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Case Report / Olgu Sunumu

An unexpected and rare complication after endovenous laser ablation: Pyoderma gangrenosum

Endovenöz lazer ablasyonu sonrası beklenmedik ve nadir bir komplikasyon: Piyoderma gangrenozum

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ABSTRACT

Pyoderma gangrenosum is a rare inflammatory ulcerative skin disease characterized by painful, progressive necrosis of wound margins. A 34-year-old male patient was admitted to our clinic with progressive ulcerative lesion at the wound site after endovenous laser ablation and varicose vein surgery. Although parenteral antibiotherapy was initiated with the diagnosis of wound infection, rapid progression was observed in the lesion. Skin biopsy was performed, and the patient was started on empirical prednisolone treatment with the diagnosis of pyoderma gangrenosum. Complete healing was achieved in the lesion. In conclusion, pyoderma gangrenosum should be considered in the differential diagnosis of postoperative delayed wound healing.

Keywords: Pyoderma gangrenosum, steroid, ulcer.

ÖZ

Piyoderma gangrenozum, nadir görülen bir enflamatuvar ülseratif cilt hastalığı olup, yara marjlarının ağrılı ilerleyici nekrozu ile karakterizedir. Otuz yaşında erkek hasta, endovenöz lazer ablasyonu ve variköz ven cerrahisi sonrası yara bölgesinde ilerleyici ülseratif lezyon nedeni ile kliniğimize başvurdu. Yara enfeksiyonu tanısı ile parenteral antibiyotik tedavisine başlanmasına rağmen, lezyonda hızlı progresyon gözlendi. Deri biyopsisi yapıldı ve hastaya piyoderma gangrenozum tanısı ile ampirik prednizolon tedavisi başlandı. Lezyonda tam iyileşme sağlandı. Sonuç olarak, ameliyat sonrası gecikmiş yara iyileşmesinin ayırıcı tanısında piyoderma gangrenozum akılda tutulmalıdır.

Anahtar sözcükler: Piyoderma gangrenozum, steroid, ülser.

Pyoderma gangrenosum (PG) is a rare inflammatory skin disease of unknown etiology.[1] The etiology is primarily thought to be immune system disorder. It is a rare condition which causes large, painful ulcers in the lower extremities. Patients with certain underlying diseases, such as inflammatory bowel disease or arthritis, have a higher risk of PG.[2] Pyoderma gangrenosum ulcer may develop rapidly. It is usually treatable, but scarring and relapses are common. Accurate differential diagnosis is important and prompt treatment decreases morbidity. Postoperative PG is an interesting clinical condition which can be seen after any surgical procedure characterized by rapidly progressing necrosis of the skin.[3] In certain cases, diagnosis and treatment may be life-threatening and cause serious tissue loss.

Herein, we present a rare case of PG in an adult patient following endovascular laser ablation and varicose vein excision and emphasize the importance of rapid diagnosis and treatment.

CASE REPORT

A 34-year-old male patient was treated with lower extremity endovenous laser ablation and varicose vein excision with the diagnosis of superficial venous insufficiency. On postoperative Day 10, he was admitted to our hospital for stitch removal. His physical examination was normal. There was no history of a known comorbidity. He had no history of previous illnesses, such as inflammatory bowel disease, arthritis, or hematological diseases. On postoperative

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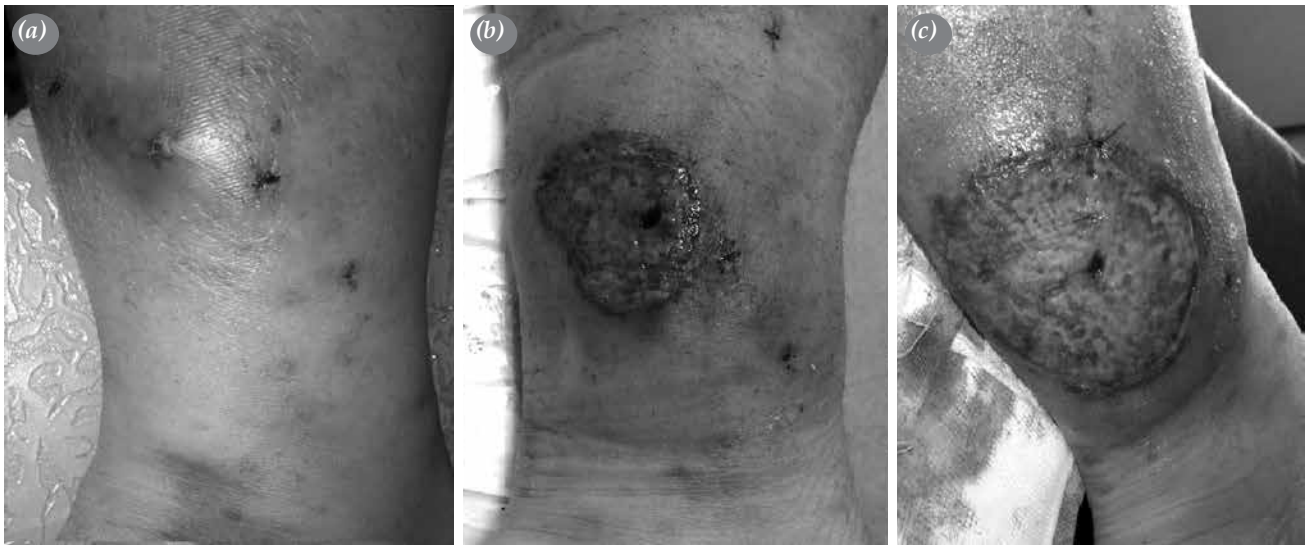

