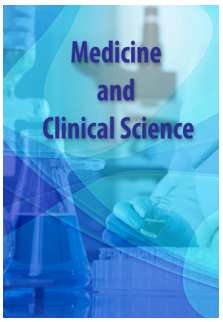
Medicine & Clinical Science

Case Report



When The Cart Is Before The Horses - Pyoderma Gangrenosum As Preceding Idiopathic Ulcerative Colitis: First Report in Gambia

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Abstract

Chronic inflammatory bowel disease is characterized by a plethora of intestinal and extra-intestinal manifestations, and it is not difficult to establish its diagnosis when all the elements are present; however, when the extra-intestinal manifestations precede and are more severe than the intestinal symptoms themselves, then it becomes a diagnostic challenge, delaying treatment, affecting quality of life, and darkening its prognosis. We report a case with six-months onset of necrotic ulcerative lesions, compatible with severe pyoderma gangrenosum, as the first and only manifestation of the disease during first four months, with only and vague symptoms of intestinal manifestations such as abdominal pain, and diarrhea with phlegm and rarely with blood last two months. Diagnosis of ulcerative colitis was established through colonoscopy, with the biopsy being non-specific in the diagnosis of colitis. The response of the dermatological manifestations was spectacular to conventional therapy with steroids and salicylates.

İntroduction

26-year-old woman, married with three children, previously healthy. Six months ago, she began to present skin lesions on his upper and lower limbs, which quickly turned septic and painful. Some were partially cured, but others persisted, even getting worse. During this period, she has lost 7 kg of weight, loss of appetite, tiredness and diffuse hair loss which has turned dry. In the last two months, she has been presenting intermittent episodes of diarrhea with phlegm, and a few times with traces of blood, for which he has received recurrent treatments with ciprofloxacin and metronidazole without real improvement. On physical examination, appears chronically ill, with marked weight loss. Purulent wounds, with dirty fundus, active bleeding, irregular edges, and of variable sizes, some greater than 3 cm in diameter, involving upper and lower extremities (Figures 1 and 2).

Oral and ocular mucosa appear pale, aside from previously described skin lesions, the rest of the physical examination was negative.

Vital signs

HR 100beats/min; BP 106/77mmhg; RR 22cycles/min; O2 sat: 96%; Temp: 36.80 C.

Investigations

Hb: 8.7 g/dl	ASAT/ ALAT/ GGT: Normal	Wound swabs did not grow any pathogen
WCC: 12.5x109/l	Albumin: 21 g/l	Colonoscopy: Compatible with ulcerative colitis
ESR: 105 mm/h	Urea/Creatinine: Normal	Coloscopy biopsy: Inflammatory Colitis (Figure 4)
CRP:85 mg/l	CEA: Negative	Skin Biopsy: Neutrophilic inflammatory infiltrate
VDR: Negative	ANA: Negative	
HIV(Negative)	Stool MCS: Negative	

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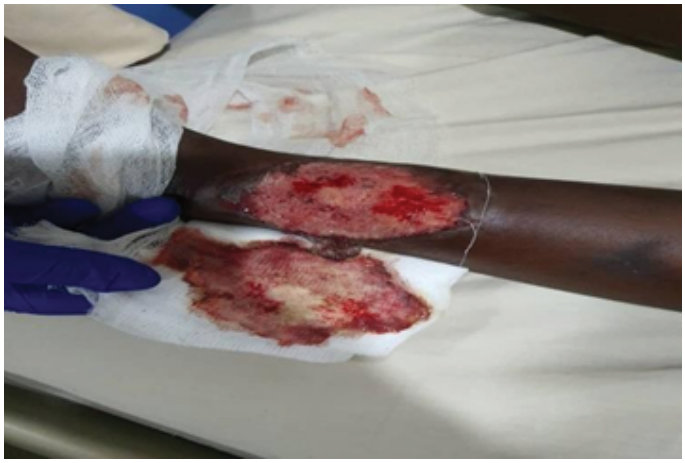

