Tuberculosis simulating malignancy

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ABSTRACT

We report 2 cases presenting with symptoms simulating malignancy. In the first patient, the initial diagnosis was lung carcinoma with lymph node metastasis while, the second patient showed lobulated mass posterior to lower lobe bronchus with paralysis of left vocal cord. Biopsy in both patients, showed caseating granuloma compatible with pulmonary tuberculosis. Both responded to antituberculosis chemotherapy.

Keywords: Tuberculosis, malignancy.


Worldwide, the incidence of tuberculosis is on the increase, both in developed and developing countries. Awareness of the atypical presentations of tuberculosis is essential, so that appropriate investigations are sought to confirm the diagnosis of this treatable condition. Tuberculosis may simulate malignancy or may occur in association with malignancy. We report 2 cases where the clinical picture was highly suggestive of lung malignancy, but investigations brought out a less sinister diagnosis of tuberculosis.

Case Reports.

Patient 1. A 38-year-old Saudi lady, non-smoker was admitted with a 4 month history of cough with mucoid sputum, right lower pleuritic chest pain, fever and loss of weight. There was no history of hemoptysis, dyspnoea, previous lung problems or contact with a tuberculosis (TB) patient. Physical examination revealed an ill looking lady who had pallor and pyrexia. There was a 3 x 3 cm right supraclavicular lymph node, which was firm and non-tender. Chest examination showed a swelling in the right scapular region, firm non-tender and fixed. There was dullness and reduced air entry at the right infrascapular region. A hepatomegaly of 4 cm below the right costal margin was also noted. The chest X-ray showed a moderate sized pleural effusion on the right. The 4th right rib was partially destroyed posteriorly and there was erosion of the 6th rib on the left (Figure 1). The initial diagnosis was carcinoma of the lung with metastasis to lymph nodes, liver and ribs. Her hemoglobin was 9.8, white cell count 3.8, ESR 105, alkaline phosphatase 352 and Gamma GT 36. Her serum albumin, bilirubin, ALT and calcium were normal. Bone scintigraphy (600 Mbp, Tc 99 mm MDP) showed increased tracer uptake in the 6th left rib posteriorly, 4th right rib posteriorly and 8th right rib anteriorly. A CT scan of the chest and abdomen revealed destruction of the right 4th rib with a large soft tissue component containing bony elements, and destruction of the left 6th rib with a soft tissue component extending into scapular soft tissues (Figure 2). There was a moderate sized pleural effusion on the right, and some consolidation in the right lower lobe. Liver, spleen, pancreas and kidneys were normal. Sputum AFB was negative on direct smear and on culture. Right supraclavicular lymph node biopsy showed caseating granulomas with Langhans’ giant cells, suggestive of TB. Excision biopsy of the mass on the left chest wall showed caseating granuloma. Mycobacterium tuberculosis was isolated on culture from the necrotic...
Figure 1 - Chest radiograph showing right sided pleural effusion. Note partial destruction of 4th rib on the right and 6th rib on the left.

Figure 2 - Chest CT scan demonstrating rib destruction and adjacent soft tissue swelling on the left.

Figure 3 - Chest X-ray showing a non-homogenous opacity in the left hilar area.

Figure 4 - CT scan of chest showing a lobulated mass lesion close to the left lower lobe bronchus.
cheesy material obtained from the chest wall lesion. She was started on anti-TB medications (Rifampicin, Isoniazid, Ethambutol and Pyrazinamide). Three weeks later she became afebrile, generally better and started gaining weight. The diagnosis of TB involving the lung, pleura and ribs in this case was confirmed on the basis of the histology, isolation of the organism in culture and response to the anti-TB medication.

**Patient 2.** A 30-year-old, non-smoker and previously healthy man, presented with a 2 month history of hoarseness of voice and dry cough. His appetite was poor, but the weight was steady. He had no history of hemoptysis, chest pain, dyspnoea, fever or night sweats. Physical examination was essentially normal. His full blood count, ESR, thyroid function test and serum calcium were normal. Chest X-ray showed a left hilar opacity (Figure 3). The CT scan of the chest showed a lobulated mass posterior to the lower lobe bronchus on the left (Figure 4). The Mantoux test was positive with 20 x 22 mm induration. Bronchoscopy revealed paralyzed left vocal cord and 2 nodular lesions in the left main bronchus at a distance of 2 cm and 3 cm from the carina. The biopsy of the lesions on histology showed caseating granulomas suggestive of endobronchial TB. Mycobacterium TB was later isolated on culture from bronchial washing. Hoarseness of voice due to vocal cord paralysis, mass lesion on the chest CT scan and endobronchial lesions on bronchoscopy raised a strong suspicion of malignancy, but a biopsy was consistent with the diagnosis of TB. He was treated with a 4-drug anti-TB regimen for a period of 6 months. He showed good response to this therapy. The lung mass disappeared but he was left with mild residual hoarseness of voice.

**Discussion.** Tuberculosis is a disease with protean manifestations, and may involve almost any organ. Awareness of its atypical presentation and a high index of suspicion may help one to make this important treatable diagnosis. Our first case, presented with multiple rib destruction in the presence of a lung shadow and supraclavicular lymph node, all highly suggestive of malignancy. Bone and joint TB account for 15% of the extrapulmonary forms of TB. The spine is the most common site of skeletal TB. Involvement of ribs and chest wall is uncommon, seen in about 0.5% of bone and joint TB. There are a few previous case reports of TB involving ribs and other bones simulating malignancy, but they are mostly unifocal. Our case is more unusual in that the patient had involvement of lung parenchyma, pleura and rib destruction at multiple sites, one site on the opposite side of the lung lesion. Disease of the ribs may occur either by contiguous spread from pleural or parenchymal lung disease or by hematogenous route. Isotope bone scan is unhelpful in distinguishing the rib destruction produced by TB from malignancy. CT scan is valuable in assessing the extent of rib involvement and also to demonstrate the soft tissue component with which it is very often associated.

The 2nd case presented with hoarseness of voice and a lung shadow. His hoarseness was related to TB lymphadenitis in the mediastinum causing pressure effect on the left recurrent laryngeal nerve. In such cases, recovery of hoarseness of voice may not be complete, even with anti-TB treatment as in this case. Our patient also had endobronchial nodular lesions, which further heightened our suspicion of malignancy. In both our patients, tissue histology showed caseating granulomas, which gave us the initial clue to the diagnosis. Other investigations like CT scan were helpful in anatomical delineation of the lesions.

We therefore conclude, that TB may simulate a clinical picture of malignancy and should always be considered particularly when the clinical picture is atypical. With the resurgence of TB recently, we feel that we are likely to see more patients of this condition with atypical presentations.

**References**