Nonhealing Ulcer in a Patient With Crohn Disease

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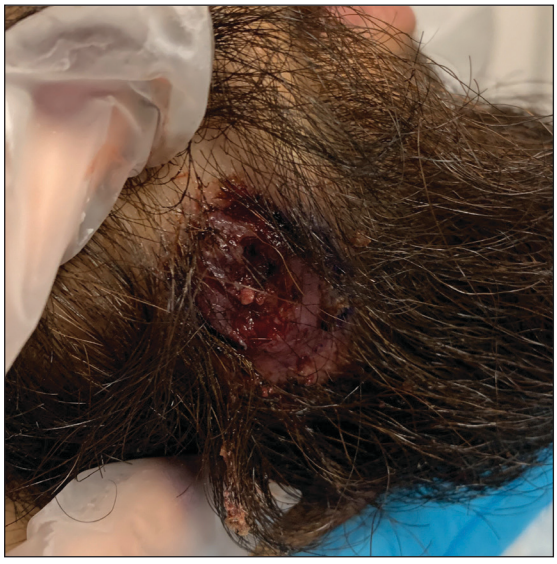

A 24-year-old man presented to our dermatology clinic with a painful lesion on the right buccal cheek of 4 months' duration that had not changed in size or appearance. He had a history of Crohn disease that was being treated with 6-mercaptopurine and infliximab. He underwent jaw surgery 7 years prior for correction of an underbite, followed by subsequent surgery to remove the hardware 1 year after the initial procedure. He experienced recurring skin abscesses following the initial jaw surgery roughly once a year that were treated with bedside incision and drainage procedures in the emergency department followed by trimethoprim-sulfamethoxazole with complete resolution; however, treatment with mupirocin ointment 2%, trimethoprim-sulfamethoxazole, and azithromycin did not provide symptomatic relief or resolution for the current lesion. Physical examination revealed a 4-cm ulceration with actively draining serosanguineous discharge. Two punch biopsies were performed; 48-hour bacterial and fungal cultures, as well as Giemsa, acid-fast bacilli, and periodic acid–Schiff staining were negative.

WHAT'S YOUR **DIAGNOSIS?**

a. aseptic abscess ulcer
b. *Mycobacterium abscessus* infection
c. pyoderma gangrenosum
d. pyodermatitis-pyostomatitis vegetans
e. squamous cell carcinoma

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THE **DIAGNOSIS:** *Mycobacterium abscessus* Infection

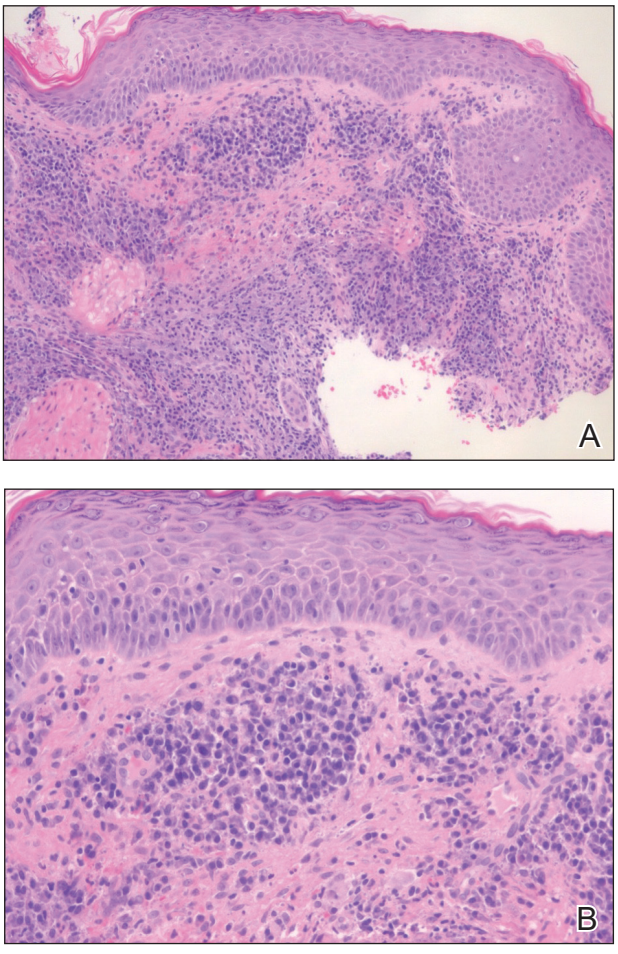
Upon further testing, cultures were positive for *Mycobacterium abscessus*. Our patient was referred to infectious disease for co-management, and his treatment plan consisted of intravenous amikacin 885 mg 3 times weekly, intravenous imipenem 1 g twice daily, azithromycin 500 mg/d, and omadacycline 150 mg/d for at least 3 months. Magnetic resonance imaging findings were consistent with a combination of cellulitis and osteomyelitis, and our patient was referred to plastic surgery for debridement. He subsequently was lost to follow-up.

