Pyoderma gangrenosum faciale in a patient with Crohn's disease

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INTRODUCTION

Pyoderma gangrenosum (PG) is commonly comorbid with an apparent or occult underlying condition.[1] PG normally occurs on the lower extremities, and facial manifestations are rare.[1,2] We present a case of severe ulcerative PG faciale, complicated by cranial nerve dysfunction possibly leading to chemical aspiration and death.

Abbreviations used:

CT:	computerized tomography
CD:	Crohn's disease
IBD:	inflammatory bowel disease
PG:	pyoderma gangrenosum

CASE REPORT

A woman in her 40s with a history of recurrent cutaneous and oropharyngeal abscesses and aphthae of indeterminate etiology, treated with antimicrobials and prednisone, 20 mg/d, was admitted to the hospital for a recurrent maxillofacial abscess. A 2-cm, purulent, subperiosteal fluid collection within the left maxillary vestibule was noted on examination and computerized tomography (CT) maxillofacial protocol. Empiric treatment was initiated for a presumed infectious left vestibular maxillary abscess and osteomyelitis. The patient underwent intraoral incision and drainage and received empiric intravenous vancomycin and piperacillin-tazobactam. Abscess cultures grew normal oropharyngeal flora. The patient was discharged on a 6-week course of ertapenem and doxycycline with dose-reduced prednisone, 10 mg/d.

A week later, the patient was re-admitted for rapidly progressing edema, pain, and purulent left cheek drainage, despite compliance with antibiotics. Physical examination found an edematous, ecchymotic plaque with central eschar extending from the left medial canthus to the inferior buccal cheek. After several days, the eschar sloughed off spontaneously, revealing an exudative ulceration to the fat layer and connecting into the maxillary oral cavity (Fig 1, *A* and *B*). Ulcer edge histopathology found a dense, diffuse, mixed inflammatory infiltrate, and scattered vascular channels in the mid dermis showed marked fibrinoid degeneration and focal fibrin thrombi. No vasculitis was seen, and tissue cultures remained without growth. An undermined perianal ulcer was also noted (Fig 2).

Laboratory findings were consistent with iron deficiency anemia. Further investigations failed to find paraproteinemia, anti-CCP antibodies, rheumatoid factor, anti—neutrophil-associated cytoplasmic titers, or anti—proteinase 3 and antimyeloperoxidase antibodies. The patient reported a recent normal colonoscopy at an outside hospital.

Ulcerative PG faciale was suspected. Iron deficiency without peptic ulcer disease symptoms or menorrhagia made occult inflammatory bowel disease (IBD) a compelling comorbid association. Antibiotics were discontinued, and the patient was started systemic corticosteroids, colchicine, dapsone, and cyclosporine. The patient's wound showed marked improvement over her 24-day hospitalization, and she was discharged home.

Further outpatient workup included elevated anti-Saccharomyces cerevisiae IgG at 50.9 units and IgA at 41.0 units (reference range, 0.0-24.9 units). Colonoscopy and pill camera endoscopy while on

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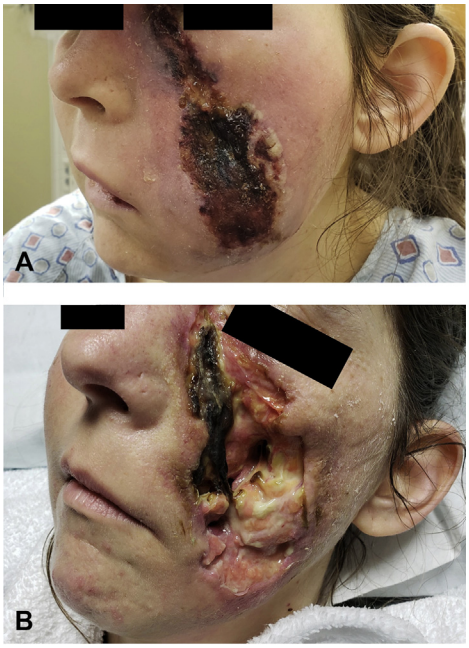

Fig 1. PG faciale. **A**, Initial presentation shows an edematous, bruise-like plaque with central eschar and purulent borders. **B**, Several days after presentation, the eschar spontaneously separated and revealed an ulcer to the fat layer with connection into the oral cavity.

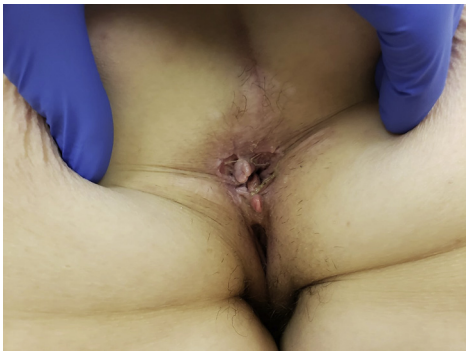

Fig 2. Perianal PG. Near circumferential undermined anal ulcer.

immunosuppressive therapy were nondiagnostic. Infliximab and azathioprine were necessary to effect ulcer re-epithelialization (Fig 3). The patient experienced a PG flare requiring intensified pharmacotherapy and a suspected aspiration pneumonia from benzodiazepine overdose. Modified barium swallow found aspiration past true vocal cords when swallowing thin liquids consistent with moderate oropharyngeal dysfunction.

