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CME CREDIT

The Clinical Picture

A young woman with an eroded plaque on the hand

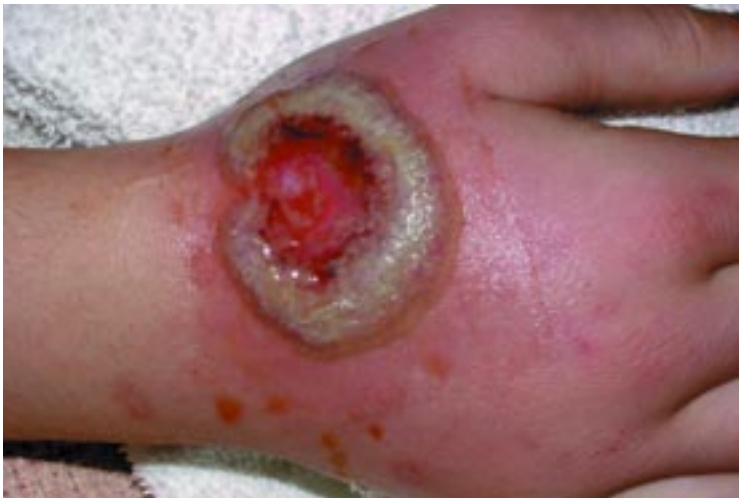

FIGURE 1. Painful lesion at the site of previous catheter insertion.

Q: A 23-YEAR-OLD WOMAN has a painful, inflamed, eroded plaque on the dorsum of her hand (**FIGURE 1**). It began with pustules in the same area. She says that she had undergone cholecystectomy 2 weeks earlier and that an intravenous catheter had been placed at the site of the ulceration. She is afebrile, and blood cultures and tissue cultures are negative.

Q: What is the most likely diagnosis?

- ❑ Brown recluse spider bite
- ❑ Cutaneous anthrax
- ❑ Cutaneous cryptococcosis
- ❑ Pyoderma gangrenosum
- ❑ Sweet syndrome

A: Based on the history and the clinical appearance of the lesion, the correct answer is pyoderma gangrenosum.

A brown recluse spider bite usually results in a dermonecrotic reaction that results in a dry eschar or ulceration with central dusky necrosis.[1]

Cutaneous anthrax begins as a painless pustule on the hands, head, or neck. It enlarges and develops into a vesicle or bulla with surrounding nonpitting edema. The vesicle becomes hemorrhagic and necrotic and may be surrounded by small satellite vesicles. An eschar forms and eventually sloughs off in 1 to 2 weeks, leaving a shallow ulcer.

Cutaneous cryptococcosis often mimics molluscum contagiosum, which is characterized by flesh-colored papules with central umbilication.

Sweet syndrome presents with fever, peripheral blood neutrophilia, and painful, erythematous, edematous, crusted papules and plaques that favor the face and upper extremities.

KEY FEATURES OF PYODERMA GANGRENOSUM

Pyoderma gangrenosum is an idiopathic neutrophilic dermatosis first described in 1930.[2] Its incidence is approximately 1:100,000, with a female predominance. It usually affects adults 20 to 50 years old and is often associated with inflammatory bowel disease or rheumatoid arthritis, and occasionally with paraproteinemia.[3,4] Symptoms of ulcerative colitis often precede an outbreak of pyoderma gangrenosum, and exacerbations of bowel dis-

ease often correlate with worsening skin lesions. Pyoderma gangrenosum often precedes the onset of symptomatic arthritis, and patients often have seropositive rheumatoid arthritis, seronegative rheumatoid-like arthritis syndrome, or arthritis associated with inflammatory bowel disease (ie, seronegative, acute, oligoarticular, and nondestructive).[1] Bullous pyoderma gangrenosum occurs with acute leukemia.