Mycobacterium abscessus is classified as both a nontuberculous and rapidly growing mycobacterium. *Mycobacterium abscessus* recently has emerged as a pathogen of increasing public health concern, especially due to its high rate of antibiotic resistance.[1-5] It is highly prevalent in the environment, and infection has been reported from a wide variety of environmental sources.[6-8] Immunocompromised individuals, such as our patient, undergoing anti–tumor necrosis factor therapy are at increased risk for infection from all *Mycobacterium* species.[9-11] Recognizing these infections quickly is a priority for patient care, as *M abscessus* can lead to disseminated infection and high mortality rates.[1]

Histopathology of *M abscessus* consists of granulomatous inflammation with mixed granulomas[12]; however, these findings are not always appreciable, and staining does not always reveal visible organisms. In our patient, histopathology revealed patchy plasmalymphocytic infiltrates of the dermis and subcutaneous tissue, which are signs of generalized inflammation (Figure). Therefore, cultures positive for *M abscessus* are the gold standard for diagnosis and established the diagnosis in this case.

The differential diagnoses for our patient's ulceration included squamous cell carcinoma, pyoderma gangrenosum, aseptic abscess ulcer, and pyodermatitis-pyostomatitis vegetans. Immunosuppressive therapy is a risk factor for squamous cell carcinoma[13,14]; however, ulcerated squamous cell carcinoma typically presents with prominent everted edges with a necrotic tumor base.[15] Biopsy reveals cells with abundant eosinophilic cytoplasm, large nuclei, and variable keratin pearls.[16] Pyoderma gangrenosum is an inflammatory skin condition associated with Crohn disease and often is a diagnosis of exclusion characterized by neutrophilic infiltrates on biopsy.[17-19] Aseptic abscess ulcers are characterized by neutrophil-filled lesions that respond to corticosteroids but not antibiotics.[20] Pyodermatitis-pyostomatitis vegetans is a rare skin manifestation of inflammatory bowel disease associated with a pustular eruption of the skin and/or mouth. Histopathology reveals pustules within or below the epidermis with many eosinophils or neutrophils. Granulomas do not occur as in *M abscessus*.[21]

Treatment of *M abscessus* infection requires the co-administration of several antibiotics across multiple classes to ensure complete disease resolution. High rates of antibiotic resistance are characterized by at least partial resistance to almost every antibiotic; clarithromycin has near-complete efficacy, but resistant strains have started to emerge. Amikacin and cefoxitin are other antibiotics that have reported a resistance rate of less than 50%, but they are only effective 90% and 70% of the time, respectively.[1,22] The antibiotic omadacycline, which is approved by the US Food and Drug Administration to treat acute bacterial skin and soft-tissue infections, also may have utility in treating *M abscessus* infections.[23,24] Finally, phage therapy may offer a potential mode of treatment for this bacterium and was used to treat pulmonary infection in a patient with cystic fibrosis.[25] Despite these newer



A and B, Histopathology revealed patchy plasmalymphocytic infiltrates of the dermis and subcutaneous tissue (H&E, original magnifications ×40 and ×200).

innovations, the current standard of care involves clarithromycin or azithromycin in combination with a parenteral antibiotic such as cefoxitin, amikacin, or imipenem for at least 4 months.[1]

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