Our Dermatology Online

Case Report

A rare case of malignant pyoderma associated with ulcerative colitis both treated effectively with adalimumab

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ABSTRACT

Malignant pyoderma is considered to be an entity separate from pyoderma gangrenosum (PG). Scalp involvement in PG is rarely reported in patients with inflammatory bowel disease (IBD). An eighteen-year-old male with ulcerative colitis (UC) was admitted with occipital ulceration resistant to the usual antibiotic treatments. The patient later developed abdominal pain, bloody diarrhea, and fever. Histology was compatible with PG. Rectosigmoidoscopy revealed an acute UC flare-up. Given the absence of other infectious causes, a diagnosis of PG was retained. The patient was started on adalimumab at a dose of 80 mg. A positive response from the PG and the UC was observed after three weeks and complete healing of the ulcer after seven months. Our case shows the effectiveness of adalimumab in both diseases and suggests that the management of this type of pyoderma should be based on the control of the underlying IBD disease.

Key words: Pyoderma gangrenosum; Ulcerative Colitis; Adalimumab; Malignant Pyoderma; Scalp

INTRODUCTION

Pyoderma gangrenosum (PG) is a rare inflammatory ulcerative dermatosis characterized by neutrophilic dysfunction, genetic influence, and a strong link with other underlying conditions, most notably, inflammatory bowel disease (IBD), arthritis, and hematological disorders. It currently remains a diagnosis of exclusion due to the lack of verified and accepted diagnostic criteria.

Malignant pyoderma (MP), which is now considered an entity separate from PG, is characterized by the lack of a considerable benefit from antibiotics along with predominant head and neck involvement, the absence of surrounding erythema, and the aggressive course of the disease.

Therapeutic strategies have been based especially on immunosuppressive therapy, such as corticosteroids, azathioprine, and cyclosporine. Lately, several retrospective reviews and studies have reported the efficacy of biotherapy, such as infliximab and adalimumab [1].

Adalimumab, which is a human monoclonal antibody to tumor necrosis factor-α, has proved to be successful in the treatment of PG associated with ulcerative colitis (UC). We report a rare case of MP with UC, both treated effectively with adalimumab.

CASE REPORT

An eighteen-year-old male with a four-month history of UC was admitted to our department with cranial ulceration, which had been evolving for two months and which had been resistant to the usual antibiotic therapy. The patient was previously prescribed oral prednisolone and Salazopyrin. Despite this,

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the symptoms aggravated and the ulceration kept increasing in diameter. A physical examination revealed a large 8-cm occipital ulceration with indurated and undermined edges and a purulent base with slight bleeding from the ulcer bed (Fig. 1) extending from the right retroauricular region to the occipitoparietal area exposing the underlying tissue (Figs. 2a and 2b). Surprisingly, it was not sensitive on contact.

On palpation of the face and neck, no enlarged lymph nodes or other masses were found. Residual cribriform scars from previous ulcers were noted on the legs.

A biopsy including the border of the ulcer and the adjacent skin showed focal ulceration with mononuclear cell infiltration consisting predominantly of neutrophils with granulation tissue, which was in keeping with PG (Figs. 3a and 3b). Cultures were negative for bacterial, mycobacterial, and fungal infections. Wound swabs were positive for Pseudomonas aeruginosa, which was sensitive to the ceftazidime administered later. Viral swabs were negative.

Figure 1: The patient at the admission room.

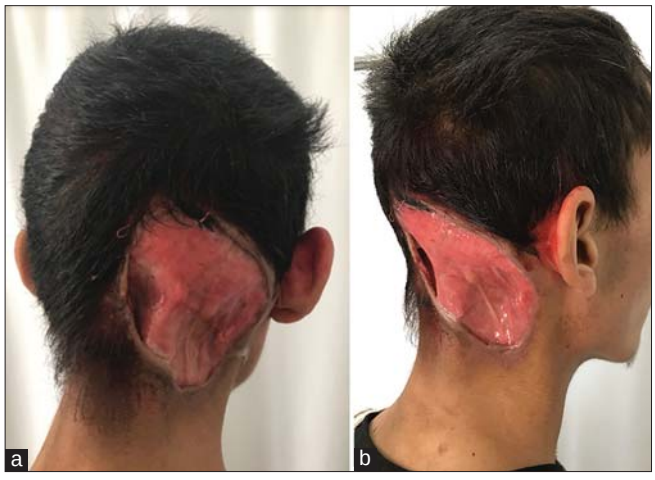

Figure 2: (a-b) The patient after carefully cleaning the wound, with the ulceration exposing the underlying tissues.

