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A Rare and Severe Postoperative Complication After Hip Arthroplasty: Pyoderma Gangrenosum

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ABSTRACT

Pyoderma gangrenosum (PG) is a rare, ulcerative neutrophilic dermatosis that can mimic postoperative wound infections, particularly following orthopedic procedures. Misdiagnosis may lead to inappropriate surgical interventions and increased morbidity. Here, we present the case of a 76-year-old female who underwent hemiarthroplasty for a femoral neck fracture. On postoperative day 7, she developed wound ulcerations and purulent discharge, initially presumed to be a surgical site infection. Despite repeated debridements and antibiotic therapy, her condition worsened. A dermatology consultation and histopathological evaluation confirmed PG. Systemic corticosteroid therapy led to rapid improvement, and the wound was successfully closed by day 25. The patient was discharged uneventfully on postoperative day 45. PG should be considered in cases of atypical wound healing or ulceration after surgery, especially when lesions deteriorate with debridement. Early recognition and multidisciplinary management are critical for optimal outcomes.

Keywords: Arthroplasty, complication, hip, pyoderma gangrenosum, wound infection.

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INTRODUCTION

Pyoderma gangrenosum (PG) is a rare inflammatory skin disorder that can lead to tissue necrosis and ulceration.[1] Although its exact etiology remains unknown, it is believed to be associated with immune system dysfunction.[2] PG is frequently mistaken for wound infections or necrotizing fasciitis and may appear following surgical interventions.[3] In this report, we present a rare case of PG that developed after hemiarthroplasty performed for a femoral neck fracture.

CASE REPORT

A 76-year-old female patient was admitted to our orthopedics and traumatology department after sustaining a right femoral neck fracture due to a low-energy fall (Fig. 1). She had no known systemic diseases and was not taking any regular medications. Six hours after admission, she underwent right hip hemiarthroplasty under spinal anesthesia (Fig. 2). The drain was removed, and the patient was mobilized on postoperative day 1. As no complications occurred, she was discharged on postoperative day 3.

On postoperative day 7, she returned to the outpatient clinic with complaints of wound problems. Oval skin lesions and malodorous seropurulent discharge were observed along the proximal and distal aspects of the suture line and the drain exit site (Fig. 3). Laboratory results revealed leukocytosis (white blood cell count [WBC]: 18,000/μL), elevated erythrocyte sedimentation rate ESR (70 mm/h), and C-reactive protein (CRP: 200 mg/L). With an initial diagnosis of surgical site infection, the patient was re-hospitalized. Wound cultures were obtained under sterile conditions, local debridement was performed, and empirical intravenous vancomycin (1 g twice daily) was initiated following consultation with the infectious diseases team.

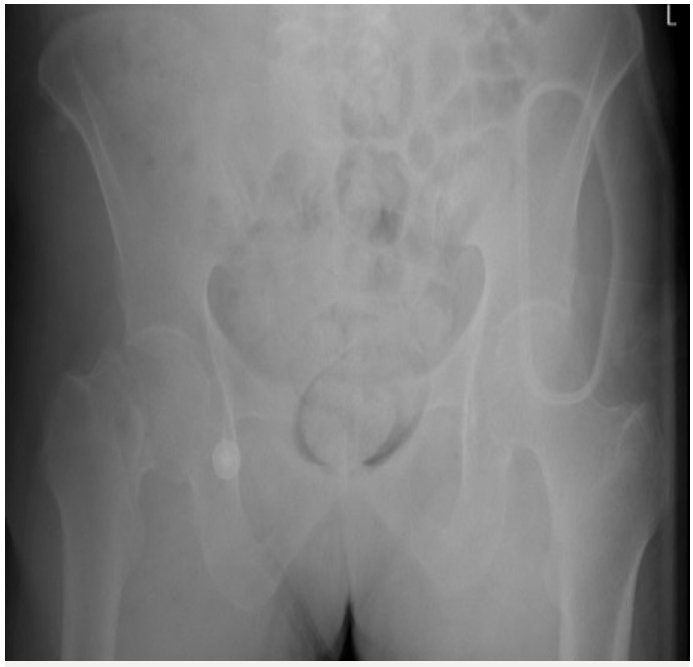

Figure 1. Preoperative anteroposterior (AP) pelvic radiograph showing a right femoral neck fracture.

