DOI: https://doi.org/10.4038/sljd.v24i1.54

Case report

Story behind chronic cutaneous ulcers: a case of disseminated tuberculosis

H S Viduranga[1], R G S Rassagala[2], S R Constantine[3], I P Kahawita[4]

Sri Lanka Journal of Dermatology, 2024-2025, **24**: 51-53

Abstract

Disseminated tuberculosis is a complex multisystemic disorder that can present in various clinical forms, including non-healing cutaneous ulcers. This case highlights the importance of identifying cutaneous ulceration as a potential manifestation of disseminated tuberculosis, particularly in regions where the disease is endemic. The utilization of skin biopsy for histological assessment, along with the GeneXpert MTB/RIF assay, was crucial in confirming the diagnosis. Recognising these associations can significantly enhance clinical practice and improve patient care.

Key words: disseminated tuberculosis, cutaneous ulceration

Introduction

Disseminated tuberculosis (TB) is defined as the presence of two or more noncontiguous sites resulting from the hematogenous dissemination of *Mycobacterium tuberculosis*, occurring as a result of progressive primary infection or due to reactivation of a latent focus with subsequent spread[1]. Cutaneous TB may be the first sign of disseminated TB[2].

Case report

A 24-year-old male, with a history of recurrent multiple abscesses of the anterior abdominal wall since 2019, was referred to the dermatology unit for evaluation of painless multiple cutaneous ulcers over the lateral chest for 3 months' duration. The ulcers suppurated spontaneously, leading to deep ulcers. He had constitutional symptoms including poor appetite, weight loss, lethargy, and evening pyrexia without chronic cough, dyspnoea, urinary symptoms, or joint pain. However, the patient developed persistent watery diarrhoea during the course of evaluation.

His general examination revealed a BMI of 11.9 kg/m^2 and an enlarged left supraclavicular lymph node. Examination of the lateral chest revealed multiple ulcers with undermined edges with visible intercostal muscles in the floor (Figure 1). There were multiple healed surgical scars over the anterior abdomen, indicating previous sites of surgical drainage. There was a visible and palpable fluctuating mass over the left iliac fossa suggestive of an anterior abdominal wall abscess (Figure 2).

Initial blood investigations revealed anemia (Hb 10g/dl), leukocytosis (25x10^9 cells/mm3), hypoalbuminemia (1.6g/dl) and multiple electrolyte abnormalities including hyponatremia (128 mmol/L), hypokalemia (1.9 mmol/L), hypocalcemia (6.6 mg/dl), hypophosphatemia (1.9 mg/dl) and hypomagnesemia (1.7 mg/dl). ESR was 23 mm/1st hour. The tuberculin skin test and retroviral screening were negative. Ultrasound scan-guided aspiration of the anterior abdominal wall abscess revealed no growth in pyogenic culture. Melioidosis antibodies were negative. The GeneXpert MTB/RIF assay was performed on ulcer edge skin biopsy, aspirated abdominal wall pus, and sputum samples that revealed *Mycobacterium tuberculosis*.

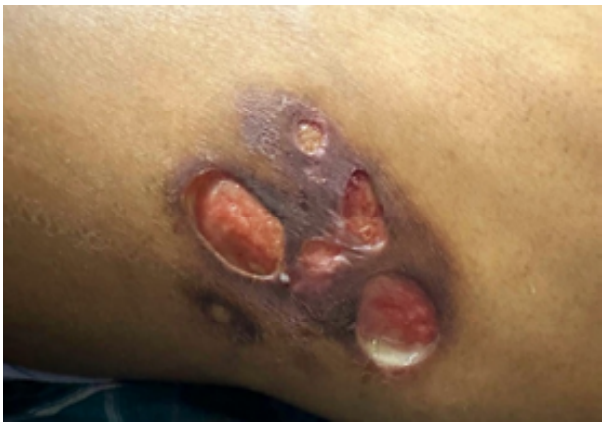

Figure 1.