There was no presence of upper or lower airway symptoms. Other causes of ulcers were also excluded. Therefore—also, given the location of the PG and the absence of other infectious causes—the diagnosis of MP was retained. A radiological examination excluded osteolysis.

The PG was treated with both topical and oral steroids (prednisone at 1 mg/kg) as well as regular moist wound care.

On day two of admission, the patient developed ten episodes of bloody diarrhea associated with severe abdominal pain requiring urgent transfer to the Gastroenterology Department for control of the acute colitis crisis.

A second intestinal biopsy confirmed once more the diagnosis of UC and a rectosigmoidoscopy examination showed a macroscopic appearance compatible with a UC flare-up. A bolus of methylprednisolone was administered, which eventually effected partial remission. However, the PG kept increasing in diameter, reaching 11 cm in the longer axis within only eleven days.

Due to this clinical course, the patient was started on adalimumab administered subcutaneously at an induction dose of 80 mg every other week. Within 72 hours, an improvement was noted. The patient's pain improved drastically and the ulcer stopped progressing. A positive response of both the PG and the UC flare-up to the adalimumab was obtained in three weeks (Fig. 4). The steroids were then tapered off by 5 mg every three weeks and almost complete healing of the ulcer was observed in seven months (Fig. 5).

DISCUSSION

Malignant pyoderma (MP), which was described for the first time in 1968 as a new clinical entity by Perry et al., is now known as a variety of PG with an atypical location involving the head and neck [2].

Scalp involvement in PG is extremely rare. Approx. 50% of these patients have an underlying systemic disease, the most common being IBD, myeloproliferative disorders, and different forms of arthropathy [3].

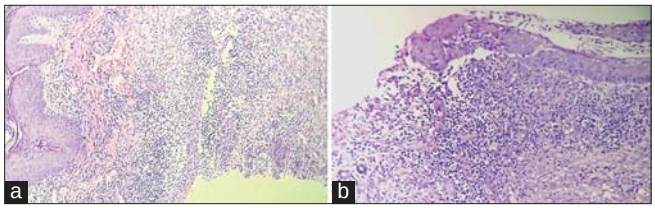

Figure 3: (a-b) A skin biopsy showing focal ulceration with mononuclear cell infiltration consisting predominantly of neutrophils with granulation tissue, which was in keeping with PG.

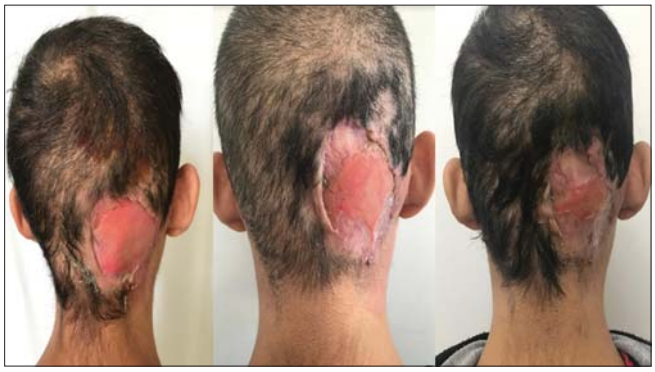

Figure 4: The evolution of the healing process after one month of initiating adalimumab.

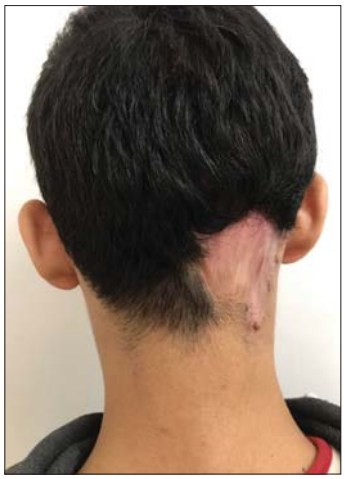

Figure 5: The complete healing of the ulceration after seven months, with scarring alopecia.

