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Case Report

A Rare Presentation - Case Report on Tubercular Cold Abscess

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Abstract

Tuberculosis is a chronic granulomatous infection that is quite common and a threat to many developing countries. However, extrapulmonary cases involving tubercular skin and soft tissue abscess formation are rare, accounting for 1 or 2% of cases of Mycobacterium TB infections with skin and soft tissue involvement. The typical extrapulmonary tuberculosis symptoms and indications are nonspecific, making diagnosis difficult and time-consuming. We present a case of right arm tubercular cold abscess in a child related to mycobacterium tuberculosis, which was diagnosed by Ziehl- Neelson stain FNAC (Fine needle Aspiration cytology) and Mantoux test (18mm) induration. Due to its rare manifestation, it often gets misdiagnosed or overlooked. A proper diagnosis will ensure a proper treatment plan. Our case further depicts the collaborative effort of healthcare professionals. The patient came back complaining about the increased swelling in his right arm.

Keywords: Tubercular Cold Abscess, Ziehl- Neelson, Fine needle Aspiration cytology, Mantoux test, Mycobacterium Tuberculosis

INTRODUCTION:

Tuberculosis is a global health concern, particularly in developing countries. [1] Tuberculosis can be classified into two classes: pulmonary tuberculosis and extrapulmonary tuberculosis. [2] Although tuberculosis is commonly believed to be a lung disease, it can travel to almost any organ of the body by lymphohematogenous mechanisms. Currently representing 18.5% of all cases, extrapulmonary tuberculosis has only accounted for 8% of cases in 20 years. The nonspecific symptoms and signs of extrapulmonary tuberculosis make diagnosis challenging and time-consuming. [3] Mycobacterium tuberculosis infections rarely affect the skin or soft tissues. However, in areas where tuberculosis is endemic, identifying Mycobacterium tuberculosis is always an essential part of the differential diagnosis for the association of the skin and soft tissues. Such uncommon signs are frequently misdiagnosed, which might cause therapy to be delayed. In cases of malnourishment or immunosuppression, which can flare up when the disease reactivates. [4] A tubercular abscess is an unusual type of tuberculosis that can occur in various parts of the body. [5] The involvement of the adjacent bone or suppuration of lymph nodes in a tubercular cold abscess is an adequately known phenomenon. However, a primary cold abscess is a rare entity. [6] This case report aims to present a unique case of tubercular cold abscess in a child, highlighting the diagnostic challenges faced and emphasizing the importance of early recognition and appropriate management.

CASE REPORT:

A one-year-old male patient was diagnosed with a tubercular abscess in his right arm. Before 15–20 days, he developed swelling and a lump in his right arm that was stiff and immobilizing, measuring 4*3 cm and circular. He had a fever prior to the swelling. He had a history of tuberculosis contact with his parents and has been taking anti-tuberculosis treatment (3C+ 3E) for the past year. The USG report of the local portion of the right arm showed right arm oedema and the intramuscular thick collection as reported (impression has been depicted in figure no:1), and histological correlation was advised to rule out the possibility of a cold abscess, with a Mantoux test of 18 mm in diameter coming back positive. The FNAC (Fine Needle Aspiration Cytology) examination result for the right shoulder revealed a tubercular abscess with a positive Ziehl-Neelsen stain. The haematological study revealed a reduced Hb level of 8.1 (normal range: 14–17 g/dL). TLC was raised to 13.5 cumn (normal range: 4000–11000 cumm). Neutrophils were reduced to 37.7% (normal range: 40–80%). Lymphocytes have risen to 48.8% (normal range: 20–45%). TRBC was 5.32/L (normal range: 4.7–6.1*1012/L). Platelets were reduced to 121 thousand /cumm normal range (150-500 thousand/cumm). The MCV was lowered to 50.7fL (83–101 fL). MCH was low, at 15.2pg (27–32 pg). MCHC was lowered to 30g/dL (31–37 g/dL). PCV was decreased to 27% (38–45%). ESR was increased to 10 ((0-8 1st hour mm). PCT was lowered to 0.009% (0.015–0.50%). RDW-CV increased to 18.5% (12–18%), whereas RDW-SD decreased to 26.1 fL (37–56 fL). The LFT showed a rise in direct bilirubin, SGOT, and SGPT while decreasing in indirect bilirubin. The RFT demonstrated a decrease in creatinine and salt levels, while the iron level declined to 11 ug/dl (59–158 ug/dl), while the TIBC (Total Iron Blood capacity) level was high at 457.67 ug/dl (250–450

