sensitive to all anti TB medications. Follow-up after 4 weeks showed resolution of cough symptom and significant clearing of lung infiltrates on repeat chest x-ray (Figure 4). He was advised to continue treatment with 4 drugs including isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months and 2 drugs including isoniazid and rifampicin for another 4 months.

Discussion. Endobronchial TB is usually a complication of primary pulmonary TB mostly occurring in children, but can occur in adults. Mucosal erosion due to sub mucosal lymph node involvement can lead to endobronchial ulceration, granulation tissue, polypoid or ulcerous mass lesion and local infiltration causing stenosis.⁵⁻⁶ Erosion of mediastinal lymph nodes into main bronchus can occur.⁷ Endobronchial TB presenting as mass lesion simulating lung cancer is rare.⁸

Cough is the most frequent symptom occurring in almost 97% of cases. The incidence of endobronchial TB is higher in females. The most serious complication of endobronchial TB is bronchial stenosis. Early diagnosis and treatment is essential in preventing this disabling complication which can lead to morbidity and even mortality due to secondary complications.⁹ Several treatment options have been tried to prevent bronchial stenosis including isoniazid inhalation and systemic steroids but results are not promising. Role of corticosteroids therapy in preventing complications in endobronchial TB is controversial. Park et al¹⁰ from South Korea have shown no influence on the outcome of endobronchial TB by addition of corticosteroids in a prospective trial. Most authors stress the need for early bronchoscopy to diagnose the condition so that anti TB treatment is started in time to prevent serious complications of endobronchial TB.¹¹⁻¹²

References

1. Lincoln EM, Harris LC, Bovornkitti S, Carratero R. The course and prognosis of endobronchial tuberculosis in children. *Am Rev Tuberc* 1956; 74: 246-255.
2. Lee JH, Park SS, Lee DH, Shin DH, Yang SC, Yoo BM. Endobronchial tuberculosis. Clinical and bronchoscopic features in 121 cases. *Chest* 1992; 102: 990-994.
3. Ip MS, So SY, Lam WK, Mok CK. Endobronchial tuberculosis revisited. *Chest* 1986; 89: 72-30.
4. Seiden HS, Thomas P. Endobronchial tuberculosis and its sequelae. *CMAJ* 1981; 124: 165-169.
5. Matthews JI, Matarese SL, Carpenter JL. Endobronchial tuberculosis simulating lung cancer. *Chest* 1984; 86: 642-644.
6. Altin S, Cikrikcioglu S, Morgul M, Kosaf F, Ozyurt H. 50 Endobronchial tuberculosis cases based on bronchoscopic diagnosis. *Respiration* 1997; 64: 162-164.
7. Frostad S. Lymph node perforation through the bronchial tree in children with primary tuberculosis. *Acta Tuberc Scand* 1959; 47 (Suppl): 104-109.
8. Guleria R, Gupta R, Panda JN. Endobronchial tuberculosis simulating lung cancer. *Indian J Chest Dis Allied Sci* 1997; 39: 251-254.
9. Lee JH, Chung HS. Bronchoscopic, radiologic and pulmonary function evaluation of endobronchial tuberculosis. *Respirology* 2000; 5: 411-417.
10. Park IW, Choi BW, Hue SH. Prospective study of corticosteroid as an adjunct in the treatment of Endobronchial tuberculosis in adults. *Respirology* 1997; 2: 275-281.
11. Cherian MJ, Dahniya MH, Al-Marzouk N, Osmanagich E, Abul A, Haider A. Primary pulmonary tuberculosis presenting as mass lesions and simulating tumours in children. *Australas Radiol* 1998; 42: 309-312.
12. Chung HS, Lee JH. Bronchoscopic assessment of the evolution of Endobronchial tuberculosis. *Chest* 2000; 117: 385-392.