CASE REPORT

Pulmonary tuberculosis with raised diaphragm

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Tuberculosis; Acid fast bacilli; Hemidiaphragm

Summary
For the diagnosis of pulmonary tuberculosis positivity of the sputum for acid fast bacilli is considered confirmatory. In such cases sometimes the other associated clinical condition may go undiagnosed. We are reporting case report in which the sputum for AFB positive male presented with the raised hemidiaphragm.

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Introduction
Diagnosis of pulmonary tuberculosis is considered confirmatory when it is made by demonstration of acid fast bacilli (AFB) in presence of signs and symptoms suggestive of tuberculosis. Association of tuberculosis with diabetes is not new. But the occurrence of the tuberculosis and malignancy in the same part of the lung is rarely suspected specially in the presence of positive sputum microscopy for AFB.

Case report
A 34-year old male, smoker, farmer by occupation presented to the primary health centre with fever and cough with expectoration of 6 weeks duration. His sputum for acid fast bacilli was done and found to be positive in all the three samples. His X-ray chest showed cavitating lesion in left upper lung zone along with raised left hemidiaphragm (Fig. 1). WHO category 1 DOTS (Isoniazid, Rifampicin, Pyrazinamide, Ethambutol) was started in standard doses. Patient started recovering with the subsidence of fever but the cough and expectoration persists.

After 1½ months of therapy patient presented to the emergency room with an episode of haemoptysis expectorating about 20 ml of blood. Along with it he also had developed left sided chest pain. His clinical examination showed pulse rate of 86/min, respiratory rate of 20/min and BP—110/80 mmHg. He was anemic. Cyanosis and ictrus was not present. Laboratory investigation showed hemoglobin—9 gm%; TLC—9600/cu mm and DLC—P80L18E02. Renal function and liver function test were in normal limits. Repeat X-ray chest was done which showed cavity in left upper and middle lung field which was increased in comparison to previous one and the raised left hemidiaphragm was found...
(Fig. 2). CECT thorax showed the large irregular cavitory lesion with thickened wall and air fluid level; extending from anterior segment of left upper lobe, apical segment of left lower lobe with posterior and lateral basal segment of left lower lobe with a mural nodule in anterior aspect of cavity in the region of apical segment of left upper lobe (Fig. 3) Mediastinal and paratracheal group of lymphnode was enlarged. Metastatic nodule was also seen in liver. Fine Needle Aspiration Cytology of the lung and liver lesion confirmed the diagnosis of adenocarcinoma. Test for HIV was negative. Sputum for acid fast bacilli was performed again and found to be negative in three consecutive early morning samples this time. In view of this, repeat examination of the one and half month old slide was performed and the positivity of the AFB was confirmed.

Patient was advised paclitaxel and cisplatin based chemotherapy. Anti tubercular treatment was also continued.

Discussion

Pulmonary tuberculosis was found to be in 0.7% cases of lung cancer.1 Association of sputum positive pulmonary tuberculosis was reported to be 2% in lung cancer patients. However, association of pulmonary tuberculosis and malignancy of other organs is not rare. It may be due to lower immunity occurring as a result of anti-neoplastic therapy. The presence of carcinoma lung is rarely suspected in patients with active tuberculosis especially when the diagnosis is made on the basis of sputum examination. Symptoms and X-ray findings may be linked to the tuberculosis when the two conditions co-exist especially when both the conditions involves the upper lobe as seen in our case.

In India like country where incidence of tuberculosis is high one may miss the diagnosis of malignancy when sputum is also become positive for acid fast bacilli. But certain finding in X-ray may help in suspecting the diagnosis of malignancy lung along with pulmonary tuberculosis. In our case clue was the raised diaphragm. Diaphragm is supplied by the phrenic nerve. Phrenic nerve can get involved along its course in mediastinum leading to hemidiaphragmatic paralysis or paresis. In the presence of normal ventilatory reserve this complication does not lead to symptoms. Normally right diaphragm is at the level of sixth rib and the left dome of diaphragm is half an interspace lower than right.2 But in 10% of population diaphragm is at the same level or left hemidiaphragm at higher level.3 Although raised diaphragm on left side may be due to gaseous distension of stomach. Pulmonary infarction, collapse, pneumonia, fracture rib and pleurisy also cause raised diaphragm due to decreased chest movement so the diaphragm is not much elevated. But in the case of tumor, trauma and surgical intervention there occurs marked elevation of diaphragm as in our case.4

The diagnosis of lung cancer is delayed mainly because of masking by a tuberculous lesion, and this suggests that in patients in whom a predominant or growing cavity or nodule is present and who shows little improvement of symptoms despite antituberculous or other medical therapy, coexisting cancer should be suspected.

Conflicts of interest statement

The authors have no conflict of interest.
References