Ulcers in MP frequently begin as papulopustular lesions and evolve into destructive ulcers within a short lapse of time. They bear the typical appearance of irregular and undermined edges without the classical erythematous halo around them.

MP is a disease of young adults between the ages of 15 and 45 and is seen mostly in males. Although the ulcers are generally seen in the periauricular region, they may appear on any part of the body. In our case, no other parts of the body were involved upon physical examination, but cribriform scars on the limbs from previous ulcers suggested that that patient had developed PG on the lower body before the onset of the MP.

Although lesions in MP appear spontaneously, they may be induced or aggravated by trauma (pathergy). The evolution of the disease is progressive and chronic. In some cases of MP, temporary neurological dysfunction, such as cranial nerve palsies, sensorimotor loss, or even cranial osteolysis, has been reported [4]. We did not observe such symptoms in our case.

Although the exact nosological status of MP or PG, in general, remains unclear, its association with autoimmune diseases suggests the involvement of some dysregulation in the immune system. Immunohistochemical studies on PG ulcers have shown that myeloperoxidase—a neutrophilic marker—is highly expressed in the wound bed, whereas CD3 and CD163—a pan T cell marker and a macrophage marker, respectively—are significantly higher in the wound edge, which indicates that, other than neutrophilic cells, T cells and macrophages are also involved in the pathogenesis of this disease [5].

On the other hand, a simultaneous evolution of the two pathologies—UC and PG—is found in 50% of cases [6]. In our patient, the course of pyoderma was, indeed, concomitant with a colitis flare-up, suggesting that the increased activity of the underlying disease may have led to the appearance of the MP, especially as the significant improvement of the ulcer was noted as soon as the treatment of the UC was initiated.

Although MP generally responds to corticosteroid therapy, relapses often occur as soon as the dose is tapered off. Dapsone, azathioprine, and clofazimine may be given in combination with corticosteroids. Good results have also been reported with cyclophosphamide, thalidomide, and isotretinoin in some cases [5].

Several case reports and reviews on the efficacy of adalimumab in the treatment of PG with IBD have been reported [1]. In a recent study [7], data from thirteen patients with PG associated with UC was analyzed. All of the patients received adalimumab at an induction dose of 160 mg / 80 mg with a maintenance dose of 40 mg every other week, the median period going from the first injection of adalimumab to the end of the healing process, which was 1.25 months. The end of the healing process in our patient was in keeping with the review of the literature.

CONCLUSION

Adalimumab may be an alternative first-line treatment of MP, making it possible to avoid the severe side effects of the long-term use of corticosteroids. Therefore, clinical trials are needed to evaluate the efficacy and safety of adalimumab as a first-line treatment option for PG.

Our case demonstrates the effectiveness of adalimumab in treating MP and suggests that the management of this type of aggressive pyoderma is based on the control of the underlying IBD disease.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

REFERENCES

1. Vacas AS, Torre AC, Bollea-Garlatti ML, Warley F, Galimberti RL. Pyoderma gangrenosum: clinical characteristics, associated diseases, and responses to treatment in a retrospective cohort study of 31 patients. Int J Dermatol. 2017;56:386-91.
2. Lamouaffaq A, Gallouj S, Baybay H, Mernissi FZ. Idiopathic pyoderma gangrenosum. Our Dermatol Online. 2019;10:306-7.
3. Agrawal S, Singhania B. Pyoderma gangrenosum. BMJ Case Rep. 2010;2010:bcr0420102942.
4. Hali F, Khadir K, Chiheb S, Benchikhi H, Lakhdar H. Malignant pyoderma with cranial osteolysis. Ann Dermatol Venereol. 2009;136:522-5.
5. Erdi H, Anadolu R, Pişkin G, Gürgey E. Malignant pyoderma: clinical variant of pyoderma gangrenosum. Int J Dermatol. 1996;35:811-3.
6. Incel Uysal P, Gur Aksoy G, Yalcin B. Clinical fi ndings and outcomes in patients with pyoderma gangrenosum: a single tertiary centre experience. Our Dermatol Online. 2019;10:17-22.
7. Sagami S, Ueno Y, Tanaka S, Nagai K, Hayashi R, Chayama K. Successful use of adalimumab for treating pyoderma gangrenosum with ulcerative colitis under corticosteroid-tapering conditions. Intern Med. 2015;54:2167-72.

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