Case Report on pyoderma gangrenosum associated with Ulcerative Colitis

Anusha Narayanan¹, Rama P Venu², Roshni PR ¹*
¹Department of Pharmacy Practice, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, Ponekkara PO, Kochi-682041
²Department of Gastroenterology, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, Ponekkara PO, Kochi-682041

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ABSTRACT

Pyoderma gangrenosum is rare neutrophilic dermatoses that exist as inflammatory and ulcerative disorders of the skin and is neither an infectious nor gangrenous condition. It is commonly associated with an autoimmune disease like ulcerative colitis and crohn’s disease. It has an estimated incidence of 3-10 cases per million people per year. This is a case of a 28-year-old patient who was admitted with features of pyoderma gangrenosum: papule over the shin of the right leg which progressively increased in size. She had a history of ulcerative colitis and type 2 Diabetes mellitus and developed a papule in the right leg one month back which progressed to a larger ulcer and a similar lesion developing proximal to this. The lesions were painful, two lesions over the right tibial shin each measuring about 5x5cm, with erythema, pedal oedema and associated with fever and She was treated with antibiotics, steroids (hydrocortisone), cyclosporine and other supportive care. Daily dressing of the wound was done, and saline compresses were applied and was advised to continue the same after discharge. With the above measures, she improved clinically and was stable at discharge. As there is no diagnostic test for PG (since it is a diagnosis of exclusion) and if the disease is present but unrecognized, the results can be devastating. Hence timely onset of therapeutic approach is of utmost importance.

INTRODUCTION

Pyoderma gangrenosum (PG) is an uncommon dermatological condition which is identified by the rapid advancement of the painful necrotic ulcer which frequently affects the lower extremities. It is indicated by repetitive cutaneous ulceration with hemorrhagic exudate.1-2% patients with (Inflammatory bowel disorder) IBD has the chances of assimilating PG. Pain with hemorrhagic pustules, plaques, red papules, and immediately growing nodules is how the PG begins. It also causes ulceration with indefinite purple-coloured boundaries frequently on lower extremities (Andrisani et al., 2013). Pathogenesis of PG has not been discovered yet. But studies have proven that it is linked with abnormal T cell response and the production of TNF-α, which is a pathway involved in the pathogenesis of IBD. PG is related to IBD and rheumatic disorder in most cases. The occurrence of PG is generally seen on lower legs, mainly in the pretibial area. Other areas which have been noted to show the ulcers are breast, hand, trunk, neck and peristomal skin. The beginning of ulcer is with follicular pustule having...
rapid growth, necrosis of tissue and the expansion of the area. The neighbouring skin shows redness along with oedema. A strong perception of pain is often correlated with PG. 50% of patients diagnosed with PG has been proven to have an underlying disorder. Ulcerative colitis is seen in 10% of patients. Another close related disease which is seen in 3% of patients is crohn’s disease (Wollina, 2007; Argüelles-Arias et al., 2013).

Case Report
The 28-year-old patient is a known case of ulcerative colitis and type 2 diabetes mellitus presented with an abscess over the shin of the right leg, which progressively increased in size over the last five days. Two ulcerative lesions over the right tibial shin were found with each measuring about 5x5cms. A similar lesion also developed proximal to it. The lesions are painful and are associated with fever and chills. The patient was admitted with features of pyoderma gangrenosum. She was admitted here for further evaluation and management.

Investigations and Diagnosis
Laboratory reports showed elevated inflammatory markers and mild hypokalemia (2.7mEq/L). Initial blood tests revealed that the patient is anaemic (haemoglobin 8.2 g/dL). The platelet level was found to be 750ku/L. The value of C reactive protein increased from 20.96 on the first day to 87.48 on the second day. Her renal function test was normal, and liver function tests were slightly elevated from the normal level. (SGOT -3.2IU/L, SGPT-3.2IU/L).Wound swabs show the growth of the pathogen. Enterobacter cloacae complex was the isolated organism. Aerobic blood culture did not grow any pathogen (Table 1).

| Procedure                        | Impression                           |
|----------------------------------|--------------------------------------|
| 1. Barium meal follow-through    | Jejunisation of ileum                |
| 2. Ileal and colonic biopsies     | Inflammatory bowel disease           |
| 3. Clonoscopic biopsy            | Active chronic destructive colitis consistent with inflammatory bowel disease |
| a) Transverse colon              | Evidence of chronic destructive colitis |
| b) Rectum                        |                                       |

Table 1: Diagnosis of the disease

Lesions have a predisposition for lower limbs, but it can be seen in other sites. The occurrence of fever, malaise and arthralgia are associated with PG (Marinopoulos et al., 2017). Combination of systemic, topical therapy along with wound care is the treatment for PG. Every type of lesion requires proper wound care. For the wound healing to be effective, a moist environment should be maintained. It is crucial to observe the signs of infections. Topical immunotherapy is used to treat localized lesion while the combination with systemic therapy can be used for a severe lesion. Corticosteroids, tacrolimus, cyclosporine and 5-aminosalicylic acid are the commonly used topical therapy (Mithun and Harikrishnan, 2019). Cyclosporin and azathioprine are the cytotoxic agents used in the patient having IBD (Shahid et al., 2014).
CONCLUSIONS

The utmost importance is for the identification of pyoderma gangrenous. Patient history, physical examination and biopsy findings consistent with PG should be included inpatient evaluation to rule out the disease. For the diagnosis of malignant, tuberculous and fungal cause of disease, wound swab and biopsy are done. The signs and symptoms of PG vary from patients to patients. Combination of anti-inflammatory and immunosuppressive medications are the mainline treatment. Proper wound care and antimicrobial agents are used for secondary infections. Adequate treatment can reduce the morbidity associated with PG.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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