Our Dermatology Online

Case Letter

Pyoderma gangrenosum mimicking mycobacterial infection

Yuka Hanami, Kinuko Irie, Takashi Ito, Toshiyuki Yamamoto

Department of Dermatology, Fukushima Medical University, Fukushima, Japan

Corresponding author: Prof. Toshiyuki Yamamoto, MD PhD, E-mail: toyamade@fmu.ac.jp

Sir,

A 79-year-old female was referred to our hospital complaining of painful, elevated nodules and plaques with ulcers on the extremities, which appeared two months previously. Because oral antibiotics were ineffective, she was referred to our hospital. She had not engaged in agricultural work nor kept tropical fish. A physical examination showed a painful, elevated, edematous swelling with partial ulcerations on the right forearm and the dorsum of her left foot (Figs. 1a and 1b). The surface was a reddish granulation, and the ulcer was surrounded with erythema. A laboratory examination showed an increased white blood cell count (5,800/μL, with 82% neutrophils), elevated levels of C-reactive protein (4.29 mg/dL), while β-D-glucan and T-SPOT were normal. We attempted taking a skin biopsy, yet she developed transient loss of consciousness twice due to vagal reflex by local anesthesia. In the meantime, the lesions on the extremities worsened with larger ulcerations, and new ulcers appeared on the buttocks (Fig. 2). A biopsy specimen from the edge of the ulcer showed dense infiltration of neutrophils and mononuclear cells in the lower dermis and subcutaneous tissue (Figs. 3a and 3b). Stain with Grocott and Ziel–Neelsen was negative. Cultures for bacteria, deep fungus, and mycobacterium were sterile in both superficial pus and biopsied tissues. Examination by respiratory medicine excluded either lung tuberculosis or fungal pneumonia. She was initially treated with systemic prednisolone (20 mg/day), which resulted in sufficient effects. However, during prednisolone tapering, ulcers relapsed, and adalimumab was added with successful results.

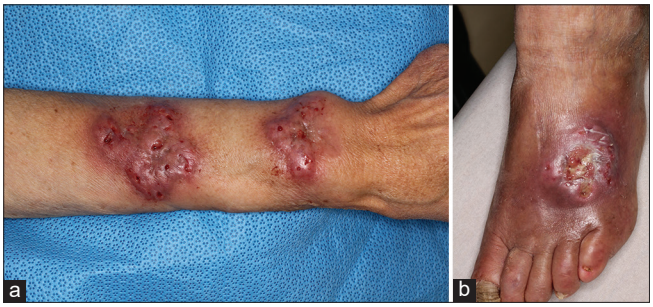

Figure 1: (a) Elevated, reddish plaques on the forearm. (b) Elevated, granulomatous plaque with central ulceration on the dorsum of the feet.

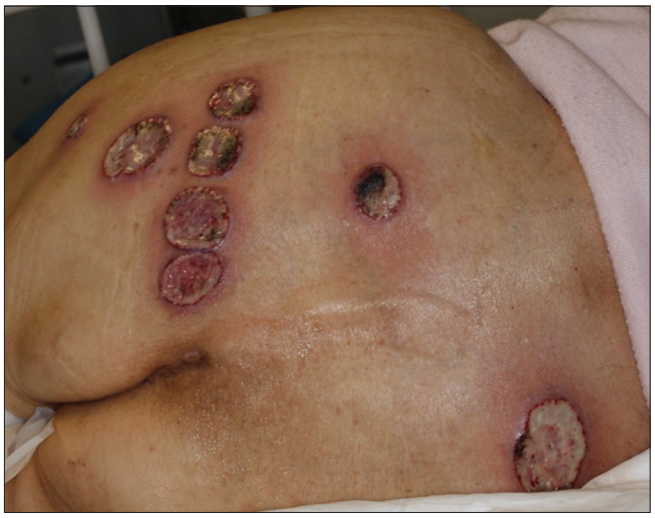

Figure 2: Multiple, round ulcerations with elevated borders on the buttock.

The diagnosis of pyoderma gangrenosum (PG) is sometimes difficult, because the histopathological features of PG are non-specific. Therefore, clinical findings are important for the diagnosis of PG; however, there are a number of disorders presenting with refractory skin ulcers mimicking PG, due to various causes, such as occlusive venous diseases, vasculitis, cancer, primary infection, drug-induced, exogenous tissue injury, and other inflammatory disorders [1]. Among the 95 cases

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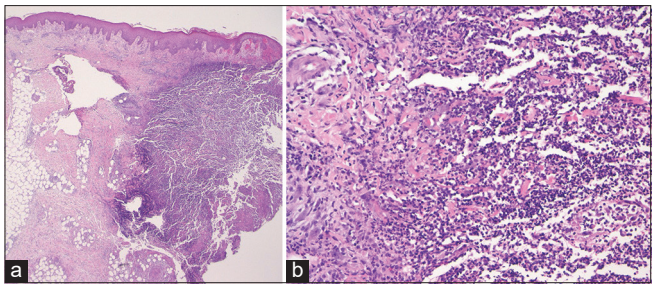

Figure 3: a) Histological features showing prominent infiltration of neutrophils (H&E; 40×). b) Higher magnification revealing dense neutrophil infiltration (400×).

presenting with PG-like skin ulcers, 14 were primary cutaneous infection, and among them, 10 had deep fungal infection [1]. There have been several cases of cutaneous cryptococcosis [2], sporotrichosis [3], deep fungus [4], and Buruli ulcers [5], which showed PG-like appearance or were misdiagnosed as PG. Thus, mycobacterial or deep fungal infection may present with clinical features mimicking PG. On the contrary, cases of PG showing mycobacterial infection are not numerous. In the present case, judging from the granulomatous clinical appearance, mycobacterial infection was initially suspected; however, mycobacteria culture was sterile, and the patient developed multiple ulcerations with edematous borders on the buttock during the skin biopsy, which was postponed. Finally, PG was diagnosed by histopathological examination. To date, some diagnostic criteria have been proposed, which described the clinical features as ulcers with irregular, violaceous, and undermined borders [6]. Differentiation from other diseases presenting with leg ulcers is necessary. Clinicians should be aware that PG may assume a varying clinical appearance, and a multifocal approach is required to differentiate other diseases presenting with ulcers. Finally, our patient was successfully treated with oral prednisolone and adalimumab. Adalimumab has recently been approved for PG in Japan [7] and is useful for cases showing steroid resistance or steroid-tapering difficulty.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

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