

Pyoderma Gangrenosum Mimicking Early Acute Infection Following Total Knee Arthroplasty

Dear Editor,

Pyoderma gangrenosum (PG) is an ulcerative neutrophilic dermatosis of uncertain aetiology. Known associations include inflammatory bowel disease, myeloproliferative disease and various arthritides.¹ There have been 4 published cases of PG following total knee arthroplasty (TKA).³⁻⁶

Case Report

A 56-year-old male presented 6 days post-TKA with findings mimicking wound infection. He underwent wound debridement limited to the cutaneous and subcutaneous layers, followed by a Vacuum Assisted Closure® (VAC) dressing (KCI, Texas, USA), as there was no apparent involvement of the knee joint. He was started on intravenous amoxicillin and clavulanate once intraoperative cultures were taken.

Debridement was performed again 9 days post-TKA. Extensive subcutaneous necrosis and skin pustules were noted. Debridement, arthrotomy, exchange of the polyethylene insert and VAC dressing were done.

He underwent further debridements at 11 and 14 days post-TKA. There was never any pus or slough within the joint cavity and debridements were performed to healthy margins. All 8 tissue samples sent were negative for microbial growth. Histological studies revealed non-specific acute inflammatory and reactive changes. Notably, surgery seemed to aggravate the cutaneous and subcutaneous involvement. Figure 1A shows an intraoperative photo at the third round of debridement.

Fifteen days post-TKA, a dermatologist was consulted and a diagnosis of PG was made. Atypical features of this case include the lack of associated conditions, seronegativity for rheumatoid factor and an absence of satellite lesions. Oral prednisone (at 0.5 mg/kg) was started. Repeat debridement 2 days later showed improvement at the cutaneous and subcutaneous layers (Fig. 1B). C-reactive protein (CRP) and white blood cell (WBC) counts trended lower. The insert was changed, intra-articular washout performed and wound coverage achieved with a medial gastrocnemius flap and split skin grafting (Fig. 1C). Oral prednisone was tailed off over a period of 30 days. The flap and skin graft healed well, without any recurrence of PG.

Discussion

PG can mimic an acute infection after TKA, often resulting in debridement, arthrotomy and washout of the joint. This leads to a vicious cycle as surgery aggravates the condition via the pathergic response. It remains a clinical diagnosis without specific serological or histological markers. Treatment of PG usually requires systemic immunosuppressants. First-line therapy includes corticosteroids and cyclosporine.¹ Other options include anti-TNF α agents, colchicine, minocycline, and even topical treatments. Prolonged immunosuppression may be required. In a post-TKA setting, broad-spectrum prophylactic antibiotic coverage and meticulous wound care are vital to prevent secondary infection.

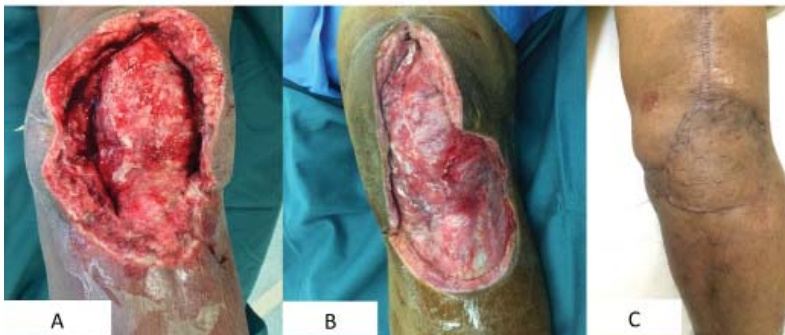


Fig. 1. Series of images showing intraoperative findings before prednisolone (Fig. 1A), after prednisolone (Fig. 1B), and after medial gastrocnemius flap with split skin grafting (Fig. 1C).

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