

AN UNCOMMON PRESENTATION OF PRIMARY TUBERCULOSIS AS GIANT SWELLING ORIGINATING FROM RIGHT POSTERIOR LATERAL CHEST WALL IN ASYMPTOMATIC PATIENT - A DIAGNOSTIC CHALLENGE

Surgery

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ABSTRACT

Despite significant advancements in diagnosing pulmonary TB, diagnosing extrapulmonary TB (EPTB) remains a clinical challenge. Cold abscesses, an infrequent manifestation of EPTB, often lurk in deceptive locations such as the chest wall and spine. This report details the case of a 25-year-old female with a primary tubercular abscess in the in right sided post lateral chest wall, extending post laterally over chest wall, emphasizing the importance of surgical intervention coupled with anti-tubercular therapy to mitigate local complications and prevent recurrence

KEYWORDS

Primary cold abscess, Tuberculosis, Chest Wall

INTRODUCTION

Tuberculosis (TB) remains a formidable public health concern in developing nations, despite considerable efforts (1). Mycobacterium tuberculosis (MTB), the causative agent, primarily targets the lungs, causing pulmonary TB (PTB). However, there has been a noticeable rise in extrapulmonary TB (EPTB) cases, accounting for 15–30% of all TB cases (2) and lymphadenitis occurs in 17-43% of total TB cases, with cervical nodes being the most commonly affected, followed by axillary nodes (3,4). Diagnosing EPTB poses challenges due to diverse and often ambiguous clinical symptoms and imaging characteristics (5). Cold abscesses, although atypical, are observed, particularly in the chest wall and spine (8-10). While it's commonly recognized that tubercular cold abscesses can develop due to adjacent bone involvement or lymph node suppuration, occurrences of primary cold abscesses are notably infrequent. Here, we present a case of primary tubercular abscess in the axilla & extending into post lateral chest wall.

CASE REPORT:

A 25-year-old female presented at the outpatient clinic with a three-year history of a swelling in right sided posterior-lateral chest wall extending up to axillary region. The swelling, gradually increasing in size, was painless, accompanied by occasional low-grade fever. However, there were no respiratory symptoms, anorexia, or night sweats. Upon examination, a healthy female presented with a distinct right sided upper posterior-lateral chest wall swelling measuring 15 x 12 cm, characterized by a non-tender, soft to firm consistency with fluctuations in lower region, smooth surface with mobility and no inflammatory features present (figure-1). A scar mark corresponding to a previous accidental burn was noted over the swelling. The contralateral axilla appeared unremarkable, with normal findings observed in the breasts, upper limbs, and other anatomical regions. Abdominal examination revealed no abnormalities. Full blood count revealed haemoglobin of 9.6 g/dl, white cell counts of 9000 /cumm, neutrophil 58%, lymphocytes 34%, eosinophil 4%, monocyte 4%. The erythrocyte rate (ESR) was 24 mm/hour, Montox test and sputum examination were negative for tuberculosis. human immunodeficiency virus I & II screening was negative. Chest X-ray showed clear lung fields and USG showed hypoechoic lesion. MRI local part done suggestive of large thin wall cystic lesion with hypoechoic tissue superiorly, seen along the right lateral chest wall involving subcutaneous and adherent to medial fibres of latissimus dorsi & serratus anterior. The lesion appeared hyperintense on T2-weighted images and hypointense on T1-weighted images, with no evident communication with lung parenchyma suggestive of hydatid cyst or neoplastic lesion originating from chest wall (Figure-2).

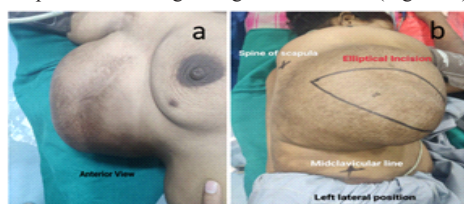


Figure 1: (a) Anterior view and (b) lateral view of Swelling in the right axilla extending post laterally over chest wall of the patient without signs of inflammation.

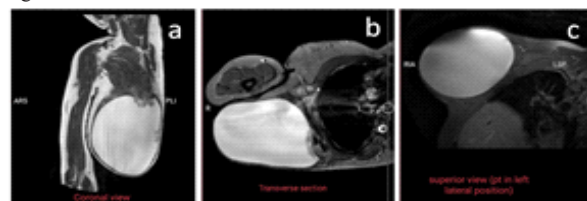


Image 2: (a) Coronal view, (b) Transverse view, (c) Superior view of MRI right axilla showing of large thin wall cystic lesion involving subcutaneous and intermuscular plane region and appears hyperintense on T2-weighted images.

