Case Report

Pleural effusion presenting as mediastinal widening

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ABSTRACT

We report a case of middle-aged female presenting with mediastinal widening on chest radiograph owing to pleural effusion. The pleural effusion presenting as mediastinal widening on chest radiograph is rarely reported.

KEY WORDS: Dental infections, mediastinal widening, pleural effusion

INTRODUCTION

Mediastinal widening is a relatively common finding on chest radiograph and its management is often a clinical challenge. It is caused by numerous conditions. Common diseases causing mediastinal widening are tumor, vascular shadow (such as aortic aneurysm, aortic dissection and aortic unfolding) and enlarged lymphoid mass. Most of the cases require immediate attention. However, the major difficulties for the clinicians as well as the radiologists are to arrive at a diagnosis and treat. We report a case of middle-aged female presenting with a rare cause of mediastinal widening on chest radiograph. The mediastinal widening in our case was owing to the pleural pathology.

CASE REPORT

A 55-year-old female presented with low grade fever, dry cough and chest discomfort. There was no history of chest pain. She was having psoriasis since 15 years. Patient was on azathioprine 50 mg since 1½ years. She developed diabetes mellitus 6 months back and her blood sugar levels were under control. She had toothache (left side molar area) due to periodontal infection associated with discharge of pus from the cheek since 15 days. Pus culture showed Staphylococcus aureus. Patient was given injection ampicillin, gentamycin and metronidazole. Her total leukocyte count was 20,400 with 88% neutrophils.

She visited us for chest discomfort and dry cough with chest radiographic abnormality of mediastinal widening [Figure 1]. To explore the cause of mediastinal shadow, contrast enhanced computed tomography (CECT) thorax was carried out and it showed two large loculated pleural effusions (mean Hounsfield unit of 8) along left anterior and left posterolateral chest wall [Figure 2]. Larger collection was of size 9 cm x 8 cm. Both collections had communication with each other and the fluid accumulated medially.

Intercostal drain was inserted in left 5th intercostal space in midaxillary line. About 800 ml of pus was drained. Pus culture was sterile and negative for acid fast bacilli. Patient was continued on same antibiotics. Chest radiograph improved gradually [Figure 3]. Ultrasound chest showed...
cause opacity of hemithorax and may cause mediastinal shift. Loculated effusions usually present as localized opacity. If the effusion is in horizontal or oblique fissure, it can mimic pulmonary mass (pseudotumor). However, pleural effusion presenting with mediastinal widening on chest radiograph is possible when it involves the mediastinal pleura or is present at adjacent area sparing lateral aspect.

In our patient who was found to have a mediastinal widening on chest radiograph, with a background history of the patient suffering from chronic diseases such as psoriasis and diabetes mellitus and being on long-term corticosteroids and immunosuppressants, mediastinal lipomatosis was suspected initially. However, it is usually a benign condition and mostly asymptomatic. The cardiac status of the patient was within normal limits and there was no clinical suspicion of cardiac diseases ruling out cardiac etiology. Mediastinal mass was considered as one of the differential diagnosis. Tubercular or infective hilar lymphadenopathy and tubercular pericardial effusion was especially considered keeping in view the fact that the patient was on long-term immunosuppressants and was diabetic. The CECT thorax finally revealed the cause of mediastinal widening.

The CECT thorax [Figure 2] showed two large loculated pleural effusions along left anterior and left posterolateral chest wall mimicking mediastinal widening on chest radiograph. There was no other cause implicated for the noticeable widening and these two collections communicating with each other were causing the widened mediastinum. After insertion of intercostal drainage tube, the pus was drained and patient was kept under antibiotic cover, the chest radiograph improved gradually and the mediastinal widening resolved significantly on subsequent films.

So, in our case, with patient having a history of chronic diseases of psoriasis and diabetes mellitus and being on long-term immunosuppressants, it was the infective pyogenic pathology, which was the cause of pleural effusion and causing mediastinal widening atypically and it responded well to the antibiotic treatment and pus drainage. The infected process possibly started from the periodontal area and finally spread to the pleural cavity and was finally halted with timely medical management.

There could be two possible mechanisms by which the infection had spread to the pleural cavity. Firstly, the dental infection caused mediastinitis, which eventually spread to the pleural cavity causing effusion. Descending necrotizing mediastinitis and empyema constitute one of the most devastating complications of dental infections and though rare, they have a high mortality rate. Secondly, the dental infection might have caused septicemia leading to empyema. S. aureus was isolated from pus in our case and S. aureus septicemia has already been implicated as a cause of empyema in one case report. It is possible that
whatever the route, either septicemia or mediastinitis, the symptomatology of either of these was suppressed because the patient was already on immunosuppressants and patient presented with atypical presentation of pleural effusion.

To the best of our knowledge, this is the first case where pleural effusion is seen to produce the radiological presentation of mediastinal widening. Hence, pleural effusion has to be kept as differential diagnosis when evaluating a patient of mediastinal widening.

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