

Pyoderma gangrenosum and ulcerative colitis in the tropics

Pododerma gangrenoso e colite ulcerativa nos trópicos

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ABSTRACT

Pyoderma gangrenosum is a rare inflammatory skin condition, characterized by progressive and recurrent skin ulceration. There may be rapidly enlarging, painful ulcers with undermined edges and a necrotic, hemorrhagic base. Disorders classically associated with pyoderma gangrenosum include rheumatoid arthritis, inflammatory bowel disease, paraproteinemia and myeloproliferative disorders. There have been some reports of the occurrence of pyoderma gangrenosum in Africa, and in Nigeria, but only one specifically reported pyoderma gangrenosum in association with ulcerative colitis. We report on a 45-year-old man who presented with pyoderma gangrenosum associated with ulcerative colitis; the second report in Nigeria. The skin lesions were managed with daily honey wound dressings. Oral dapsone and prednisolone were started. The frequency of the bloody diarrhea decreased, and was completely resolved by the second week after admission. The ulcers also showed accelerated healing. The goal of therapy is directed towards the associated systemic disorder, if present.

Key-words: Pyoderma gangrenosum. Rectal bleeding. Bloody diarrhea. Colitis.

RESUMO

Pododerma gangrenoso é uma rara forma de inflamação dermatológica, caracterizada por ulceração progressiva e recorrente da pele. Pode ocorrer rápida formação de úlceras dolorosas expansivas, com bordas solapadas e base necrótica e hemorrágica. Condições classicamente associadas com pododerma gangrenoso incluem artrite reumatóide, doença inflamatória intestinal, paraproteinemia e doenças mieloproliferativas. Existem alguns relatos da ocorrência de pododerma gangrenoso na África e na Nigéria, mas apenas um relato específico da associação de pododerma gangrenoso e colite ulcerativa. Os autores relatam o caso de um homem de 45 anos que apresentou pododerma gangrenoso associado a colite ulcerativa, sendo este o segundo relato na Nigéria. As lesões de pele foram tratadas com curativos diários de mel. Foram utilizadas dapsona e prednisona via oral. A frequência de diarreia sanguinolenta diminuiu e se resolveu completamente até a segunda semana após a admissão. As úlceras também mostraram rápida cicatrização. A meta do tratamento deve abordar também a doença sistêmica associada, quando presente.

Palavras-chaves: Pododerma gangrenoso. Sangramento retal. Diarreia sanguinolenta. Colite.

Pyoderma gangrenosum is a type of painful cutaneous ulcer associated with an underlying systemic disease in the majority of cases (including inflammatory bowel disease)⁶. It is a rare inflammatory skin condition, characterized by progressive and recurrent skin ulceration, often representing a pathergy response²⁰.

CASE REPORT

A 45-year-old man presented with a one-month history of rectal bleeding and a one-week history of lower abdominal pain in the suprapubic region and left iliac fossa. He started passing mucoid, bloody and watery stools two weeks prior to presentation. He also had low-grade fever for a week and vomiting of two days duration; the vomitus contained recently ingested meals, but there

was no hematemesis, nausea or abdominal swelling. He had taken alternative medical therapy with no relief. There was no history of intercurrent chronic medical illness.

Examination showed that this middle-aged man was not febrile or pale, but was dehydrated. The abdomen was full, and soft with mild suprapubic tenderness. There was no rigidity or rebound tenderness, and no palpable abdominal masses or organomegaly. The bowel sounds were normal. Digital rectal examination revealed perianal fecal soilage and second-degree external hemorrhoids at 6 and 9 o'clock. The rectal mucosa was edematous and tender, no definite mass was felt and the rectum was empty. The prostate gland was not enlarged, while the gloved finger was stained with brown stool.

A diagnosis of second-degree external hemorrhoids with proctitis was made. He had a white cell count of 4,600/mm³;

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neutrophils (64%), lymphocytes (28%) and monocytes (8%); and a platelet count of $261,000/\text{mm}^3$. A peripheral blood film showed anisocytosis, microcytosis and hypochromia. The packed cell volume, urinalysis, serum electrolytes and urea were normal. Stool microscopy was negative, as was retroviral and hepatitis B surface antigen screening. The results from an abdominal ultrasound scan were normal. He was admitted to hospital and placed on intravenous antibiotics (ciprofloxacin and metronidazole).

He underwent flexible sigmoidoscopy, which revealed two ulcers at 15cm and 10cm from the anal verge. In the descending colon, there was patchy mucosal ulceration, covered with slough and intervening raised plaques, but not occluding the rectal lumen. Biopsies were reported by the pathologists as showing *nonspecific acute inflammation that might be seen in early cases of ulcerative colitis*.

