

Case Report

Delayed diagnosis of cutaneous tuberculosis in a child with chronic skin lesions: a case report

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ABSTRACT

Cutaneous tuberculosis (CTB) is an uncommon form of extrapulmonary tuberculosis in children and often pose a diagnostic challenge due to its varied clinical presentation. We report the case of a 7-year-old boy with chronic skin lesions for three years who received multiple empirical treatments without improvement. Examination of the skin lesion revealed erythematous to violaceous plaques with lichenification, scaling and excoriated areas. The margins are relatively well defined with smaller satellite papules. Skin biopsy showed epithelioid granulomas with Langhans giant cells and caseation consistent with CTB. He completed a 6-month course of anti-tubercular therapy (ATT) and the skin lesion healed with an unsightly scar. This case highlights the need to consider biopsy in chronic non-healing lesions to prevent long term cosmetic complications.

Keywords: Cutaneous tuberculosis, Lupus vulgaris, Skin biopsy, Complications

INTRODUCTION

Tuberculosis is a communicable disease caused by *Mycobacteria*, the most common being *M. tuberculosis*. Global attempts to eradicate the disease has yield good results. However, it continues to be a leading source of illness and mortality with the majority of cases coming from low- and middle-income countries.¹ CTB accounts for <2% of extrapulmonary TB and can mimic other dermatologic diseases, leading to delayed diagnosis.²⁻⁴ *M. tuberculosis*, *M. Bovis* and BCG vaccine are the causes of cutaneous TB.⁵ Lupus vulgaris is the most common form of CTB.^{6,7} Cutaneous TB can be acquired by exogenous, hematogenous or local spread. Tissue diagnosis using histopathology, supported by microbiological or molecular methods wherever feasible, is essential for confirmation of CTB due to its varied clinical presentation and overlap with other dermatoses.⁸ The

empirical application of steroids changes the morphology and need for biopsy sample often delays the diagnosis and treatment. We present a case of CTB in an immunocompetent boy with delayed diagnosis.

CASE REPORT

A 7-year-old boy presented with chronic skin lesions present since age 4 years of age. Initially had small lesions on the left wrist which gradually increased in size from a coin size to involving half the circumference of his wrist. The first lesion as seen from the old photographs brought the parents to our OPD can be described as coalescing hyperpigmented papules and plaques with areas of lichenification. The margin is relatively well defined but irregular with smaller satellite papules at the periphery. Similar skin lesions appeared on the neck which gradually spread to the chest. There was

history of multiple courses of topical steroids and topical antibiotics which were prescribed over a span of 2 year ranging from antibacterial, anti-fungal and combination creams containing both antimicrobial and anti-fungal. The third year, the child was on ayurvedic medicines when he was finally brought to us. No other systemic symptoms were noted. The child received birth dose of BCG vaccine. No known exposure to TB patients. Examination revealed erythematous to violaceous plaques with crusted erosions and excoriated areas. There is lichenified skin in several patches suggesting chronicity. The skin lesion led us to consider lupus vulgaris as a possible diagnosis. Systemic examination was normal. Dermatology opinion was taken and also advised for skin biopsy to confirm the diagnosis.

Management and outcome

Investigations

Routine blood investigations revealed Hb: 11.8gm/dL, TLC: 6800 ($N_{58}L_{35}M_2E_5$), Platelet 3.2×10^3 , CRP: 3.2mg/dL, ESR: 30 mmAEFH, HIV 1/2: Non-reactive. Chest X-ray was normal. Mantoux test was 13 mm. Skin biopsy was done from the lesion in the upper chest area. The skin biopsy showed epithelioid granulomas with Langhans giant cells and caseation consistent with CTB. ZN stain was negative. The child was started on first line ATT for 6 months, following national tuberculosis elimination programme (NTEP) guidelines.^{9,10} The child showed progressive improvement of skin lesions which healed with scar by the end of therapy and remained asymptomatic on 1 year follow-up.

DISCUSSION

Cutaneous TB is rare in children but must be considered in chronic, unresponsive skin lesions. Variants such as lupus vulgaris, TB verrucosa cutis, and scrofuloderma may present with long-standing plaques or nodules.^{3,4} Diagnosis is often delayed due to misdiagnosis as fungal or bacterial infections, prolonged topical steroid use and lack of skin biopsy.^{5,11} Biopsy with histopathology and microbiological confirmation remains the gold standard.^{4,8} Despite the lack of microbiological confirmation, classical clinical and histological features were sufficient to start ATT. Delayed-type hypersensitivity response to mycobacterium agents is seen in immunocompetent children with cutaneous TB. This results in paucibacillary lesion that form chronic lesions that are AFB negative. Early diagnosis and treatment are critical to avoid complications.¹² ATT is highly effective, with excellent outcomes when diagnosed early.¹³ In this case delay in diagnosis and treatment resulted in scarring and disfigurement of the child. When usual treatment fails, it is important to suspect CTB in areas with high disease burden.

CONCLUSION

Cutaneous TB should be part of the differential diagnosis for chronic non-healing skin lesions in children. Accurate diagnosis and timely ATT lead to complete recovery whereas late treatment has cosmetic complications.

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