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Case Report

Conquering pyoderma gangrenosum: exploring non-steroidal treatment options

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ABSTRACT

Pyoderma gangrenosum (PG) is a rare neutrophilic dermatosis frequently related to chronic inflammatory bowel disease (IBD) and often associated with exacerbation of intestinal disease and/or loss of treatment efficacy. The mainstay of treatment is long-term immunosuppression, often with high doses of corticosteroids or low doses of ciclosporin. PG has been reported to respond to TNF alpha inhibitors. We report a patient of recalcitrant PG who responded very well to treatment with golimumab. A 61-year-old known case of PG since 4 years, who also had history of hypertension, pulmonary TB (treated), had been treated with dapsone, thalidomide, colchicine and corticosteroids in the past with partial response and frequent relapses. In February 2021, the patient while being on low-dose oral corticosteroids and colchicine, presented with large painful ulcer over back of his right thigh, which rapidly worsened. In agreement with the pulmonologist, the patient was started on Injection golimumab in addition to intravenous dexamethasone with slow tapering of steroid dosage following the improvement of the cutaneous lesion. Patient reported a near-total resolution of lesion after two doses. He is maintaining well with golimumab. PG can be poorly responsive despite adequate treatment with conventional modalities. High dose steroid therapy with all expected iatrogenic complications and treatment with cyclosporine in such an elderly patient with hypertension and history of tuberculosis seemed to be inappropriate. For all these reasons, a treatment with the TNF alpha inhibitor golimumab, appeared to be the most reasonable therapeutic choice for a patient.

Keywords: Pyoderma gangrenosum, TNF alpha inhibitors, Golimumab

INTRODUCTION

Pyoderma gangrenosum (PG) is a rare, ulcerating, neutrophilic dermatosis primarily affecting patients aged 25– 54 years, without a clear gender predilection.[1,2]

Pyoderma gangrenosum can be idiopathic or associated with systemic conditions like inflammatory bowel diseases (IBD), rheumatological disorders, and hematological malignancies. It can also occur in the setting of autoinflammatory syndromes such as pyogenic arthritis, pg and acne (PAPA); PG, acne, and suppurative hidradenitis (PASH); pyogenic arthritis, PG, acne, and suppurative hidradenitis (PAPASH); and synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO).[3,4] The pathomechanism of PG is complex and multifactorial. The inflammatory cascade (including IL-1β, TNF-α, IL-8, IL-23) play a central role in the pathogenesis. This is reflected in its association with IBD, aggressive local tissue destruction and the pathergy phenomenon.[5] This is further supported by the documentation of genes involved in inflammosome formation such as PSTPIP1, MEFV, NLRP3, NLRP12, and NOD2; in cases of PG. There are five subtypes of PG: classic (ulcerative), bullous, pustular, vegetative, and peristomal.[2] Cases of drug induced PG (secondary to isotretinoin and sunitinib) have also been reported.

Management depends on the extent of disease and the underlying comorbidities. Various suggested therapies

include use of systemic corticosteroids and other immunomodulatory drugs such as ciclosporin, dapsone, thalidomide, methotrexate, mycophenolate mofetil, azathioprine, and colchicine. Biological agents like infliximab and adalimumab have been commonly used in PG. Here we report a difficult to treat case of PG managed successfully with golimumab.

CASE REPORT

A 61-year-old male, biopsy proven case of PG was on regular follow-up at skin OPD for 4 years. During the course of disease, he had developed ulcers at multiple sites including chest, legs and thighs which healed with scarring. Patient had previously been treated with various medications like dapsone, thalidomide, colchicine and systemic corticosteroids (including pulse therapy) to which he had initially responded, but later developed new lesions. At the time of the presentation, patient was on maintenance therapy in the form of low dose of oral steroids and colchicine.

During this period, and while on ongoing medication, patient developed a large non-healing ulcer of size 12×18 cm on the posterior aspect of upper half of the right thigh (Figure 1). It started as an erythematous and painful lesion on the posterior right thigh which progressed to form a large ulcer. The upper half of the ulcer had red healthy granulation tissue while the lower part had yellowish slough along with copious amount of foul-smelling discharge. On palpation, the ulcer was indurated and tender. Local rise of temperature in the surrounding normal looking skin was present. There was history of worsening of ulcer following physical trauma to the area. There was no history of abdominal pain, bowel abnormalities, joint pain, morning stiffness, loss of weight or loss of appetite. Patient was a known case of Hypertension controlled on tablet cilnidipine and tablet telmisartan. He was also a previously treated case pulmonary tuberculosis (10 years back). He was also a smoker for past 25 years (smoking an average of 1 pack bidi/day).

Figure 1: Lesion at the time of presentation.

Keeping in mind patient's past history of recurrent difficult to manage lesions as well as history of pulmonary TB and hypertension, patient was planned for biologics in the form of anti-TNF alpha inhibitors.

