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Original Research Article

Chronic Recurrent Abscesses in a Child: Unmasking Scrofuloderma as a Form of Cutaneous Tuberculosis

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Abstract

Cutaneous tuberculosis, a rare extrapulmonary manifestation, constitutes a minor fraction of the overall TB disease burden, with scrofuloderma being the most common variant in paediatric populations. We present the case of a 7-year-old girl with a two-year history of recurrent abscesses on her chest and back that had recently enlarged. Previous incomplete treatment provided only temporary improvement. Clinical examination revealed classic signs of scrofuloderma, including multiple undermined ulcers with seropurulent discharge, sinuses, and puckered scars, accompanied by bilateral cervical lymphadenopathy in an otherwise systemically well child. Diagnostic workup revealed microcytic anaemia, an elevated erythrocyte sedimentation rate, and a strongly positive Mantoux test. Histopathological examination of a skin biopsy showed chronic inflammatory infiltrates with multinucleated giant cells, confirming the diagnosis. The patient was started on a standard four-drug anti-tubercular therapy regimen. This case underscores the characteristic clinical presentation of scrofuloderma in a child and highlights the critical importance of a high index of suspicion and the necessity of a complete, supervised course of ATT to achieve cure and prevent relapse, even in the absence of pulmonary involvement.

Keywords: scrofuloderma, Tuberculosis, Lymphadenopathy, Recurrent Abscesses.

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Introduction

Tuberculosis (TB), an infectious disease caused by *Mycobacterium tuberculosis*, continues to be a major global public health issue. While pulmonary TB is the most recognized form, the bacterium can infect nearly any organ, leading to diverse clinical entities [1]. Cutaneous tuberculosis is one such extrapulmonary presentation, with scrofuloderma (tuberculosis cutis colliquativa) being a distinct subtype.

Scrofuloderma, a form of cutaneous tuberculosis, results from infection by *Mycobacterium tuberculosis*, *M. bovis*, or, rarely, the Bacille Calmette-Guérin (BCG) vaccine strain. It is a common presentation of cutaneous TB in children and young adults [2]. The pathogenesis typically involves the direct extension of the organism from an underlying infected focus, such as lymph nodes, bone, or joints, to the skin, though hematogenous spread or exogenous inoculation can also occur.

This article focuses on scrofuloderma, a rare manifestation that constitutes only a minor fraction of the overall TB disease burden. This is underscored by global data from 2021, which reported 10.6 million new cases and 1.6 million deaths, figures within which scrofuloderma represents a small subset [3].

Case Presentation

A 7-year-old girl presented with a two-year history of multiple recurrent abscesses on her chest and back (refer to figure 1). The lesions had shown a significant increase in size over the 15 days preceding her presentation. She had a history of prior treatment from a local practitioner for six months, which led to some initial improvement; however, the symptoms recurred promptly upon the cessation of medication. The patient's review of systems was negative for respiratory, urinary, or gastrointestinal symptoms.

On general examination, the patient was afebrile and exhibited mild pallor. Multiple bilateral cervical lymph nodes were palpable. Her vital signs were stable. Local examination of the skin revealed multiple undermined ulcers with blackish discoloration and seropurulent discharge, accompanied by sinuses and puckered scars distributed over the chest and back. Examinations of the respiratory, cardiovascular, and abdominal

systems were within normal limits.

Investigations

Initial laboratory investigations revealed a hemoglobin of 8.3 g/dL indicative of anemia and an elevated erythrocyte sedimentation rate (ESR) of 65 mm/hr. The total and differential leukocyte counts were within normal limits. A peripheral smear showed a normocytic normochromic picture. The Mantoux test was strongly positive, with an induration of 30 mm at 72 hours. Serologic testing for HIV was negative, and a chest X-ray was unremarkable. Sputum for acid- fast bacilli (AFB) was also negative. Histopathological examination of a skin biopsy specimen revealed chronic inflammatory infiltrates composed predominantly of lymphocytes with few polymorphs and the presence of multinucleated giant cells. Notably, there were no areas of congestion, edema, hemorrhage, or necrosis.

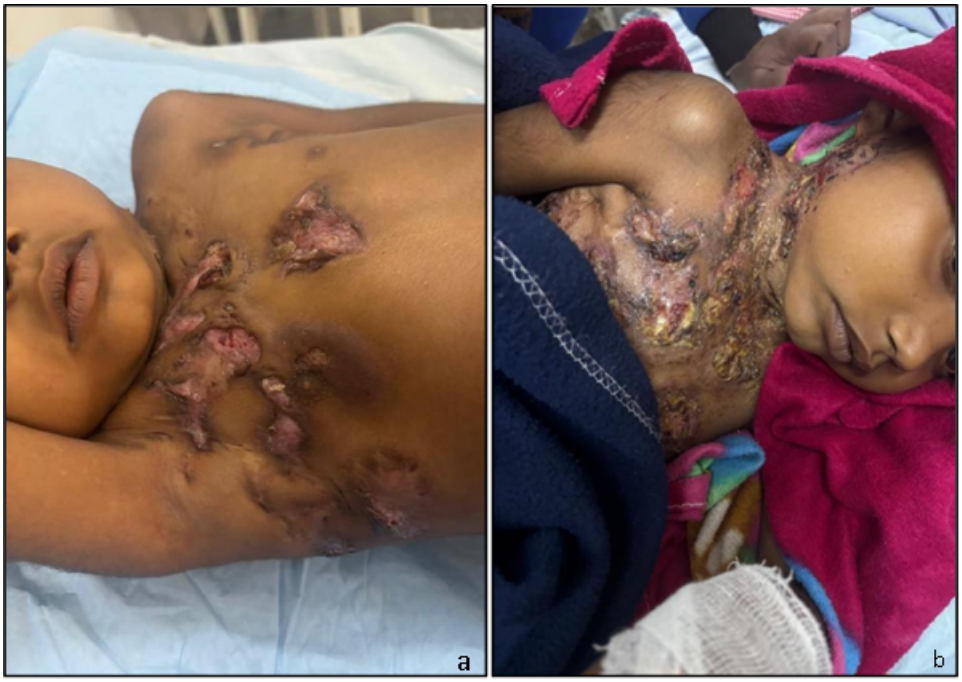

Figure 1: Cutaneous tuberculosis (scrofuloderma)

