

Single Case

Ulcerative Lupus Vulgaris on the Wrist

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Keywords

Lupus vulgaris · Cutaneous tuberculosis · Internal organ tuberculosis · Case report

Abstract

We report a case of ulcerative lupus vulgaris (LV) in a unique site, which facilitated the detection of internal organ tuberculosis (TB). A 68-year-old Japanese man presented with a reddish ulcerated painless lesion on his right wrist that had initially appeared 4 weeks earlier as a non-tender nodule. There was no recent history of fever, weight loss, or cough. The results of tissue culture, PCR, and contrast-enhanced chest computed tomography were consistent with the diagnosis of ulcerative LV with underlying pulmonary TB and tuberculous lymphadenitis. The patient was started on anti-TB therapy. After 1 month of therapy, epithelialization of the ulcer was noted.

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Published by S. Karger AG, Basel

Introduction

Cutaneous tuberculosis (TB) is a relatively uncommon manifestation of TB and has various clinical findings. Lupus vulgaris (LV) is a common form of cutaneous TB and frequently appears in the lower extremities, buttocks, head, and neck [1]. The clinical forms of LV are classified into 5 different general patterns: plaque, ulcerative, vegetating, tumor-like, and papular-nodular forms [2]. Although the plaque type of LV is common, the ulcerative type is relatively rare [2, 3]. Various clinical forms and uncommon sites of presentation of LV may lead to a delay in diagnosis and, consequently, an increase in morbidity. LV may be a form of cutaneous TB that results from local or hematogenous spread of *Mycobacterium tuberculosis* from endogenous foci of infection; however, the incidence of LV in patients with active organ TB appears to be very low [4]. Herein, we report a case of ulcerative LV on the wrist, which facilitated the detection of internal organ TB.

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Case Report

A 68-year-old Japanese man visited our department with a painless ulcer on the right wrist that had appeared as a nontender nodule 4 weeks prior. It had enlarged, forming a reddish ulcerated lesion. He reported no recent history of cough, fever, or weight loss. His only medical history was diabetes mellitus that was treated with repaglinide and voglibose. Physical examination revealed an ulcer measuring approximately 2 × 2 cm with granulation tissue (Fig. 1). Test findings for human immunodeficiency virus were negative. Differential diagnoses included atypical cutaneous mycobacteriosis, deep dermatomycosis, and pyoderma gangrenosum. Tissue culture grew *M. tuberculosis*, and PCR results for *M. tuberculosis* were positive. Histopathology revealed ulceration and numerous epithelioid granulomas with caseous necrosis containing a few multinucleated giant cells throughout the dermis, accompanied by dense lymphoid infiltrates (Fig. 2). Based on these findings, we performed radiologic searches for potential extracutaneous TB to evaluate the primary infection site. Sputum testing was not performed because there were no respiratory symptoms. Contrast-enhanced chest computed tomography revealed low-density areas and cavitation within a well-defined nodule with a daughter lesion in the right upper lobe and an enlarged lymph node with central low attenuation in the right axilla, strongly suggestive of active pulmonary TB and tuberculous lymphadenitis. The results were consistent with the diagnosis of ulcerative LV with underlying pulmonary TB and tuberculous lymphadenitis. The patient was treated with a four-drug anti-TB therapy (rifampin, isoniazid, ethambutol, and pyrazinamide). One month later, there was a clinically significant resolution with epithelialization of the ulcer.



Fig. 1. Ulcer with granulation tissue located on the right wrist.

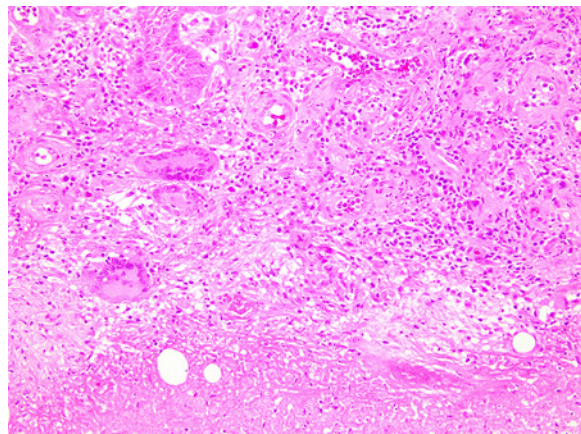


Fig. 2. Histopathological findings. Histopathological examination of the skin ulcer revealing a granulomatous reaction with caseous necrosis, containing epithelioid cells, lymphocytes, and multinucleated giant cells (hematoxylin-eosin stain; original magnification ×100).