The patient was later hospitalized with a productive cough progressing to worsening hoarseness and hemoptysis. A CT scan of the chest found multifocal centrilobular nodular airspace opacities predominantly in the right upper lobe, concerning for multifocal pneumonia, chemical pneumonitis, or extracutaneous PG. She was given antimicrobial treatment, and azathioprine and infliximab were held during hospitalization. After discharge, her facial PG and constitutional symptoms worsened. The patient chose to resume her immunomodulatory therapies with close monitoring rather than be re-admitted to rule out infection. Her condition stabilized and improved. However, after a trip to New York City in February 2020, the patient and her parents suffered from new-onset fevers, diarrhea, and cough. Although her parents recovered, the patient complained of severe shortness of breath and died at home presumably of coronavirus disease 2019 (COVID-19).

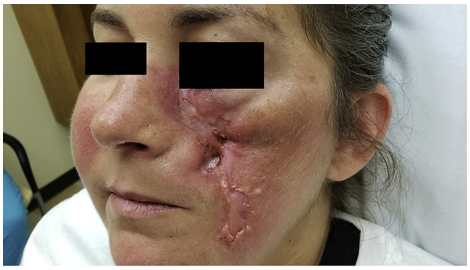

Fig 3. Healing PG faciale. Pink, depressed, re-epithelialized scar is without eschar. An oral cavity opening is still present.

DISCUSSION

PG is difficult to diagnose because of variable presentation, overlap with other conditions, and absence of pathognomonic laboratory and histologic findings. Our patient met 1 major criterion and 4 minor criteria for ulcerative PG (biopsy showing neutrophilic infiltrate; infection exclusion; peripheral erythema, undermined border, and tenderness at ulceration site; cribriform scar at healed ulcer sites; decreasing ulcer size within 1 month of taking immunosuppressants), yielding a specificity of 90% for PG.[3]

Facial and perianal PG are exceedingly rare. Only 4.5% of 356 patients or 7.8% of 103 patients present with facial involvement.[1,2] We found 2 other cases of perianal PG after conducting a PubMed review using the terms "Pyoderma gangrenosum AND perianal."[4,5]

Because PG is associated with an underlying disease in 50% to 78% of patients, most commonly IBD, investigation into a comorbid condition is warranted.[6] Endoscopic and histologic confirmation of IBD may be difficult in patients presenting with acute PG due to intolerance of or inadequate bowel preparation, timing of immunosuppressive therapies that blunt diagnostic sensitivity of gastrointestinal

histology, and gastroenterologist willingness to pursue invasive tests in the absence of symptoms.

Our patient's history of aphthous ulcers, iron deficiency anemia, and perianal disease commonly present in patients with CD.[7] A meta-analysis of more than 1300 patients with and without suspected CD indicate a pooled anti-Saccharomyces cerevisiae antibody sensitivity of 55% (95% confidence interval, 52-59) and pooled specificity of 93% (95% confidence interval, 91-95) for CD.[8] Diagnosis of underlying IBD may afford insurance coverage of US Food and Drug Administration—approved immunomodulatory therapies that may not otherwise be supported for PG alone.

PG most commonly presents extracutaneously in the lungs and typically affects 30- to 60-year-old women. Symptoms are variable, and most commonly include fever and cough, whereas other signs of respiratory involvement, such as dyspnea, crackles, and stridor, are reported less frequently.[9,10] Chest radiograph and CT scan can reveal noncavitating or cavitating infiltrates or pulmonary nodules. Given the rarity of pulmonary PG and its variable presentation, no clinical guidelines exist for diagnosis and treatment.[10] A differential diagnosis of granulomatosis with polyangiitis, infection, and malignancy is typically considered. Our patient's delayed swallowing trigger and incomplete laryngohyoid elevation from PG-induced cranial nerve dysfunction increase her aspiration risk. Therefore, respiratory symptoms and pulmonary infiltrates, as well as reasonable rule out of granulomatosis with polyangiitis, suggest a differential diagnosis of infectious pneumonia, chemical pneumonitis, or pulmonary PG. Misdiagnosis can prove deadly, as reducing immunosuppressive treatment may cause a pulmonary PG flare, whereas continuing immunosuppressants allows progression of aspiration pneumonia or chemical pneumonitis.

Here we present an unusual case of facial and perianal PG in a patient with occult underlying CD complicated by pulmonary disease of uncertain etiology. Patients with PG faciale should be assessed for dysphagia, and pulmonary disease must be adequately investigated to determine best management strategies.

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