



Anterior Chest Wall Tuberculosis Involving Lungs, Pleura and Lymph Nodes in an Immunocompetent Patient: A Case Report

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Authors' contributions

This work was carried out in collaboration between all authors. Author AKG examined the patient before and after treatment. Authors AKG, PS and NM performed the literature search. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: The chest wall tuberculosis accounts for 1-5% of all cases of musculoskeletal tuberculosis. Here we are presenting a rare case of anterior chest wall tuberculosis in an immunocompetent patient.

Presentation of Case: A 20-year-old male came for routine medical check-up, which was prerequisite for his job. He had no respiratory complaints with no history of fever and weight loss. Local examination revealed a swelling over the right chest in the infraclavicular region.

Discussion: Tubercular anterior chest wall abscess is a rare form of extra pulmonary TB. Simultaneous involvement of lung, pleura and lymph nodes of mediastinum, neck and axilla has rarely been reported in an immunocompetent individual.

Conclusion: Cold abscess of chest wall is not common. Anti-tubercular therapy should be recommended as initial treatment.

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Keywords: Chest wall; immunocompetent patient; tubercular abscess; lymph nodes; pleura.

1. INTRODUCTION

Tuberculosis (TB) is a major global health problem and can be a multisystemic disease [1]. Musculoskeletal tuberculosis accounts for 1-2% of all types of tuberculosis, while tuberculosis of the chest wall constitutes for 1-5% of all cases of musculoskeletal tuberculosis [1,2]. Anterior chest wall tuberculosis with simultaneous involvement of lung, pleura and lymph nodes of mediastinum, neck and axilla has rarely been reported in an immunocompetent individual. Herein, we report a case with such a rare disease with no specific symptoms.

2. PRESENTATION OF CASE

A 20-year-old male came to CMC Hospital, Ludhiana, Punjab, India, for routine medical check-up, which was prerequisite for his job. He had no respiratory and constitutional symptoms. The patient had not taken any anti tubercular treatment in past. On examination, the patient was moderately built and nourished with weight of 55 kg, height of 167 cm and had normal vitals. He had right supra clavicular lymphadenopathy, with a node, which was single, non-tender, mobile, firm in consistency and measuring 2×2 cm.

Local examination revealed a swelling over the right side of the chest in the infraclavicular region. The swelling, measuring about 5×5 cm in size, was non tender, soft in consistency with no local rise of temperature. The swelling was also fluctuant and irreducible, had no cough impulse and was situated in the subcutaneous plane.

Respiratory system examination did not reveal any abnormality. The examination of other systems showed nothing remarkable. The patient's haemoglobin was 12.0 gm%. His erythrocyte sedimentation rate was 70 mm at the end of first hour. Complete blood cell and platelet counts were within normal limits. The random blood sugar was 95 mg/dl. Liver function and renal function tests were within normal limits. Test for HIV was negative. Tuberculin skin test was positive. Plain chest radiograph showed nodular opacities in the right upper zone (Fig. 1).

Computed tomography (CT) of the thorax showed features suggestive of pulmonary tuberculosis in the bilateral upper lobes (Figs. 2

& 3). The CT also showed a hypodense collection measuring 5.6×4.1 cm along the right side of anterior chest wall, which was seen to course through the intercostal muscles to reach the intrathoracic location with a small intrapleural component, which was suggestive of Cold abscess. Minimal pleural thickening was observed on the right side. Mediastinal lymph nodes were seen in pretracheal, right paratracheal, prevascular and in precarinal location. Enlarged axillary lymph nodes were also observed on the right side. The patient underwent fine needle aspiration cytology (FNAC) and biopsy from the chest wall swelling. Histopathological diagnosis was consistent with granulomatous abscess. The aspirated material showed Acid-Fast Bacilli (Fig. 4). No Acid-Fast Bacilli were observed in all three samples of sputum. Patient was scheduled to receive daily anti-tubercular therapy with four drugs including Isoniazid (300 mg), Rifampicin (450 mg), Ethambutol (800 mg) and Pyrazinamide (1500 mg). Repeated plain radiograph of the chest after 2 months of treatment showed improvement. At the end of two months patient was put on Isoniazid (300 mg) and Rifampicin (450 mg) for next four months. On follow-up, patient responded well to treatment and size of swelling reduced considerably.