Figure 1. *Large ulcer on the front side of the right leg.*

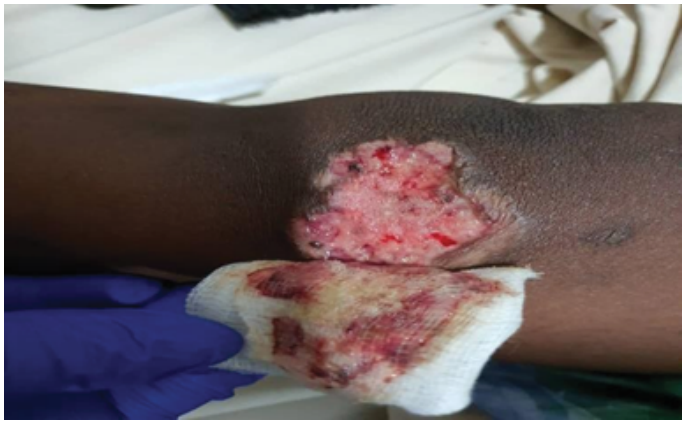

Figure 2. *Large ulcer on the right knee*

Discussion

Pyoderma gangrenosum (PG) first described by Brunsting, Goeckerman and O'Leary in 1930 Initially, mistakenly believed that its cause was infectious, which is why was called "pyoderma" [1]. Universally is consider as autoinflammatory non-infectious neutrophilic dermatosis and includes Sweet's syndrome and Behcet's syndrome [2-4] characterized by recurrent skin ulcers with mucopurulent or hemorrhagic exudate, which can be reactive or associated in 50% of cases to multiple systemic diseases. PG has an annual incidence of up to ten per million, is the most severe cutaneous extraintestinal manifestation seen in inflammatory bowel diseases, and it is more frequent in women than men in up to 76% of cases [5-7]. Lesions are often diagnosed as non-healing ulcers and patients undergo debridement, which can lead to catastrophic deterioration through hyper pathergy response and affects lower limbs, usually ulcerative type.

Approximately 85% of cases are ulcerative type, other subtypes also included: Bullous, Vegetative, Pustular, Peristomal, and Superficial granulomatous variants [8-10]. The different subtypes sometimes change from one to another and remain a clinical difficult diagnosis, in addition is necessary to rule out other causes of skin ulcers such as arterial and venous diseases, hematological causes (sickle cell disease, cryoglobulinemia and antiphospholipid syndrome), vascular occlusion, vasculitis, infections, calciphylaxis, drug-induced ulcers, primary or metastatic tumors, and Martorell ulcer [11]. PG diagnosis is based on the pattern recognition of the skin lesions.

In our case, the diagnostic difficulty came because skin involvement began long before enteric manifestations, this onset is not commonly reported in reviewed bibliography [12], evidencing deficiencies to establish a link as dermopathies of systemic origin, "putting the cart before the horse", with diagnostic delay, worsen the outcome, and affecting the quality of life of the patient. However, all the roads led to Rome. Pyoderma gangrenosum is a diagnosis of exclusion both clinically and histologically, without specific histologic features

