CLINICAL REPORT

Pyoderma gangrenosum following an orthopedic surgical procedure

E. de Thomasson∗, I. Caux

Orthopedic Surgery Department, Montsouris Mutualistic Institute, 47, boulevard Jourdan, 75014 Paris, France

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Pyoderma gangrenosum; Wound breakdown; Hip surgery

Summary
Pyoderma gangrenosum is a severe neutrophilic dermatosis that may occur as a complication following any kind of surgery. Although mainly reported secondary to breast surgery, it may also arise in orthopedic surgery. Misdiagnosis risks serious sequelae, due to inappropriate or delayed treatment. Unlike the infections, which it mimics, it is to be managed by corticosteroids, and debridement is absolutely contraindicated, as it will cause dermatologic lesions in the traumatized areas, worsening and accelerating the pathologic process. As anatomopathology tends to shed little light, it is essential to bear the diagnosis in mind in case of any early superficial pustular lesion showing rapid extension despite correctly administered antimicrobial therapy. We report a case of pyoderma gangrenosum secondary to hip replacement surgery, and detail diagnostic factors and means of treatment.

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Introduction

Pyoderma gangrenosum, first described in 1930 by Brunsting et al. [1], is a rare form of inflammatory, aseptic, ulcerative neutrophilic dermatosis. In 50 to 70% of cases, it precedes or accompanies an underlying inflammatory, immunologic or neoplastic systemic disorder; it may, however, also arise secondarily to trauma, including surgery [2], mimicking operative site infection. Although most often associated with breast surgery [3], it may also, more rarely, follow orthopedic surgery [4—6].

Observation

We report a case of pyoderma gangrenosum secondary to total hip replacement (THR) performed for arthritis in a 65-year-old woman. She had been operated on 10 years previously for adenocarcinoma of the colon and 5 years later for adenocarcinoma of the pancreas, without complications. The most recent digestive checkups suggested no recurrence at either site.

THR used an anterior approach with a traction table. Eight days postoperatively, the patient’s temperature was 37.8 °C, with a 1 × 2 cm pustular lesion in the mid-part of the scar showing polymnucleosis with a 16,000/mm3 leukocyte count and a CRP value of 214.

A diagnosis of early infection was considered; surface swabs were taken and hip puncture under ultrasound guidance was performed. Medical and theater records testified...
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Figure 1  Anterior scar, 8 days postoperatively.

Figure 2  Scar’s aspect at maximum pyoderma gangrenosum evolution, causing an ulcerative lesion with whitish aseptic coating.

Figure 3  Aspect at 2 months postoperatively, following scar healing.

to adherence to skin preparation procedures and prophylactic antibiotherapy and instrument and implant sterility. Amoxicillin/clavulanic acid (Augmentin®) and ciprofloxacin (Ciflox®) were administered by precaution awaiting bacteriological results, due to the worsening of the skin lesions at 36 hours (Fig. 1). The unusual, fulminating aspect, negative bacteriological findings and strict adherence to good practice during THR cautioned against early reintervention. Clinical evolution at 5 days showed 38°C fever, a severe biological inflammatory syndrome (CRP > 300) and, above all, continued worsening of the ulcerative skin lesion coated in whitish pus, rounded in form with up to 15 cm diameter, centered on the anterior part of the scar and threatening the labia majora (Fig. 2). Given the negative bacteriological findings and on dermatological advice, a diagnosis of pyoderma gangrenosum was considered, despite lack of evidence from the biopsy. Per os prednisone (Cortancyl®) 1 mg/kg immediately halted progression; temperature and biological inflammation values returned to normal within 12 days. Given this rapid clinical improvement, the initial antibiotic therapy was replaced by minocycline (Mynocine®) 200 mg/day as adjuvant. Prednisone was continued for 6 weeks. Complete healing (Fig. 3) was obtained at 6 weeks without functional sequelae, despite the proximity to the flexion folds. At 2 years’ follow-up, evolution was satisfactory, biological values were normal and the patient was able to walk freely without pain.

Discussion

Pyoderma gangrenosum is a rare but threatening complication of any kind of surgery. Wadia et al. [7] found only 18 publications on the subject in a Medline search of 1300 articles. Although most often associated with breast surgery [5], pyoderma gangrenosum may occur after any surgical operation, mimicking early infection.

Unlike early infection, however, pyoderma gangrenosum requires high-dose corticosteroids or cyclosporine (Neoral®) [5], and debridement is to be at all costs avoided: reproducing the lesions throughout the traumatized area, it would aggravate and accelerate evolution in a typical pathergic response [2].

Anatomopathology sheds little light [2], the lesions being mostly atypical.

A diagnosis of pyoderma gangrenosum is to be considered in case of early lesions spreading despite preventive antibiotherapy [8], especially where there is severe inflammatory syndrome, negative bacteriological findings and associated systemic disorder (Crohn’s disease, polyarthritis, diverticulitis, familial history of pyoderma, or immunologic or neoplastic pathology). Anatomopathology contributes little, although there will typically be an ulcerative lesion with polynuclear neutrophil infiltrate and associated capillary network disorder (mainly, venular thrombosis) [9]. Symptom aggravation despite correct antibiotherapy is the principal alarm signal. Early diagnosis allows rapid implementation of corticotherapy, which will both be the decisive diagnostic test and induce rapid sequela-free resolution [4]. Finally, preoperative preventive corticotherapy has been reported to be effective [4–10] in patients with a history of this complication.
Conflicts of interest statement

None.

References