

CASE REPORT

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A case with pyoderma gangrenosum, after an abdominal surgery

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Abstract

Pyoderma gangrenosum (PG) is a pathergy positive, ulcerative neutrophilic dermatosis. Pathergy phenomenon is described as a sterile pustule and an ulcer development after minor skin traumas like a bump or bruise, or needlestick injury. In the literature, there are PG cases associated with the pathergy phenomenon on the post-surgical scar tissue. It presents as a necrotic and an ulcerative lesion clinically and, debridement is performed mostly with wrong pre-diagnoses. Debridement makes the lesion get wider and the morbidity increase. There are some PG case reports in the literature which were ended up with amputation due to debridement of a lesion which was an overlooked PG. Herein, we present a case with a giant abdominal pyoderma gangrenosum developed after a surgery in the abdominal drainage site and has reached to 30 cm size after debridement.

Keywords: Pyoderma gangrenosum, post-surgical pyoderma gangrenosum, debridement

Introduction

Pyoderma gangrenosum (PG) is a noninfectious, rare dermatological disease which causes ulcerative lesions. PG appears as papule and pustules, then it leads to exudative, deep, painful and violaceous ulcers with a sharp and irregular border [1]. Half of the cases are idiopathic although 50-70 % of them has inflammatory bowel disease, hematologic malignancy or rheumatic diseases among underlying reasons [2].

PG is a neutrophilic dermatosis and pathergy phenomenon is observed. Pathergy phenomenon is characterized by a sterile inflammation and ulcer development after some minor skin traumas such as a bump or venipuncture [3]. This phenomenon is observed also in Sweet syndrome, which is another neutrophilic disease, and in Behçet's disease. Neutrophil dysfunction and enhanced neutrophil activation are the possible reasons for migration of neutrophils to the epidermis and dermis which leads to pathergy positivity [4].

There are PG cases developed after surgery in the literature. These cases must be differentiated from the diseases requiring debridement like necrotizing fasciitis due to the similar necrotic and ulcerated appearance because debridement in PG may activate the lesion and makes the risk of permanent damage higher [5].

Case Presentation

A 66 year-old male patient has been consulted to dermatology clinic because of his ulcerated wound in the abdominal region on 7th. day of his hospitalization in the surgery service due to an abdominal surgery. At the dermatological examination, there was a painful ulcer with an erythematous, sharp and irregular border. The lesion was 30x20 cm in size in the right lower quadrant of the abdomen and it had a necrotic and yellowish exudative appearance in some parts (Picture 1). The patient had undergone a segmental ileal resection surgery 19 days ago because of acute abdomen findings. The current complaints have started after 4 days of the surgery as a small wound around the surgical drain. During the follow-up, on the 12th. postoperative day, he has been hospitalized in the surgery service with the prediagnosis of wound infection and has debridement treatment. Afterward, the wound became an ulcer which was wider and deeper. Laboratory test results were

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as following: WBC: 4,6x10⁹/L, HGB:6,7 gr/dl, CRP: 17,2 mg/dL, creatinine: 1,51 mg/dl and albumin: 1,9 g/dl. Microbiological wound and blood culture result were negative. Thereafter, prophylactic ceftriaxone and ornidazole treatment have been started but the patient had still fever, so he has been consulted to the department of infectious diseases and the antibiotherapy was substituted by piperacillin and tazobactam treatment. Four days later the treatment was changed again because of ineffectiveness to meropenem and linezolid treatment and the patient was consulted to the dermatology clinic. A skin biopsy performed and also we learned that he had myelodysplastic syndrome in his past medical history and he has been followed up without treatment. In brief, the patient didn't answer to multiple antibiotherapy, his culture results were negative, he had a suspicion of malignancy in his medical history and his lesion was compatible with PG. By this way, 60 mg systemic steroid and topical betamethasone and gentamycin combination treatment has been started, after 1 week, a dramatic improvement was observed in the lesion (Picture 2). The biopsy resulted later and it revealed abscess formation and densely mixed inflammation extending along the subcutaneous fat tissue. A topical epithelializing agent was added to treatment and the steroid treatment was tapered to zero ensuing 3 weeks. After the treatment, full remission has been reached with only a cribriform scar in the lesions place (Picture 3). An informed consent has been taken from the patient to be allowed to share his pictures and medical data in any of medical journals and meetings.



Figure 3. Full epithelisation at the 3rd. week of the treatment

Discussion

PG is correlated with inflammatory bowel diseases, hematologic malignities, rheumatic diseases and liver diseases such as chronic active hepatitis, primary sclerosing cholangitis, primary biliary cirrhosis in the rate of 50-70% [6]. This case had also the myelodysplastic syndrome. It's very important to have a detailed medical history of the patients with recalcitrant, ulcerated lesions in terms of pathergy positivity and a past history of PG and the history of the diseases which could be related to PG so that a correct and timely diagnosis can be made [5].

The rate of pathergy positivity in PG is 30%. Pathergy positivity may be caused by debridement and surgery procedures besides any minor trauma. Surgery-associated PG cases are seen mostly after abdominal and breast surgeries [6]. There are some PG lesions reported on the chest wall after by-pass surgery, on the scar of episiotomy, around the gastrostomy tube and on the hand after the surgery for carpal tunnel syndrome [1,3,5,6]. PG development duration is approximately 7 days after a surgery [2], but the duration for an exact diagnosis might be as long as 28 months [7]. There are 220 cases of surgery-associated PG cases in the literature, but, it's considered that this number is not reflecting the true number of cases because of difficulties in making the correct diagnosis and lots of patients who have been followed up with wrong diagnoses [5]. The lesion had been noticed on the 4th. postoperative day in our case.

The lack of objective diagnostic criteria makes PG a diagnosis of exclusion and the diagnosis is made based on histoclinicopathologic findings [1]. Histopathologically, epidermal necrosis, dense neutrophilic inflammation and abscess formation may be seen [7].

Presence of actively inflamed violaceous borders, exudative discharge, and necrotizing ulcerative lesion makes the differential diagnosis wider including necrotizing soft tissue infections. Actively inflamed violaceous border, negative culture results and neutrophil accumulation in the histopathologic evaluation are important supportive features for the diagnosis of PG [2].

The most important step of the treatment includes making the correct diagnosis which enables avoiding unnecessary debridement and protecting the tissue from minor traumas. Topical and systemic



Figure 1. Ulcerated wound after surgery



Figure 2. Clinical improvement at the first week of the treatment

steroids, cyclosporine and dapsone are the treatment options. Also, PG cases who were successfully treated with intravenous immunoglobulin and anti-TNF agents have been reported in the literature [8].

The exact cause of pyoderma gangrenosum is not known; however, there are cases with PG which has been developed after by-pass, splenectomy, episiotomy, thoracostomy and gastrostomy. In our case, the wound with surgical sutures had been closed without any problem and apart from that, a small PG lesion had been developed around the surgical drainage tube. There aren't enough studies which could clarify the good wound healing on the sutured skin but a PG development around the drainage tube in this patient.

Conclusion

PG should also be kept in mind in necrotic and ulcerative lesions developing after surgeries, besides infectious reasons. Especially, the history of the patient about unhealing wounds or concomitant diseases is important. An early dermatologic consultation is required in ulcerated lesions which are unresponsive to antibiotherapy in terms of avoiding unnecessary debridement and permanent damage.

Competing interests

The authors declare that they have no competing interest

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