By the seventh day after admission, he had developed superficial ulcerative lesions on the dorsum of the right hand and on the neck and scalp. However, the lesions widened within a few days and new lesions arose on the right gluteus, right inguinal region and left leg. The diagnosis of pyoderma gangrenosum was made, strengthened by the association with ulcerative colitis, with a differential diagnosis of Behcet's disease. Other investigations included a negative Venereal Disease Research Laboratory (VDRL) test and a reactive Mantoux test (18mm x 20mm). Random blood sugar was normal. Wound biopsy culturing yielded no growth. Wound biopsy histological examination showed chronic inflammation.

The lesions were managed with daily honey wound dressings. Oral dapsone 100mg daily and prednisolone 60mg daily were started. The frequency of the bloody diarrhea decreased, and was completely resolved by the second week after admission. The lesions started healing and the patient was discharged with a prescription of daily honey dressing and oral prednisolone 60mg daily. He has continued to improve in the surgical outpatient clinic, and the prednisolone is being tapered down.

DISCUSSION

Pyoderma gangrenosum is an uncommon type of cutaneous ulceration that continues to be a difficult disorder to diagnose and treat¹¹. It is a neutrophilic dermatosis associated in 70% of the cases with underlying systemic diseases such as inflammatory bowel disease (IBD), rheumatoid arthritis (RA), monoclonal gammopathy or malignancy^{16 19}. The pathogenesis of pyoderma gangrenosum is unknown, although a partial defect of cell-mediated immunity may exist⁵. Other pathophysiological explanations contemplated include immune dysregulation (including defects in neutrophil chemotaxis), neutrophil hyperreactivity and overexpression of cytokines such as interleukin-8⁶.

There have been some reports of the occurrence of pyoderma gangrenosum in Africa⁹, and in Nigeria^{1 2 15}, but only one case of specifically reported pyoderma gangrenosum in association with ulcerative colitis¹. The classical presentation is the development of an erythematous papule or pustule that breaks down to

form an ulcer with purulent discharge and violaceous colored borders spreading peripherally and overhanging the ulcer bed. Alternatively, they may be rapidly enlarging, painful ulcers with purple, undermined edges and a necrotic, hemorrhagic base¹³. Although there is no mention of laterality in the literature perused, it was noted that most of our patient's lesions occurred on the right side of his body (Figures 1, 2, 3, 4 and 5). The significance of this phenomenon is unclear at present. The disorders classically associated with pyoderma gangrenosum are seropositive or seronegative rheumatoid arthritis⁷, inflammatory bowel disease²¹, paraproteinemia²² and myeloproliferative disorders¹². However, it might follow operations such as caesarean delivery¹², abdominal operations (e.g. patients with inflammatory bowel disease following peristomal colostomy)⁵, breast reduction⁸, hysterectomy and salpingo-oophorectomy (on account of uterine fibroids)¹⁰, cystectomy (for endometrioma)⁴ or vulvar pyoderma gangrenosum¹⁸.



Figure 1 - Right inguinal ulcer.



Figure 2 - Right gluteal ulcers.



Figure 3 - Right hand ulcer.



Figure 4 - Neck ulcers.



Figure 5 - Scalp ulcers, also on the right side.

The histological and laboratory findings are nonspecific, but neutrophilic leukocytosis and elevated erythrocyte sedimentation rate are often found³. Biopsy of an early lesion of pyoderma gangrenosum often demonstrates a dermal neutrophilic abscess. Later-stage lesions show epidermal necrosis and ulceration, superficial dermal edema and a dense, mixed dermal infiltrate that may extend to the panniculus. Histological examination of the advancing, inflamed border reveals dense perivascular lymphocytic inflammation, which may at times be associated

with vascular destruction. None of these histological features is however pathognomonic¹⁷.

Misdiagnosis of pyoderma gangrenosum is not uncommon. It may be mistaken for vascular occlusive or venous disease, vasculitis, cancer, primary infection, drug-induced or exogenous tissue injury and other inflammatory disorders¹⁷.

The treatment includes bed rest, local care, sulfonamides, sulfones and corticosteroids. The goal of therapy is directed towards the associated systemic disorder, if present. High dosages of oral glucocorticoids, sulfasalazine and systemic antibiotics, together with daily wound care, are usually instituted once the diagnosis is suspected¹³. When these fail, high-dose intravenous immunoglobulins represent a therapeutic alternative¹⁴. There are reports of successful treatment with etanercept, and a randomized controlled trial using infliximab has been conducted⁶. There has been a patient who failed numerous trials of various other immunosuppressive and immunomodulatory regimens, but responded to treatment with adalimumab, which is a fully humanized monoclonal antibody specific for TNF- α ⁶.

Nonetheless, the management of pyoderma gangrenosum continues to be a therapeutic challenge, especially in a tropical population of low socioeconomic level where second-line drugs may not be available.

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