Figure 1. (a) First lesion formation on medial malleolus in postoperative period. **(b)** Expansion of the lesion with ulceration. **(c)** Rapid deterioration of lesion with epidermal necrosis.

Day 12, a lesion occurred in the medial malleolus of the ankle in the incision site for excision of varicose vein (Figure 1a).

The patient was treated with systemic antimicrobial treatment after a preliminary diagnosis of surgical wound infection. Despite wound healing, parenteral antibiotic therapy, and recurrent surgical debridement, there was no improvement in the wound site and there was a rapid deterioration and spread of the lesion (Figure 1b). Blood and wound cultures were negative for any pathogen. Despite dual antibiotic therapy (piperacillin/tazobactam and daptomycin), the lesion continued to expand on the epidermis with epidermis necrosis (Figure 1c). Due to enlarged lesion, skin biopsy was performed and the wound culture was

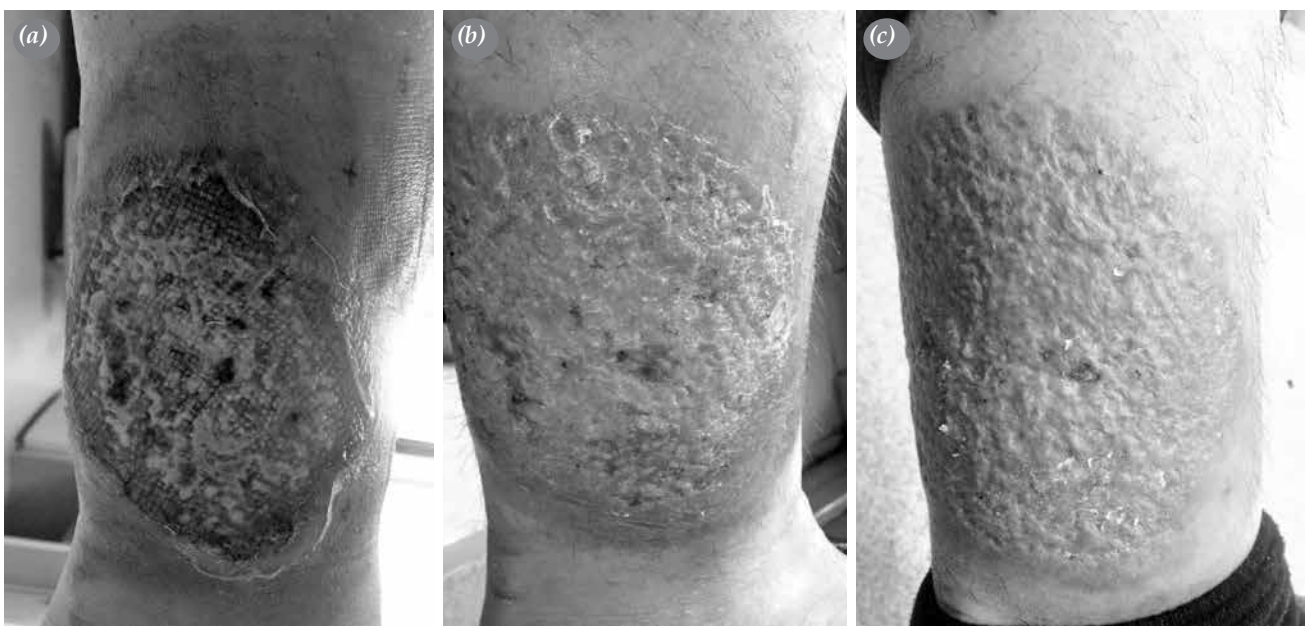

Figure 2. (a) Enlargement of lesion was stopped, when steroid treatment was initiated with a preliminary diagnosis of pyoderma gangrenosum. **(b)** Lesion continued to shrink with ongoing steroid treatment. **(c)** Remnant scar tissue resulting from complete healing of the lesion.