Clinical photograph showing multiple undermined ulcers with seropurulent discharge, sinus tracts, and puckered scars over the chest and back, consistent with scrofuloderma in a pediatric patient.

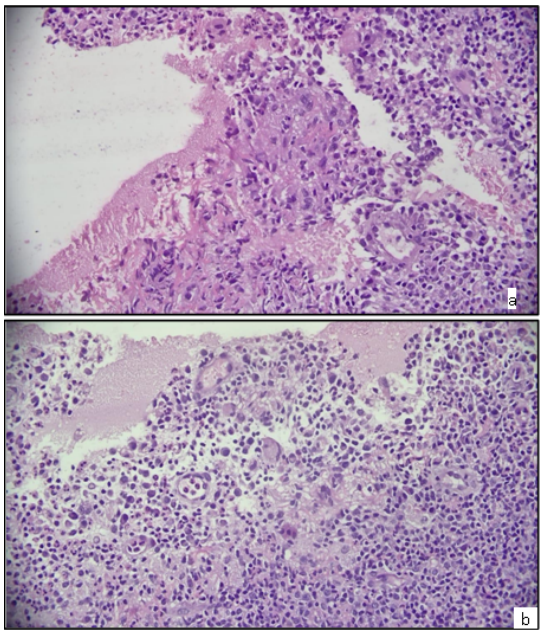

Figure 2: Histopathological findings in cutaneous tuberculosis

Skin biopsy demonstrating chronic granulomatous inflammatory infiltrate composed predominantly of lymphocytes with multinucleated giant cells, consistent with cutaneous tuberculosis (hematoxylin and eosin stain).

Diagnosis and Management: Based on the classic clinical presentation of sinuses, ulcers, and scars, the strongly positive Mantoux test, and the supportive histopathological findings (refer to figure 2), a definitive diagnosis of extra-pulmonary tuberculosis—specifically, cutaneous scrofuloderma was established. The patient was initiated on a daily anti-tubercular therapy (ATT) regimen under the Revised National Tuberculosis Control Program (RNTCP), consisting of Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol.

Discussion

Tuberculosis remains a significant public health challenge in India. While pulmonary manifestations dominate the epidemiological landscape, cutaneous tuberculosis represents a rare entity, accounting for merely 0.1-0.9% of patients presenting to dermatology clinics [4]. This form demonstrates a predilection for adolescents, with the 10-14 year age group being most frequently affected. Consistent with existing literature, which identifies scrofuloderma as the most prevalent variant in pediatric populations accounting for up to 47% of cutaneous tuberculosis cases in children our patient represents a classic presentation of this condition [4]. Scrofuloderma pathogenesis typically involves contiguous spread from an underlying tuberculous focus to the subcutaneous tissue and overlying skin, commonly originating from lymph nodes, bone, or joints [4]. The cervical, axillary, and inguinal regions represent the most frequent sites of involvement [5]. The characteristic clinical progression begins with subcutaneous nodules that progressively enlarge, coalesce, undergo suppuration, and ultimately form ulcerated plaques with draining sinus tracts that discharge caseous material [4]. The clinical presentation in our case featuring multiple discharging abscesses and lesions with undermined edges on the upper chest and back aligns precisely with this established progression. While scrofuloderma can occasionally signal disseminated disease [6], our patient exhibited no radiological or clinical evidence of systemic involvement. The diagnostic approach to scrofuloderma requires a multifaceted strategy incorporating clinical history, histopathological examination, and supportive investigations [4]. In our case, diagnosis was supported through a combination of a strongly positive Mantoux test and histopathological findings consistent with cutaneous tuberculosis, although acid-fast bacilli were not visualized on special staining. Molecular methods such as PCR can provide valuable diagnostic support in such culture- negative cases [8]. Mycobacterial culture remains the gold standard for definitive diagnosis and drug susceptibility testing, though it was not utilized in this instance [4].

Current management follows WHO guidelines for extrapulmonary tuberculosis, utilizing multi-drug regimens [4]. Our patient was initiated on the intensive phase of anti-tubercular therapy with four drugs (Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol) for eight weeks, followed by a continuation phase with three drugs (Isoniazid, Rifampicin, and Ethambutol) for sixteen weeks. Regular monitoring of hepatic enzymes and hematological parameters was implemented throughout treatment. Surgical intervention may occasionally be warranted in cases with extensive tissue involvement or poor response to medical therapy alone [1], though it was not required in this case.

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Author Contribution: Conceptualization, SP and JT; methodology, MK and SP**;** formal analysis**,** MK and SP; investigation, JT; resources, SP and MK; data curation, JT; writing—original draft preparation, SP; writing—review and editing, JT and MK; visualization, JT; supervision, SP and JT; project administration, SP.

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