Letter

# The role of surgical skin grafting in pyoderma gangrenosum

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## To the Editor

A 55-year-old woman presented to the local dermatology department with edema and a flaccid blister on the right lower limb. Her medical history included type 2 diabetes, atrial fibrillation, chronic heart failure, and lower limb venous insufficiency. She denied systemic symptoms. Despite initial management with compression stockings, the lesion progressed to a painful ulcer within 10 days. A distinctive violaceous hue surrounding the ulcer was highly suggestive of pyoderma gangrenosum (PG). A small incisional biopsy yielded non-specific findings consistent with PG. A comprehensive screen for secondary causes of PG was negative.

The patient was started on a tapering course of oral prednisolone at 40 mg daily, topical clobetasol propionate ointment, and supportive wound care on an outpatient basis. Her condition failed to improve within a month, resulting in severe pain and subsequent admission for further treatment. On examination, the wound exhibited gross inflammation, with exposure of the extensor hallucis longus (EHL) tendon (**Figure 1A**). Investigations revealed a markedly elevated C-reactive protein at 182.5 mg/L (range, 0–5 mg/L) and erythrocyte sedimentation rate (ESR) 100 mm/h (range, 17–21 mm/h). A wound swab confirmed superimposed *Staphylococcus aureus* infection, prompting initiation of oral clindamycin 300 mg 4 times daily for 10 days. Oral cyclosporin was also started at 4 mg/kg. The patient reported significant improvement in pain and mobility within a week; however, the wound failed to show clinical improvement, leading to a 3-day course of intravenous methylprednisolone 1 g daily.

Three weeks into admission, with limited improvement, the local plastic surgery team was consulted. This coincided with tapering of oral prednisolone from 30 mg to 20 mg over 1 week, then to 15 mg daily over the subsequent week (**Figure 1B**). Debridement and surgical intervention were considered only after confirming effective medical suppression of inflammation, as indicated by normalization of ESR to 5 mm/h. Once biochemical remission was achieved, gentle debridement of necrotic tissue was performed to facilitate wound healing, with topical 1% hydrocortisone cream applied to limit overgranulation. Twelve weeks into admission, with sustained low ESR confirming disease quiescence, a split-thickness skin graft from the right thigh was successfully applied to the ulcer (**Figure 1C**). The patient experienced no perioperative complications and was discharged after a 16-week hospitalization, with plans for continued tapering of oral prednisolone and cyclosporin in the community. Both donor and graft sites remained healthy, and at 1-year follow-up, she had successfully discontinued cyclosporin and remained in remission (**Figure 2**).

The mainstay of PG treatment is immunosuppression, often long term, with significant side effects. The multidisciplinary approach in this case, combining high-dose immunosuppression with surgical skin grafting, demonstrates a treatment modality not universally addressed in existing literature.[1] Shen et al[2] described a case of post-Caesarean pyoderma successfully managed within a 35-day admission by inducing remission prior to grafting, highlighting the impact of judicious surgical intervention. Surgical management, including debridement and split-thickness skin grafting, should not be performed before disease quiescence to avoid pathergy, the phenomenon in which new lesions develop or existing disease worsens at sites of trauma.[3]

In the present case, quiescence was achieved with high-dose immunosuppression and careful monitoring of inflammatory markers, particularly ESR. Debridement ensures a healthy wound bed by removing necrotic tissue that could harbor infection, thereby reducing postoperative complications and enhancing graft uptake.[4] Debridement alone is inferior to debridement followed by skin grafting in PG.[5] In a case series of 15 patients treated with preoperative immunosuppression, split-thickness skin grafting, and negative pressure wound therapy, 13 patients achieved greater than 90% wound improvement; 5 patients experienced some recurrence,