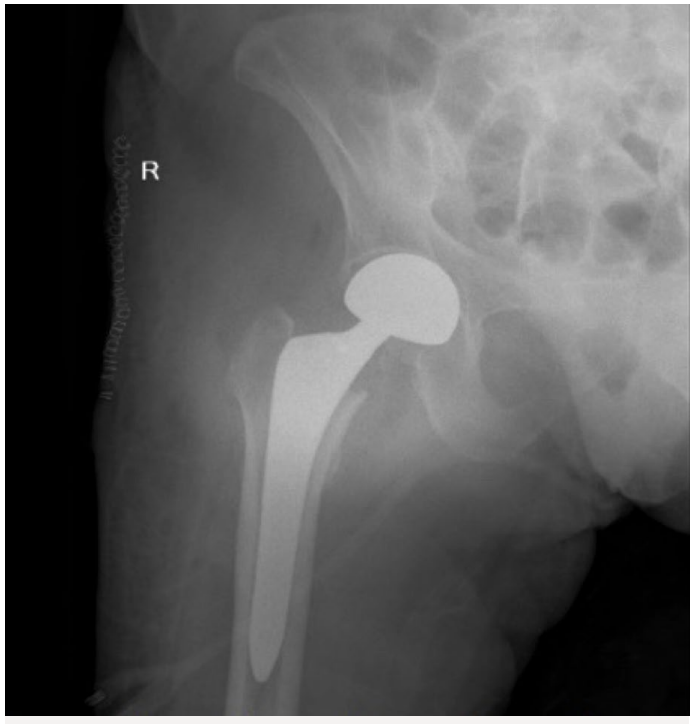

Figure 2. Postoperative anteroposterior (AP) radiograph of the right hip demonstrating a partial hip prosthesis.

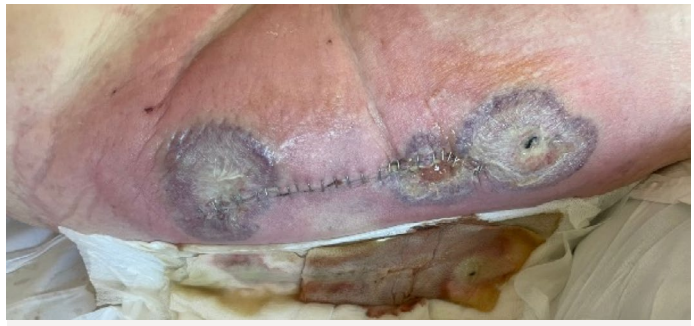

Figure 3. Wound appearance on postoperative day 7, when the patient presented with complaints of wound infection.

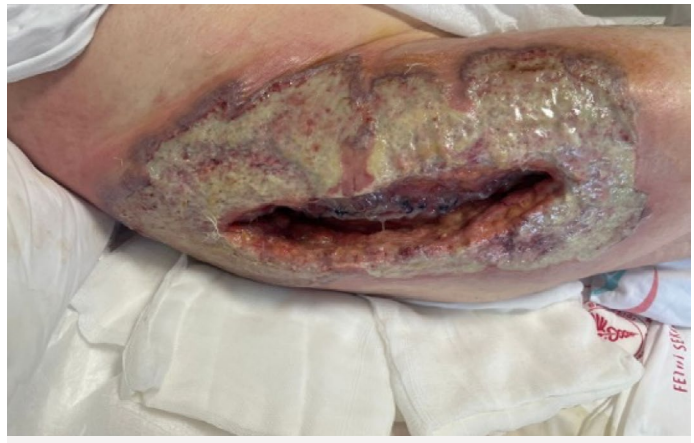

Figure 4. Application of vacuum-assisted closure (VAC) therapy on postoperative day 10, following lesion progression after local debridement.

On postoperative day 10, the lesions progressed and wound dehiscence developed, prompting a wide debridement under sedation and the application of vacuum-assisted closure (VAC) therapy (Fig. 4). Due to continued lesion progression after each intervention and the emergence of erythematous papules and ulcerative lesions around the wound (Fig. 5), a dermatology consultation was requested. A skin biopsy was performed with a preliminary diagnosis of PG, and intravenous methylprednisolone (1 mg/kg/day) was initiated empirically. The biopsy confirmed the diagnosis of PG. No bacterial growth was observed in wound cultures. Debridement was discontinued, and wound care was continued with topical treatments and systemic steroids (Fig. 6).

Following lesion regression, the wound was closed primarily on postoperative day 25 (Fig. 7), and sutures were removed on postoperative day 45. The patient was discharged uneventfully (Fig. 8).

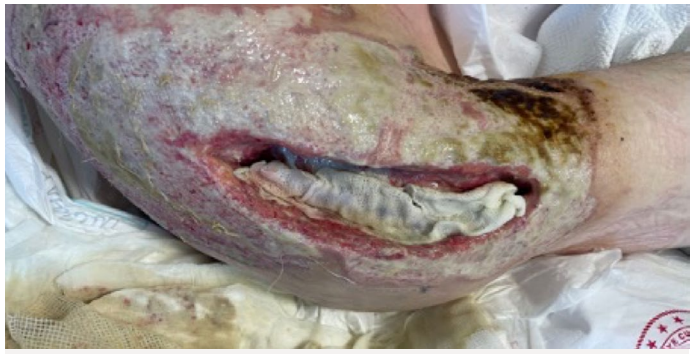

Figure 5. Progressive lesion enlargement after each debridement, with the appearance of erythematous papules and ulcerative lesions around the wound.