Cause unknown

The pathogenesis is unknown; however, defective neutrophil chemotaxis or hyperreactivity with overexpression of interleukins 8 and 16 has been reported.[2]

How it develops

Pyoderma gangrenosum usually begins with trauma yielding a pustule, with expansion to a plaque followed by ulceration. The plaque often has characteristic violaceous rolled borders with undermined edges. The most commonly affected site is the leg, but it can occur anywhere on the body. Patients may have fever, malaise, arthralgias, and myalgias. Pyostomatitis vegetans is an oral variant in which vegetative erosions develop on mucous membranes.[4]

Reconsider the diagnosis of pyoderma gangrenosum if it does not respond to corticosteroids

Diagnostic clues

Pyoderma gangrenosum is invariably a clinical diagnosis and often one of exclusion. A thorough history and physical examination are essential.

The differential diagnosis of pyoderma gangrenosum includes infectious causes (eg, cryptococcosis, herpetic disease), hematologic malignancies, and rheumatologic-vasculitic diseases such as Wegener granulomatosis, antiphospholipid antibody syndrome, or polyarteritis nodosa.[3–5]

Histopathologic study is nonspecific, and direct immunofluorescence may reveal perivascular deposition of immunoreactants (immunoglobulin M, complement C3, and fibrin), suggesting vasculopathy. Patients often have no specific laboratory abnormalites, but some have an elevated C-reactive protein or erythrocyte sedimentation rate, neutrophilic leukocytosis, anemia, and hyperglobulinemia or hypoglobulinemia.[3]

A sterile skin biopsy specimen should be obtained and sent for special stains and culture (bacterial, mycobacterial, fungal, and viral). Additional biopsy samples may be needed later for immunofluorescent studies, polymerase chain reaction studies, or both. Serologic studies include serum protein electrophoresis, immunofixation electrophoresis, and antinuclear antibody, antiphospholipid antibody, antineutrophil cytoplasmic antibody, and VDRL (Venereal Disease Research Laboratory) tests.

Hematologic studies include complete blood count with platelets, peripheral blood smear, and bone marrow examination. Studies of the gastrointestinal tract include stool for occult blood and parasites, colonoscopy, biopsy, liver function tests, and radiography.[6]

Misdiagnosis is common, and inappropriate treatment can exacerbate the disease. For example, treatment with immunosuppressive drugs can place patients with infections or lymphoma at considerable risk. The diagnosis of pyoderma gangrenosum should always be reconsidered when an eroded ulcer fails to respond to corticosteroids or other immunosuppressive medications. Repeat biopsy may be necessary to arrive at an accurate diagnosis. The need to rule out an alternative disease should override the fear of exacerbating the condition by performing a biopsy.[3,5,7]

TREATMENT GOALS

The goals of therapy are to reduce inflammation and discomfort and promote healing. The duration of therapy depends on the number, size, and depth of the lesions, the medical status of the patient, and the risks and tolerability of prolonged therapy.

In patients with underlying disease, treatment should focus not only on the lesion, but also on the underlying systemic disorder.

The standard treatment is with systemic corticosteroids, with or without adjunctive systemic therapy. The usual starting corticosteroid dosage is 60 to120 mg daily, gradually tapered as the inflammatory component disappears, then discontinued upon resolution.

Adjunctive therapy

Some patients may require minocycline, dapsone, cyclosporine, azathioprine, methotrexate, infliximab, or etanercept as adjunctive therapy.[5,7,8] Superpotent topical corticosteroids and topical tacrolimus both result in improvement when used in combination with oral corticosteroids or other systemic therapy.

Wound care includes antimicrobial silver-impregnated dressings or alginate dressings. Surgical intervention such as debridement or grafting is contraindicated as it often makes the ulcers worse.

Pronounced scarring, recurrences common

Healing occurs with scarring that is often cribiform and pronounced. Pyoderma gangrenosum often recurs in a previous or different site after minimal trauma, or it parallels that of bowel disease when associated with inflammatory bowel disease.

The clinical course is difficult to predict and may follow two patterns: explosive onset with rapid spread of lesions within days, or a slow indolent progression over months. The disease may be self-limited or chronic. Proper management requires correct diagnosis and focused treatment.

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