For acute management of the non-healing ulcer, patient was admitted and started on injection dexamethasone 4 mg IV BD and IV antibiotics along with daily dressing and wound care. After two weeks, the ulcer improved in the form of reduced discharge and induration. Patient was switched to oral steroids, which were gradually tapered. After thorough workup and consultation with pulmonologist, injection golimumab 50 mg subcutaneous at 4 weekly intervals was instituted. Two weeks following the start of the therapy with injection golimumab, almost complete resolution of the cutaneous lesions with residual hyperpigmentation and scarring was observed (Figure 2). Thereafter, the patient was discharged on tablet methylprednisolone 4 mg OD in addition to injection golimumab. As of the last follow-up visit (32 weeks from the beginning of the treatment), patient has received 8 doses of injection golimumab. During this period, the patient has reported a considerable decrease in the frequency, duration, and severity of his lesions.

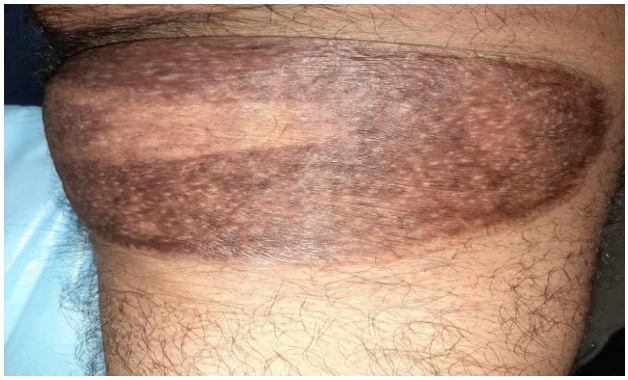

Figure 2: Lesion after two doses of injection golimumab.

DISCUSSION

PG can be poorly responsive despite adequate treatment with conventional modalities. The evidence of effectiveness and safety of available therapeutic options is limited due to paucity of large randomized clinical trials recording long term therapy in the disease.[6] Multiple modalities noted in the treatment are suggestive of difficulty in long-term remission with most of them. Subsidence of the inflammation leading to healing of ulcers, management of the associated disease, and prevention of recurrence while producing the minimal side effects are the goals of therapy. Topical therapy with super potent corticosteroids, tacrolimus, and adequate local wound care are the first line for limited cutaneous involvement.[7]

The second line that is used in extensive disease is high-dose steroid therapy and cyclosporine though effective, their side effects in this elderly patient with severe

hypertension and history of tuberculosis limits their indication in our case.

Considering all the therapeutic options, treatment with the TNF alpha inhibitor appeared to be the most reasonable therapeutic choice for our patient with severe hypertension and history of pulmonary tuberculosis, as the cost of therapy was not a limitation in our institute.

Several data have been reported in the literature on the efficacy of anti-TNF alpha in neutrophilic dermatoses including infliximab and adalimumab, however, these biologics are associated with the reactivation of latent tuberculosis.[8] Among the TNF alpha inhibitors, only rare cases of reactivation of latent tuberculosis are reported with golimumab without significant association making it a viable therapeutic option in our case, however, only little data focusing on the use of golimumab for therapeutic purposes is available.[9]

CONCLUSION

Given the therapeutic effectiveness of golimumab as observed in our case, studies with more cases need to be taken up to establish consistent results.

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REFERENCES

1. Powell FC, Schroeter AL, Su WP, Perry HO. Pyoderma gangrenosum: a review of 86 patients. Q J Med. 1985;55(217):173-86.
2. Powell FC, Su WP, Perry HO. Pyoderma gangrenosum: classification and management. J Am Acad Dermatol. 1996;34(3):395-409.
3. Cugno M, Borghi A, Marzano AV. PAPA, PASH and PAPASH syndromes: pathophysiology, presentation, and treatment. Am J Clin Dermatol. 2017;18(4):555-62.
4. Marzano AV, Borghi A, Meroni PL, Cugno M. Pyoderma gangrenosum and its syndromic forms: evidence for a link with autoinflammation. Br J Dermatol. 2016;175(5):882-91.
5. Burns T, Breathnach S, Cox N, Griffiths C. Rook's Textbook of Dermatology. Hoboken, NJ: Wiley-Blackwell. 2013.
6. Ormerod AD, Thomas KS, Craig FE, Mitchell E, Greenlaw N, Norrie J, et al. Comparison of the two most commonly used treatments for pyoderma gangrenosum: results of the STOP GAP randomised controlled trial. BMJ. 2015;350.
7. Thomas KS, Ormerod AD, Craig FE, Greenlaw N, Norrie J, Mitchell E, et al. Clinical outcomes and response of patients applying topical therapy for pyoderma gangrenosum: a prospective cohort study. J Am Acad Dermatol. 2016;75(5):940-9.
8. Dobler CC. Biologic agents and tuberculosis. Tuberculosis and Nontuberculous Mycobacterial Infections. 2017;623-35.
9. Diotallevi F, Campanati A, Radi G, Brisigotti V, Molinelli E, Brancorsini D, Offidani A. Pyoderma gangrenosum successfully treated with golimumab: case report and review of the literature. Dermatol Therap. 2019;32(4):e12928.

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