[1]*Registrar in Dermatology,* [2]*Registrar in Histopathology,* [3]*Consultant Histopathologist,* [4]*Consultant Dermatologist, National Hospital of Sri Lanka, Colombo.*

Correspondence: HSV e-mail: hsviduranga@gmail.com

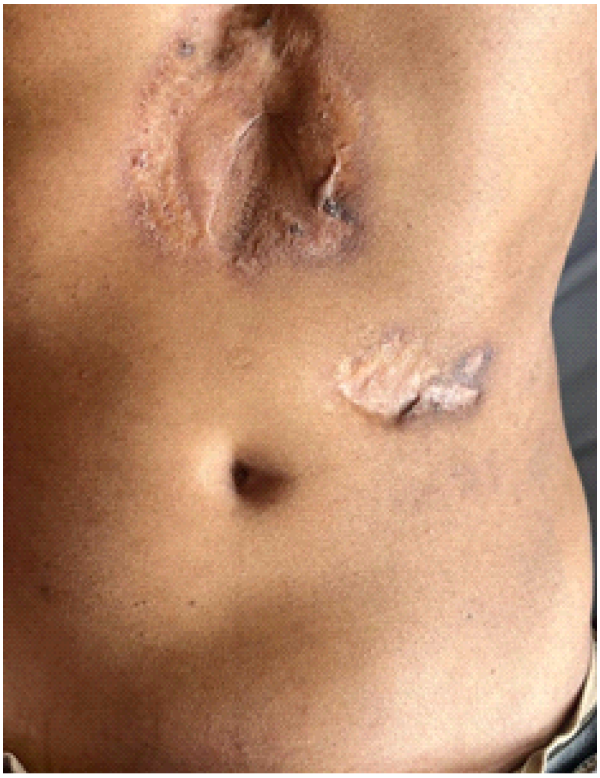

Figure 2.

Ulcer edge skin biopsy showed few vague granulomas and acid-fast bacilli on Ziehl-Neelsen stain. Tissue biopsy from the descending colon revealed a focal collection of epithelioid histiocytes with vague granuloma formation.

Contrast-Enhanced CT of the neck, chest, abdomen, and pelvis revealed radiological evidence of pulmonary TB and multiple widespread intra-peritoneal, retroperitoneal, intramuscular, and subcutaneous collections.

The diagnosis of disseminated TB was made based on the above findings, and the patient was referred to a consultant chest physician and started on category 1 multidrug anti-TB therapy, which included a 2-month intensive phase with isoniazid (H), rifampicin (R), pyrazinamide (Z), and ethambutol (E), & a 4-month continuation phase with H & R. Pigtail catheters were inserted by the interventional radiology team to drain retroperitoneal abscesses. Gradual feeding was introduced while correcting electrolyte abnormalities. Cutaneous ulcers were dressed with normal saline dressing.

At the completion of the 2nd month of anti-TB therapy, all cutaneous ulcers were healed with scar formation and post-inflammatory hyperpigmentation (Figure 3). His appetite, weight gain, and bowel habits were improved. He remains on regular follow-up at the Central Chest Clinic in Colombo under the supervision of a consultant respiratory physician and is compliant with therapy.