Based on radiological and clinical correlation possibility of cold abscess or neoplastic lesion arising from chest wall, excision under general anaesthesia planned. The patient underwent surgical treatment involving exploration of mass with drainage of 2500cc fluid from cyst, subtotal excision of the cyst wall, marsupialization and Caseous necrotic material removed with scooping (figure-3). Primary closure was performed, with the insertion of a negative drain. Samples of pus and cyst wall were sent for CBNAAT and histopathological examination, respectively. The CBNAAT results indicated tuberculosis, while the histopathological report suggested chronic granulomatous inflammation (figure-4). The drain was removed on the fifth day post-surgery, and the patient was discharged on the sixth day with a prescription for anti-tubercular medication. The patient responded well to anti-tuberculosis chemotherapy, showing positive therapeutic outcomes.

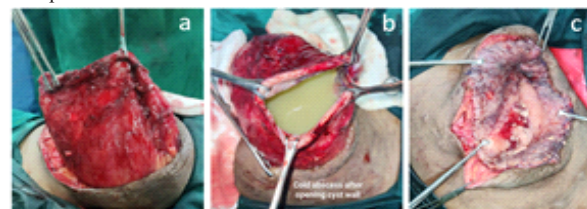


Image 3: Intra Operative images of (a) cyst, (b) Thickened cyst wall opened with pus present inside and (c) cyst wall adherent part with serratus anterior left and subtotal excision of cyst wall done with marsupialisation.

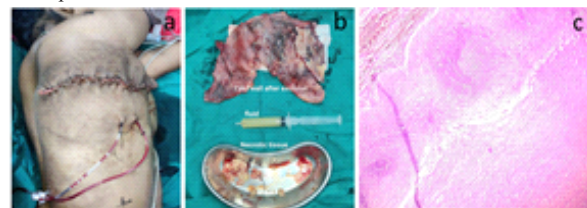


Image 4: post operative image of (a) patient with suture wound in right posterior lateral chest wall with negative drain kept in dependent position, (b) cyst wall and Caseous material was sent for histopathological examination and fluid for CBNNAT. (c) histopathology showing chronic granulomatous inflammation.

DISCUSSION:

Tuberculosis affecting the chest wall is classified as an extrapulmonary manifestation, constituting approximately 1%–5% of all cases of musculoskeletal tuberculosis (12-15). Typically, clinical presentation involves painless cystic masses devoid of skin inflammatory signs, often resembling a cold abscess or a solid tissue mass, occasionally exhibiting mobility. Predominantly, tuberculosis of the chest wall targets the ribs, although occurrences in the sternum, clavicle, and vertebrae are documented (8). In rare instances, intercostal spaces may be affected without concurrent bone involvement during cold subcutaneous abscess formation. Three distinct mechanisms have been elucidated to expound upon the pathogenesis of chest wall tuberculosis: a) Contiguous extension stemming from pulmonary or pleural involvement, b) Hematogenous dissemination, c) Direct transcutaneous inoculation or extension originating from adenitis of the chest wall^(8,12,13).

Diagnostic challenges arise, especially in regions with high TB prevalence, necessitating a high index of suspicion based on clinical signs and imaging findings. X-rays of the thorax may initially appear normal⁽¹²⁾ or exhibit findings such as pleural effusion, pleural thickening, or parietal opacity⁽¹²⁻¹⁴⁾. Ultrasonography proves valuable in delineating the echogenicity of parietal tumefaction observed during clinical examination⁽¹²⁾. Thoracic CT or MRI serves as essential modalities for exploring tuberculous lesions within the chest wall, enabling detailed assessment of their nature and extent. These imaging techniques can also identify features such as bone lysis, intrathoracic lymphadenopathy, or pleuropulmonary lesions. However, there is a potential for misdiagnosis, particularly when differentiating tuberculosis from tumour origins. While imaging plays a pivotal role, it may not always suffice in establishing a differential diagnosis with chest wall tumours.

The treatment approach for cold abscesses remains contentious due to the rarity of the condition. Some authors advocate for a comprehensive medical regimen lasting 9 to 12 months as a standalone cure (9,16,17). However, these assertions are supported by limited series with a small patient cohort and a notable recurrence rate. In the majority of cases, a combined approach involving surgery and anti-tuberculosis therapy is preferred to mitigate the risk of recurrence (9,10,17). Surgical intervention typically entails obliterating the residual cavity following abscess flattening and excising all infected tissues, including affected ribs or cartilage segments (9,16,17). This strategy aims to minimize complications and reduce the likelihood of postoperative relapses. The prognosis for chest wall tuberculosis is generally favourable, contingent upon timely diagnosis and prompt initiation of treatment (9,10,18). The average duration of treatment typically spans 6 months, although it may extend from 9 to 12 months based on various factors such as clinical presentation, bacillary load, and treatment response. Systematic clinical, biological, and radiological surveillance is imperative for monitoring disease progression, evaluating treatment efficacy, and detecting potential complications.

CONCLUSION:

Primary tubercular cold abscess, though rare, should be considered in the differential diagnosis of chest Wall swelling. Distinguishing tuberculous cold abscesses from chest wall tumours can be arduous in the absence of suggestive pulmonary or extrapulmonary lesions. A multidrug regimen coupled with surgical excision remains the cornerstone of management, offering favourable outcomes and reducing the risk of complications and relapse.

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