repeated. The wound culture resulted in two consecutive negative, and oral prednisolone tablet 10 mg/day was initiated with the preliminary diagnosis of PG. To investigate the underlying etiology of PG, the patient underwent abdominal ultrasound, colonoscopy, uveitis scan, and peripheral blood smear. No pathological findings were found. The human leukocyte antigen (HLA)-B5 was positive, while HLA-B27 was negative. Three days after the initiation of steroid treatment, progression of the necrosis in the epidermis stopped and wound healing began (Figure 2a). The antibiotic treatment was switched to prophylactic treatment. Skin biopsy resulted in extensive neutrophilic inflammation and dermal lysis in the upper dermis, compatible with PG. The lesion was better after a few days (Figure 2b). The patient was discharged with complete healing three weeks after hospitalization (Figure 2c).

A written informed consent was obtained from the patient.

DISCUSSION

Pyoderma gangrenosum is an idiopathic neutrophilic dermatosis, first described in 1930 by Brunsting et al.,[4] and it is a rare disease with an annual incidence of 3 to 10 per million.[5] It typically begins with rapidly expanding and deteriorating papules and pustules and, then, form a painful, non-infectious ulcer with a central necrosis region. Nearly half of patients have associated systemic disorders such as inflammatory bowel disease, diverticulitis, hematological and rheumatic conditions, hepatopathy, malignancies, and immune-mediated conditions.[6] Pyoderma gangrenosum may occur spontaneously or as a result of trauma or postoperative pathergy phenomenon. Many patients develop skin lesions with the most recent affected area by a trauma, which is known as pathergy phenomenon.[6] It has been also suggested that mild skin trauma may initiate PG process.[7]

In addition, PG may develop secondary to any surgical intervention. Autoimmunity, inflammation, and pathergy are the three main mechanisms in the development of the disease. Vascular damage due to neutrophil chemotaxis caused by immunocomplexes plays an important role in the pathogenesis.[7] Hematological malignancies such as acute myeloid leukemia, myelodysplasia, monoclonal gammopathies; ulcerative colitis, Crohn's disease, and seropositive and seronegative arthritis are among the risk factors. This complication has been very rarely reported in the literature and limited to a few case reports after appendectomy and mastectomy.[7] In these reports, the initial shape and wound characteristics and post-treatment healing period were similar to our case. To the best of our knowledge, there is no case report described in the literature after venous surgery. In general, this complication may occur in undiagnosed patients; therefore, it is challenging to take any precautions. However, immunosuppressive treatments are recommended as surgical prophylaxis in patients with known PG.[7]

Owing to technological developments in recent years, a variety of surgical techniques have been described. These procedures mainly include endovenous laser ablation, radiofrequency ablation, and sclerotherapy.[7] Many complications may also occur after venous surgery, and PG is an unexpected complication.

Postoperative PG represents a specific entity. It shares some of the clinical aspects of PG, but it has a number of unique features, as well. Following the evolution of a normal scar formation after a surgical procedure, the scar is associated with small incremental foci which merge with some increasingly wound ulceration zones. The delay between surgery and onset of symptoms may vary from four days to six weeks.[8] Despite any local treatment or antibiotherapy and debridement, skin ulcers become larger. A delay in diagnosis is associated with a high mortality rate. Thus, recognition of postoperative PG may be helpful for early diagnosis and treatment to prevent morbidities. A patient or family history of inflammatory bowel disease, rheumatoid arthritis, hematological dysplasia, or autoinflammatory syndromes and female gender for breast or abdominal surgery may pose an increased risk for postoperative PG.[8] The use of perioperative systemic corticosteroids or immunomodulators should still be discussed, if surgery is indicated in high-risk patients. Postoperative PG should be kept in mind in the differential diagnosis of postoperative wounds. In most cases, false wound debridement leads to serious wound infections, making the problem worse.

In conclusion, postoperative complications can be encountered in all surgeries. The most common surgical complications include wound infections; however, pyoderma gangrenosum is a pathology which should not be missed in the differential diagnosis of persistent and atypical lesions unresponsive to treatment. As this case is the first to report pyoderma gangrenosum after venous surgery, we believe that it would provide an insight into the diagnosis and treatment of this rare complication.

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