

# Pyoderma gangrenosum of the breast

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## DESCRIPTION

A 71-year-old woman was transferred to our hospital with fever and an ulceration on the left breast. She was suspected of having inflammatory breast cancer. One year prior to the admission, she had been diagnosed with ulcerative colitis (pancolitis); however, the disease activity was stabilised with the use of oral mesalamine (3.6 g per day). Three weeks prior to the admission, she experienced a painful left breast pustule and was admitted to a different hospital. Her symptoms worsened during the course of the treatment of the intravenous cefazolin (1g every 8 hours) for 3 days. Physical examination revealed a 7×3 cm superficial purulent ulcer with peripheral erythema on the lower proximal area of the left breast (figure 1). The ulcer included necrotic tissue at the borders with surrounding erythema; ulceration in the borders was rapidly progressing. Blood testing revealed a white blood cell count of  $7.5 \times 10^9/L$  and C-reactive protein level of 218 mg/L. An ulcer swab revealed negative microbiology cultures. Despite receiving intravenous administration of meropenem and surgical debridement, the breast ulcer rapidly deteriorated by 1 cm per day (figure 2). A punch biopsy revealed epidermal and superficial dermal necrosis with neutrophil infiltration and abscess formation. These clinical and histopathological findings were consistent with pyoderma gangrenosum (PG). The skin ulcer gradually improved after receiving oral prednisolone (35 mg per day for 3 weeks and tapered at a dose of 5 mg per week) (figure 3). One month post corticosteroid therapy, her C-reactive protein level increased again, and colonoscopy revealed extensive ulceration which indicated exacerbation of ulcerative colitis. Thus, the administration of 250 mg infliximab was initiated, and treatment with



**Figure 2** Photograph indicating rapid progression of the ulcer 3 days after admission.

corticosteroids was discontinued for 8 weeks. However, she was eventually transferred to the emergency department with sigmoid colon perforation and abscess formation. Subsequently, she underwent total abdominal colectomy. Two months after undergoing colectomy, she fully recovered and was discharged from the hospital.

PG is an immune-related neutrophilic dermatitis characterised by inflammation and ulcerative skin lesions. More than 50% patients with PG have associated systemic diseases, including inflammatory bowel disease, inflammatory arthritis and haematological malignancies.<sup>1</sup> Lesions typically begin as pustules that can rapidly develop into necrotic ulcerations. In patients with inflammatory bowel disease, the most commonly affected area is the lower extremities. Breast is an uncommon site for PG; however, approximately 80% of known cases occur after surgeries, such as mastectomy and mammoplasty.<sup>2</sup> Misdiagnosis of PG is common due to the lack of a definitive test, and differential diagnosis often includes inflammatory breast cancer or acute bacterial infections, such as cellulitis and necrotising fasciitis. Systemic immunosuppressants,



**Figure 1** Photograph of a purulent ulcer on the left breast at initial presentation.



**Figure 3** Photograph indicating complete resolution with scarring after 6 months of treatment.



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including corticosteroids, cyclosporine A and azathioprine, are the mainstays of the treatment. The role of surgery in wound management of PG is controversial as the pathergy phenomenon often affects patients.<sup>3</sup>

### Learning points

- ▶ Pyoderma gangrenosum (PG) is an uncommon immune-related neutrophilic dermatitis associated with systemic diseases, including inflammatory bowel disease and arthritis.
- ▶ Breast PG is rare and may mimic breast cancer or bacterial infection.
- ▶ Treatment for PG includes systemic corticosteroids or immunosuppressants. Surgical debridement should typically be avoided due to the risk of pathergy.

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