ug/dl). The APTT test time was reduced by 28.30 (30–40 seconds). Additionally, the patient also had a complaint of delayed linguistic development. The following medications were administered during his hospitalization: SYP. CALCIUM 5 ml, VITAMIN. -D3 DROPS 1 ml, SYP.AUGMENTIN 5 ml, TAB. ATT 3C+3E (HRZE), TAB. B6 BENADON 10 mg, SYP. LACTULOSE 5 ml, and SYP. AMBROXYL 5 ml. The patient's symptoms were seen to be improving, and a discharge was planned with the following medications: SYP.CALCIUM 5 ml, VITAMIN. -D3 DROPS 1 ml, TAB. ATT 3C+3E, TAB. B6 BENADON 10 mg. After four months, the patient came back with a complaint of an increase in swelling in his right arm, which is shown in the image below Fig: -2. The patient's X-ray is also done on follow-up which shows that the evidence of soft tissue swelling at mid part of the right arm.

Figure 1: -Intramuscular thick collection in right arm.

Figure 2: - Tubercular abscess right Arm swelling -Intramuscular

Figure 3: Soft tissue swelling in the right arm.

DISCUSSION:

Tuberculosis remains a major health challenge globally, with a notably high impact in Southeast Asia.[7] India alone accounts for roughly a third of the estimated 30 million cases, with the majority being pulmonary tuberculosis; around 54% of the cases are of pulmonary tuberculosis, 34% are present with extrapulmonary tuberculosis, and 12% have both pulmonary and extrapulmonary manifestations.[6]

Rasolinejad. et al. stated that cutaneous manifestations of Mycobacterium tuberculosis are rarely manifested, especially in endemic locations. Due to its rare occurrence, it is essential to understand the disease and its involvement correctly; [1] Furthermore, Kumar. et al. emphasize that tuberculosis associated with soft tissues is not rare, and several cases like tubercular synovitis, tubercular bursitis, and tubercular spondylitis secondary to accent bone involvement have been reported. Additionally, both studies provide insight into how cutaneous manifestations of tuberculosis occur. Contiguous transmission of bone, joint, and synovial infection results in mycobacterium inoculation from the skin. Cutaneous tuberculosis without bone involvement is rare in occasional instances caused by the hematogenous pathway.[6]

Seldom, occurring types of cutaneous tuberculosis and cold abscesses can occur in one or more locations, with or without a fistula. Patients with impaired immune systems typically have multilobulated abscesses [1].

In a study by Abbdelwahab IF et al., there have been isolated cases of primary soft tissue TB presenting as a gluteal abscess, and it was hypothesized that the infection may be spread by nursing staff members who are infected either by coughing over the injection site or by reusing needles. [8] According to a study by Lee Yeon Ji et al., individuals with extrapulmonary tuberculosis may not exhibit the typical symptoms and physical characteristics of pulmonary disease, and pulmonary tuberculosis may not even be considered in the initial differential diagnosis. [9]

Tuberculosis Abscesses are often misdiagnosed as tumours. In the case of considering a differential diagnosis of cold abscess, especially in immunosuppressive patients, tuberculosis should be taken into account[1]. Henceforth, a proper diagnosis is necessary for such patients. The hallmark of diagnosis is the presence of caseating granulomatous lesions in the biopsy or the presence of AFB. In some cases, a histopathology examination may reveal the presence of acid-fast mycobacterium in the pus that has been aspirated, or a culture of the scrapings from the abscess wall may be necessary. A recent method that has been considered for detecting Mycobacterium tuberculosis's DNA is PCR on drained materials. This method has the added benefit of differentiating between M. tuberculosis and nontuberculous mycobacterium. [9]

In our case, the origin of the tuberculous abscess was microbiologically confirmed by a Mantoux test, which found the induration to be 18 mm. Along with this, fine-needle aspiration cytology was also performed, confirming a tubercular abscess. Furthermore, an ultrasonography showed a thick intramuscular collection, possibly depicting a cold abscess. Additionally, the patients' ESR was markedly elevated.

This report presented a tuberculous abscess in the right arm and a cold abscess in a 1-year-old child. Drainage (without CT guidance) and the standard anti-tuberculosis regimen will be adequate for this patient. [1.]

CONCLUSION:

Immunocompetent newborns rarely have tuberculous abscesses; therefore, difficulties arise in accurately diagnosing the condition when other possible diagnoses are overlooked. AFB microscopy, L-J culture, BACTEC culture, or PCR test results demonstrating M tuberculosis should support it, even though it is uncommon [6.] This case further signifies that the cooperative efforts of healthcare professionals have improved patients' health. A proper follow-up was also scheduled to monitor the patient's health. Further, when a patient came for follow-up, it was found that the swelling in his right arm had increased, and surgery was planned for the physician.

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