Fig. 1. X-ray chest showing nodular opacities in right upper lobe

3. DISCUSSION

Tubercular anterior chest wall abscess is a rare form of extra pulmonary TB. Simultaneous involvement of lung, pleura and lymph nodes has rarely been reported in an immunocompetent individual.

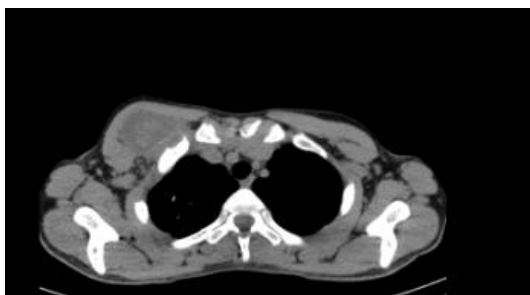


Fig. 2. CT image showing swelling in right anterior chest wall



Fig. 3. CT image showing centrilobular nodules with tree in bud appearance in bilateral upper lobes

Chest wall TB may result from direct inoculation or haematogenous/lymphatic spread or as an extension of underlying pleuropulmonary disease or infection of bony structure. Cold abscesses of chest wall are extra parenchymal collections consisting of caseous material from the necrosed lymph nodes. These can track through the chest wall to form visible swellings on the surface without redness or tenderness [2]. Sternum, costochondral junctions, rib shafts, costovertebral joints and vertebrae can be involved in tuberculous abscesses of the chest wall. Involvement of intrathoracic lymph nodes with relatively lesser involvement of lung parenchyma and pleura can also occur [2]. Computed tomography is necessary for evaluating the extent of abscess and status of ribs, sternum, pleural space and lungs [3-5].

Our patient, a young immunocompetent male had a tuberculous abscess which extended between the pectoral muscles with involvement of lungs, pleura and lymph nodes. He showed no specific symptoms. Our results are in accordance

with the results of Keum et al. [3] who had reported that most patients of chest wall tuberculosis don't complain of specific symptoms. Fine needle aspiration cytology from the abscess showed smears positive for acid-fast bacilli. Our patient had sputum negative for acid-fast bacilli and tubercular lymphadenitis of neck and mediastinum. Papavramidis et al. [6] have reported a case of anterior chest wall tuberculous abscess with involvement of costal cartilage and TB of chest wall without pulmonary involvement had also been reported [7]. Cold abscess of the chest wall is a rare disease. There are not many literature reports on the treatment of the disease. Therefore, an optimal treatment strategy is controversial. Though anti tubercular therapy (extended course) is the cornerstone of the treatment of tuberculous abscess of the chest wall [1,8].

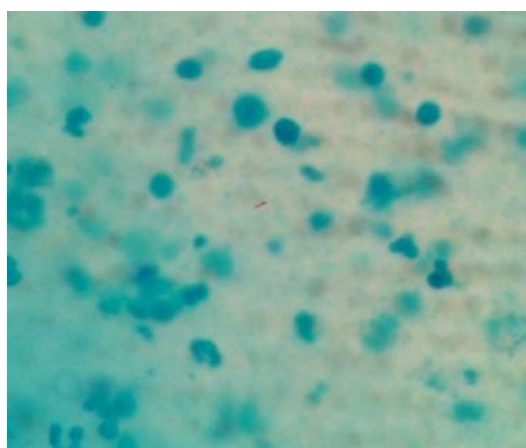


Fig. 4. Fine needle aspiration cytology (FNAC) of the chest wall swelling showing acid-fast bacilli

4. CONCLUSION

The occurrence of cold abscess of the chest wall with involvement of lungs, pleura and lymph nodes has rarely been described in an immunocompetent individual. The rarity of our case lies in the fact that the patient was immunocompetent with cold abscess with no respiratory and constitutional symptoms. Tubercular anterior chest wall abscess is a rare form of extra pulmonary TB. Computed tomography is necessary for assessing tuberculous chest wall lesions. Anti-tubercular therapy is the cornerstone of the treatment of tuberculous abscess of the chest wall.

CONSENT

All the authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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