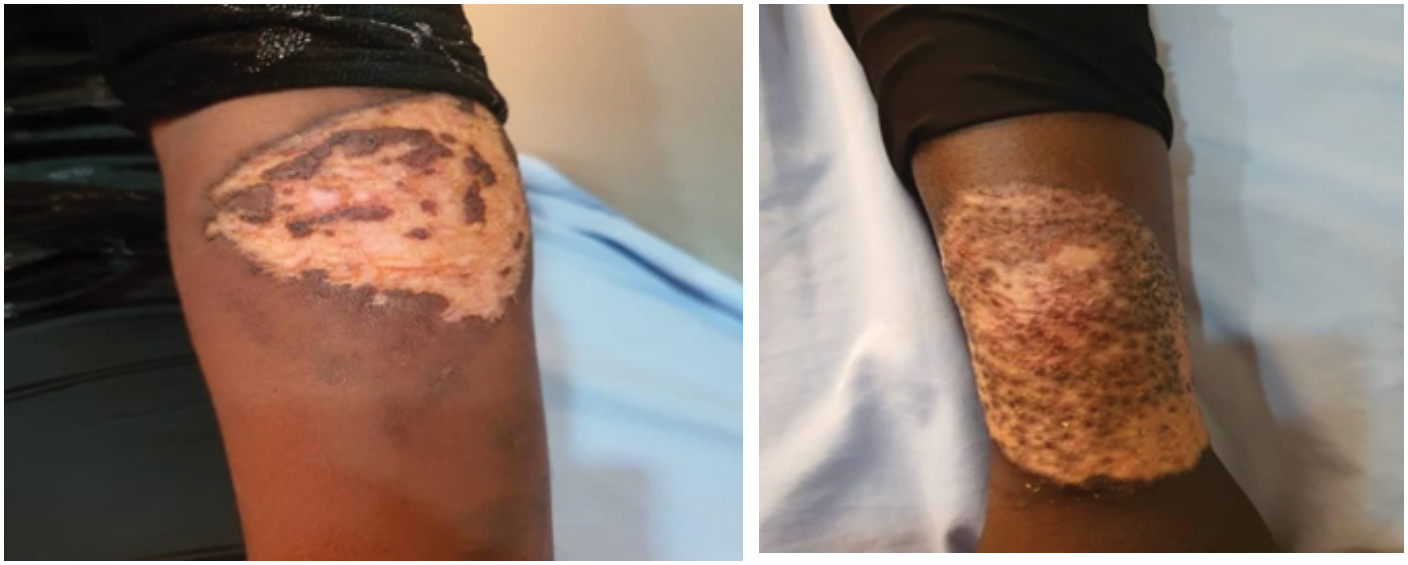

Figure 3. *Multiple scars from previous skin lesions. Scarring lesions with the appearance of crinkled paper scars at sites of healed ulcers.*

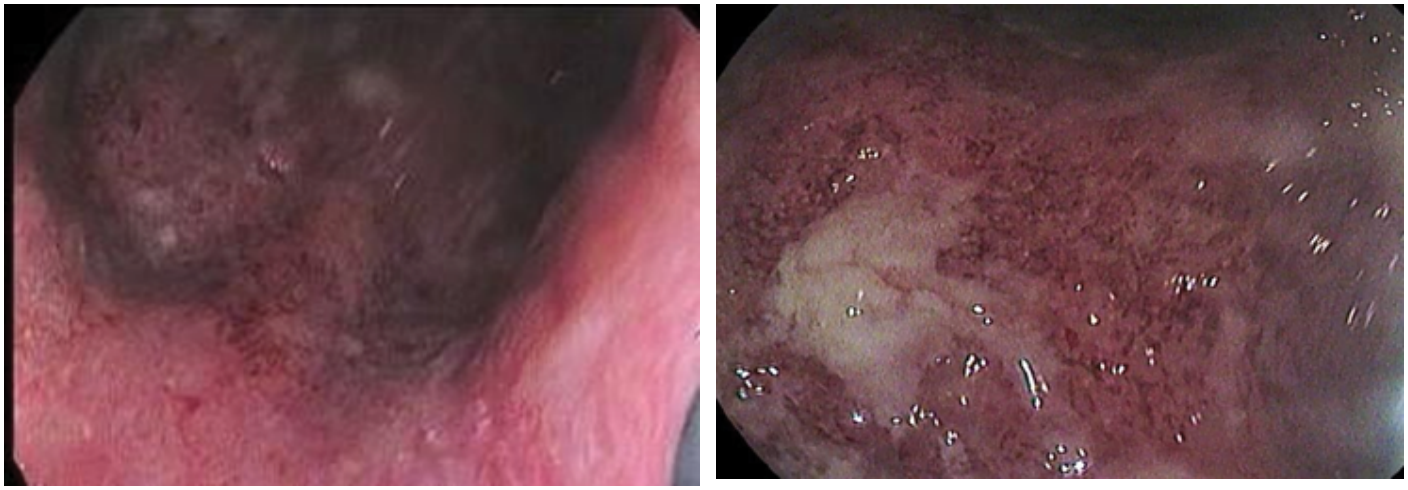

Figure 4. *Colonoscopy Images.*

or lab markers criteria that aid in its diagnosis [13-15]; is a disease of young people, reviewed literature agreed between 15 and 40 old years on average [1,4]. Being a woman is another element to consider, vast majority of cases reported are female [16,17].