Discussion

Cutaneous TB accounts for only 1–2% of all TB cases. LV is a chronic progressive form of cutaneous TB that may occur because of hematogenous or lymphatic spread in individuals sensitized to *M. tuberculosis*. The most frequently affected sites include the head, neck, buttocks, and lower extremities [1]. LV has 5 general clinical forms, with the ulcerative form being relatively rare [2, 3]. In this form of LV, ulcers are the main type of lesion [3]. Although LV is a common variant of cutaneous TB, the presence of less common forms that mimic other skin diseases and occur in uncommon sites, as seen in this patient, makes the diagnosis difficult. Additionally, untreated LV cases may cause malignancies such as squamous cell carcinoma. Hence, a strong clinical suspicion of cutaneous TB is necessary for diagnosis when faced with less common clinical findings, such as those seen in this case.

There may be simultaneous multi-organ involvement in TB patients. Diagnosing one organ disease may lead to a missed diagnosis of another organ's involvement. Although visceral TB is rare with concomitant cutaneous TB, when it develops, it is common in the form of scrofuloderma or LV [4]. The most common active internal TB forms associated with skin TB are pulmonary TB and tuberculous adenitis [5]. In our patient, we found no signs of pulmonary TB or tuberculous adenitis, but consideration of concurrent organ involvement contributed to the identification of pulmonary TB and tuberculous lymphadenitis, leading to appropriate and timely treatment. This case highlights that even when patients with cutaneous TB are not clearly immunocompromised, careful systematic examination should be performed to explore the involvement of other organs.

Acknowledgements

We would like to thank Editage (www.editage.com) for English language editing.

Statement of Ethics

The authors obtained the patient's written informed consent for the publication of this case report and any accompanying images. The paper is exempt from ethical committee approval since a course of systemic, multidrug anti-TB therapy is considered the standard care for cutaneous TB as well as extracutaneous TB infection.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

The authors have no funding sources to disclose.

Author Contributions

Takahiro Mizuta reviewed the patient's case notes and relevant literature and wrote the clinical case. Miyuki Kato was responsible for identifying and managing the case, as well as for reading and suggesting improvements to several drafts. Both authors have read and approved the content of the final report.

References

- 1 Franco-Paredes C, Marcos LA, Henao-Martínez AF, Rodríguez-Morales AJ, Villamil-Gomez WE, Gotuzzo E, et al. Cutaneous mycobacterial infections. *Clin Microbiol Rev*1. 2018 Nov;32(1):e00069–18.
- 2 Pai V, Naveen KN, Athanikar SB, Dinesh US, Divyashree A, Gupta G. A clinico-histopathological study of lupus vulgaris: a 3 year experience at a tertiary care centre. *Indian Dermatol Online J*2. 2014 Oct;5(4):461–5.
- 3 Gunawan H, Achdiat PA, Hindritiani R, Essary ED, Ningtias LD, Siregar EP, et al. Various cutaneous tuberculosis with rare clinical manifestations: a case series. *Int J Mycobacteriol*3. 2018 Jul–Sep;7(3):288–91.
- 4 Kivanç-Altunay I, Baysal Z, Ekmekçi TR, Köslü A. Incidence of cutaneous tuberculosis in patients with organ tuberculosis. *Int J Dermatol*4. 2003 Apr;42(3):197–200.
- 5 Mahmud TAK, Paul HK, Zakaria ASM, Rahman MA, Chowdhury MAJ. Study on association of cutaneous tuberculosis with pulmonary tuberculosis. *Bangladesh Med Res Counc Bull*5. 2010 Aug;36(2):57–60.