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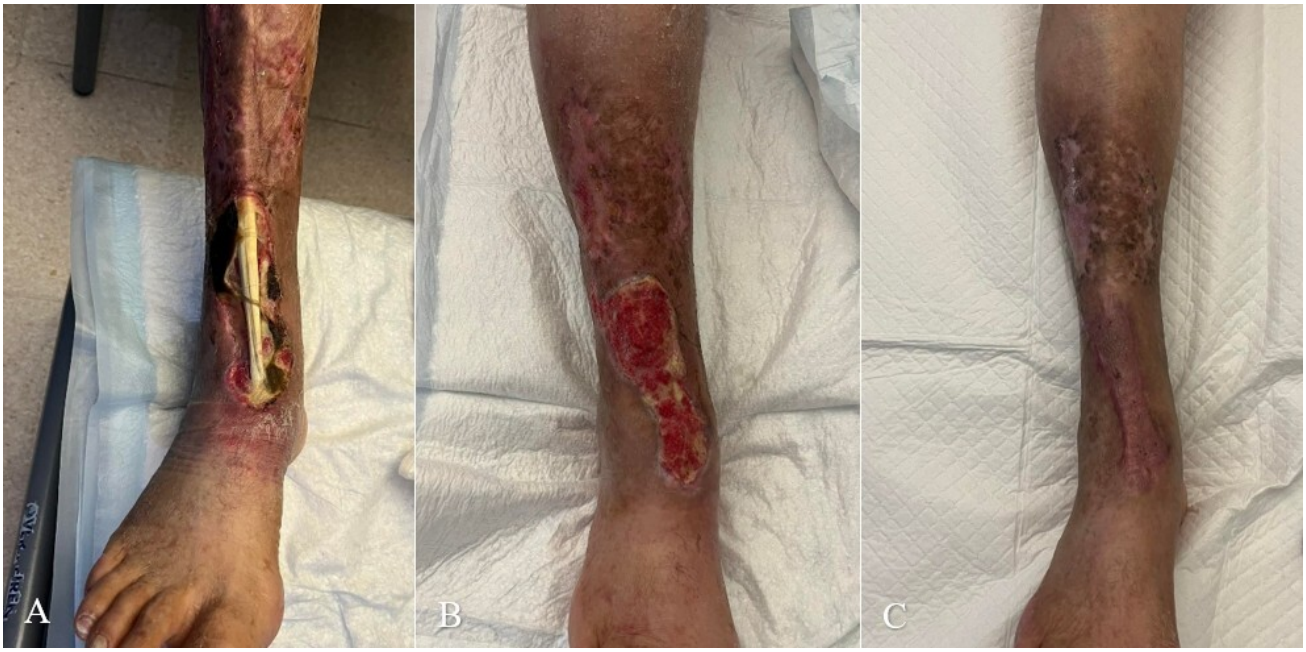


**Figure 1.** ***(A)*** *On admission, extensor hallucis longus tendon exposed with necrotic tissue evident.* ***(B)*** *Post-debridement wound showing healthy tissue.* ***(C)*** *Four weeks after successful split-thickness skin graft from the right thigh.*

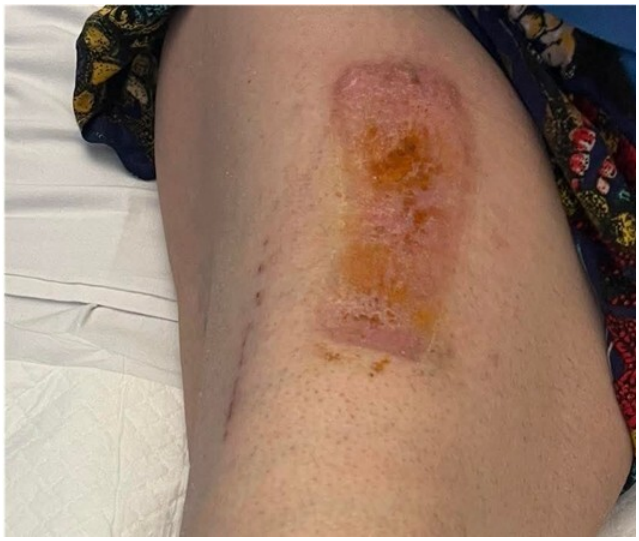

**Figure 2.** *Donor site at discharge, without evidence of pathergy.*

likely related to inconsistent immunosuppression. The average inpatient stay in this cohort was 4 weeks.[6] Negative pressure wound therapy is recommended as an adjunct to surgery and has been effective in up to 85% of cases, with no difference in recovery time.[7] Our patient did not receive negative pressure therapy, highlighting the need for individualized treatment.

The present case underscores the role of surgical intervention, particularly split-thickness skin grafting, in PG management. High-dose immunosuppression combined with vigilant monitoring of ESR ensured that debridement and grafting were performed during confirmed disease quiescence, minimizing the risk of pathergy and optimizing graft uptake. This approach resulted in rapid wound healing and sustained remission at 1-year follow-up. Timing of surgical intervention, guided by objective evidence of inflammatory control, is paramount in safely managing PG.

## Potential conflicts of interest

The authors declare no conflicts of interest.

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