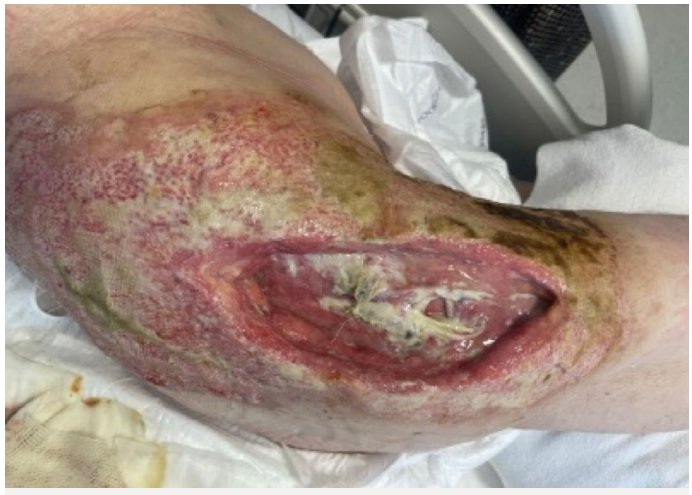

Figure 6. Wound appearance during ongoing topical wound care and systemic steroid therapy after discontinuation of debridement.

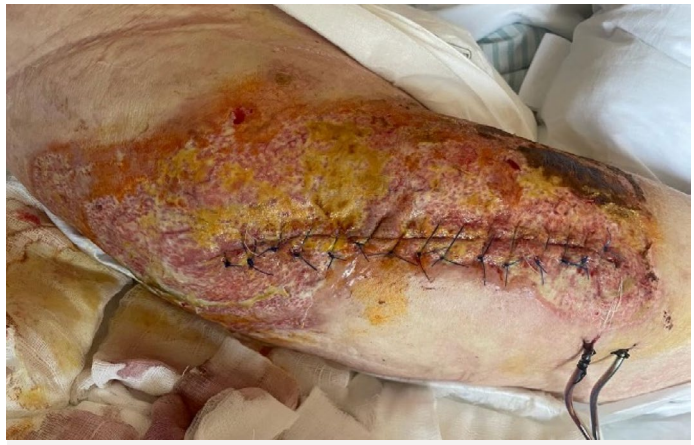

Figure 7. Primary wound closure performed on postoperative day 25, following lesion regression.

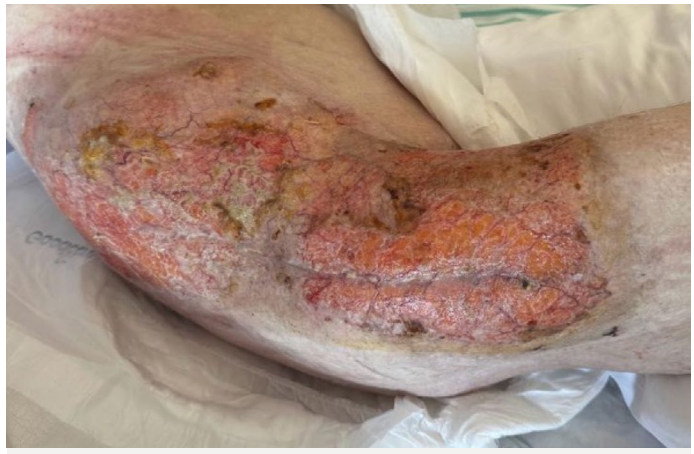

Figure 8. Suture removal on postoperative day 45.

DISCUSSION

Pyoderma gangrenosum often develops within the first 15 days following surgery and may easily be misdiagnosed as a surgical site infection.[4] The pathergy phenomenon can exacerbate PG lesions, meaning that surgical debridement may worsen the condition. In our case, the initial diagnosis was surgical site infection; however, the patient's condition deteriorated after repeated debridements, and the definitive diagnosis was made through dermatologic consultation and histopathologic evaluation.

Although PG can be idiopathic, it is frequently associated with systemic diseases such as inflammatory bowel disease, autoimmune disorders, or hematologic malignancies.[5] Our patient underwent a thorough evaluation for underlying conditions, including rheumatological assessments, endoscopic and colonoscopic examinations, and tumor screenings. No PG-related pathology was detected.

The management of PG primarily relies on clinical experience, with systemic corticosteroids being the first-line treatment.[6] Most patients respond to treatment within a few days.[7] Gentle wound care and avoidance of unnecessary surgical interventions are critical. Additional therapeutic options in refractory cases may include topical agents, negative pressure wound therapy (VAC), hyperbaric oxygen therapy, and immunosuppressive agents.[8,9]

Pyoderma gangrenosum is a rare, aggressive, and potentially life-threatening condition that poses diagnostic and therapeutic challenges. It should be considered in cases of postoperative wound complications, particularly when lesions worsen after debridement. Early recognition and

a multidisciplinary approach are essential to prevent unnecessary surgical interventions and improve patient outcomes.

Ethics Committee Approval: This is a case report, and therefore ethics committee approval was not required in accordance with institutional policies.

Informed Consent: Written informed consent was obtained from the patient, and personal information has been concealed in the case presentation.

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