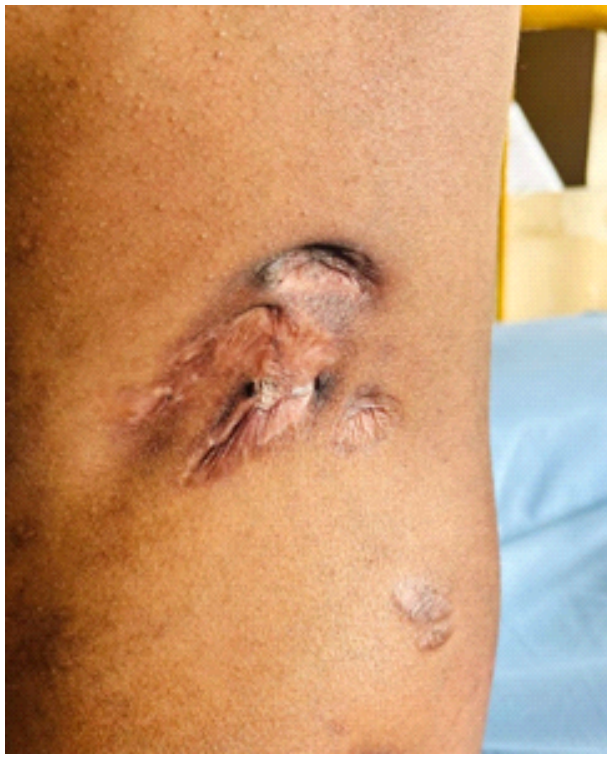

Figure 3.

Discussion

Chronic non-healing ulcers are not rare in dermatology practice. Description of the ulcer, giving special attention to the location and nature of the ulcer edge, is vital to reach clinical differential diagnoses and to plan out subsequent investigations.

In patients with chronic, recurrent, non-healing ulcers in a background of constitutional symptoms, clinicians should consider cutaneous TB, especially in endemic areas[2]. Histopathological and micro-biological studies play a major role in the process of making a complete diagnosis when cutaneous tuberculosis is suspected.

A skin biopsy from the ulcer edge should be taken for histology, Ziehl-Neelsen stain, and GeneXpert MTB/RIF assay when ulceration due to TB is suspected[3]. Histology will reveal a granulomatous reaction with central caseation and cell infiltration with lymphocytes, epithelioid cells, and Langhans' giant

cells. Ziehl-Neelsen stain will reveal acid-fast bacilli[3]. The GeneXpert MTB/RIF is helpful to differentiate *Mycobacterium tuberculosis* (MTB) from non-tuberculous mycobacteria (NTM) as it is specific for the MTB complex and hence will be negative for NTM[4].

A negative tuberculin skin test will not rule out TB, as false negative results can occur in patients with severe malnutrition and severe TB, as in our case[3].

Once cutaneous TB is confirmed, the clinician should always suspect disseminated TB, as it may be the first sign of it. The patient should be investigated for pulmonary TB and extra-pulmonary TB based on the symptoms and signs. Sputum for AFB, sputum for GeneXpert MTB/RIF assay, and chest x-ray are valuable in diagnosing pulmonary TB[3].

Contrast-Enhanced CT abdomen/pelvis and colonoscopy were indicated in our patient due to the background history of recurrent abdominal wall abscesses and altered bowel habits, confirming intra- and extraperitoneal abscesses and gastrointestinal TB. As immunocompromised patients have more propensity for disseminated TB, underlying immuno-deficiency syndromes, including HIV infection, have to be excluded[4].

Once the diagnosis of cutaneous TB or disseminated TB is confirmed, standard therapy with a multi-drug anti-TB regimen should be initiated and continued for the recommended duration.

Conclusion

In patients with chronic, recurrent, and non-healing ulcers, TB should be considered as a differential diagnosis, especially in endemic areas.

Skin biopsy for histology and GeneXpert MTB/RIF assay are valuable in confirming the diagnosis of ulcers due to cutaneous TB.

References

1. Khan FY. Review of literature on disseminated tuberculosis with emphasis on the focused diagnostic workup. *Journal of Family and Community Medicine* 2019; **26**: 83-91.
2. Tekbas G, Abakay, A, Tanrikulu AC, et al. Skin Ulcers: A Sign of Disseminated Tuberculosis. *Respiratory Care* 2011; **56**: 1853-6.
3. National Manual for Tuberculosis Control 2021 Update. Health Information Management Unit, NPTCCD, Colombo 2021; 1-226.
4. Huh HJ, Song DJ, Ki CS, Lee NY. Is Cross-reactivity with Nontuberculous Mycobacteria a Systematic Problem in the Xpert MTB/RIF Assay? *Tuberculosis and Respiratory Diseases* 2018; **82**: 88.