Necrotic Ulceration of the Skin and Fascia
(See page 869 for Photo Quiz)

Figure 1. Epidermal and dermal ulceration characteristic of pyoderma gangrenosum.

Figure 2. Pyoderma gangrenosum after administration of hydrocortisone and prednisolone therapy.

Diagnosis: Pyoderma gangrenosum.

A biopsy was performed, which revealed neutrophilic infiltration with epidermal and dermal ulceration characteristic of pyoderma gangrenosum (figure 1). Cultures were sterile. The patient commenced therapy with intravenously administered hydrocortisone. This was followed within 2 days by defervescence and reduction in the inflammatory changes. His therapy, which included a reducing dose of prednisolone, was continued for the subsequent 3 months, and further improvement was noted (figure 2). Skin grafting was not required.

Pyoderma gangrenosum was first described by Brunsting et al. [1] in 1930 as an idiopathic inflammatory condition with a characteristic ulcer. The lesion frequently starts as a papule with surrounding erythema. Ulceration follows, and spread occurs over several days or weeks. Lesions can be single or multiple, and they sometimes occur in crops. The advancing border is well defined and deep erythematous to violaceous in appearance. The legs are the most common site of involvement. Pain can be severe, and fever, malaise, myalgia, and arthralgia are common. The histological presentation involves massive

neutrophilic infiltration, hemorrhage, and necrosis of the epidermis. The process may simulate an abscess or cellulitis [2, 3]. Diagnosis is based on clinical and histological appearance.

Most cases of pyoderma gangrenosum associated with inflammatory bowel disease occur on the lower limbs, often at the site of preceding trauma. Posttraumatic pyoderma is frequently described in association with peristomal lesions in patients who are known to have inflammatory bowel disease [3]. However, other postsurgical site lesions are rarely reported.

In one series of 15 cases of pyoderma gangrenosum, only 2 cases were associated with inflammatory bowel disease, but 3 were associated with myeloma and 8 were associated with arthropathies that tended to predate the pyoderma gangrenosum and to be progressively destructive in nature [4]. In another series of 15 cases, pyoderma gangrenosum was associated with “internal disease” in 8 cases and had neutrophilic pulmonary involvement in 2 [5]. Wegener granulomatosis also appears to be associated with pyoderma gangrenosum–like lesions, which may be the initial presenting feature of the disease [6]. Solid-organ malignancy [3], Sweet syndrome [7], and various chronic conditions, such as viral hepatitis and HIV infection [2], also appear to be associated with pyoderma gangrenosum. Pyoderma gangrenosum complicating a caesarian-section wound in a patient without any of the associated systemic diseases has been described [8], as have a case that occurred after hip joint surgery [9], a case complicating reduction mammoplasty [10], a case complicating spinal surgery [11], and a further case complicating coronary artery bypass grafting [12]. This association with surgery is referred to as “pathergy.”

Pulmonary disease is also infrequently associated with pyoderma gangrenosum. Occasionally, pulmonary disease complicates ulcerative colitis or autoimmune arthropitides, and it frequently complicates Wegener granulomatosis. There have been reported cases of neutrophilic lung disease that complicated pyoderma gangrenosum in the absence of the conditions above [13] but that responded to immunosuppressive therapy. In the French case series [5], the 2 cases of neutrophilic lung disease proved to be fatal.

Most cases of pyoderma gangrenosum reported in the literature responded well to immunosuppressive therapy (coexistent autoimmune conditions may be nonresponsive) and some resolved spontaneously. Recurrences after therapy appear to be common, with one series [4] estimating a recurrence rate of 46%. In conclusion, pyoderma gangrenosum should be considered as a possible diagnosis whenever a suggestive cutaneous lesion occurs after trauma or surgery.

Robert Horvath,1 Peter Duffy,7 and Joseph G. McCormack1
1Department of Medicine/Infectious Diseases, University of Queensland, and 2Department of Vascular Surgery, Mater Misericordiae Health Services, South Brisbane, Queensland, Australia

References