Current chronically ill patient, previously healthy with skin manifestations that cannot be explained by common causes such as infection by fungi, bacteria's, parasites, HIV, and not proved focus of sepsis, with a noticeable

increase in inflammatory response markers such as erythrocyte sedimentation rate and C-reactive protein; a disease of immune origin as part of our differential diagnosis should be considered. Despite gastro-intestinal manifestations started months after the skin lesions, they were vague and not symptomatically relevant to the patient, they cannot be underestimated, because approximately 50 percent of patients with PG have another related disorder, such as

ulcerative colitis, Crohn's disease, or rheumatoid arthritis [18]. IBD is the most common systemic illness associated and the rate is approximately 30%. UC increases the odds of developing PG by 15-fold, with the highest probability of developing PG occurring within the first year after the diagnosis of UC [19,20], colonoscopy or proctosigmoidoscopy with biopsy are the tests of choice for diagnosis. Thornton and cols found UC colitis in six patients over 14 patients with PG [21]. In our case, colonoscopy was performed, and macroscopic examination described the existence of ulcerative colitis, pathology study reported unspecific colitis. Tests such as perinuclear antineutrophilic cytoplasmic antibodies and anti-Saccharomyces cerevisiae antibodies are promising, but not yet recommended for routine use. Maverakis et al. created a Delphi consensus, which suggests that further investigation could be done, only if we have a neutrophilic infiltrate histology, and Jockenhöfer et al. developed the PARACELSUS score based on the prevalence of several features typically found in PG [22,23]. Despite these efforts, early diagnosis is still difficult and, so far, no proposal has been validated [24]. Nevertheless, our patient satisfied all the above diagnosis criteria. PG can follow a course independent to that of the bowel disease, however, most reported cases describe PG occurring in patients with an established diagnosis of IBD but is not closely related to the activity of UC, can also manifest during periods of bowel disease quiescence.

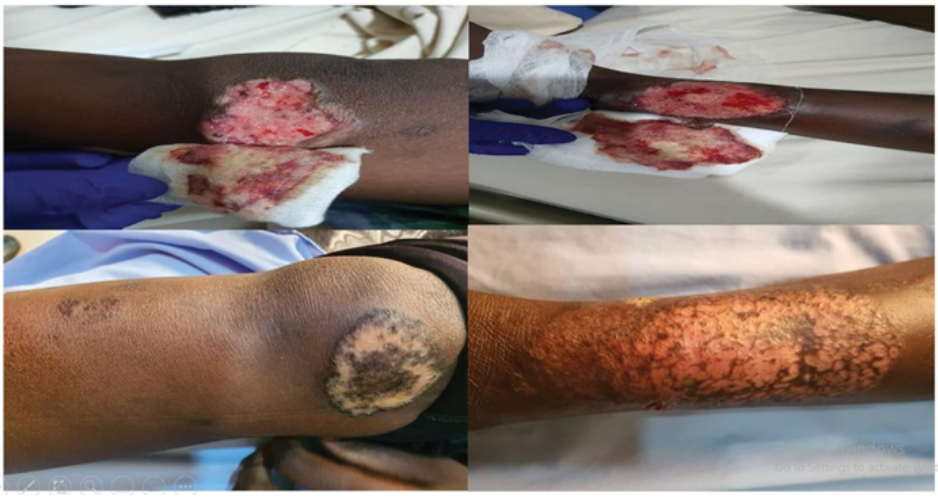

Figure 5. *Comparsion before and after treatment*

Treatment

In general, the therapeutic approach is determined by the severity of the symptoms and the degree of colonic involvement. Approximately 66 percent of patients will achieve clinical remission with medical therapy, and 80 percent of treatment-compliant patients maintain remission. If present, the underlying systemic disease must be treated, but there is no accepted correlation between the underlying systemic disease severity and the severity of pyoderma gangrenosum [25]. Our management included: Gentle local wound care and dressings, pain control, intravenous steroids (Hydrocortisone 100 mg IV q 6 hrs), additionally sulfasalazine (50 mg/kg/day). Remission of skin lesions was spectacular (Figure 5), as well as the fading of colonic manifestations after two weeks of treatment. Other alternatives like cyclosporin, mycophenolate mofetil, anti-TNF, intravenous immunoglobulins, interleukin 1 antagonists, and ustekinumab are available, but were not necessary in this case.

Conclusions

It is necessary to emphasize that despite the typicality of the lesions in PG, it is considered a rare entity worldwide with estimated prevalence of two to three cases per 100,000 people and an adjusted incidence rate of 0.63 per 100,000 person-years. So far is less common in sub-Saharan Africa, where only few cases are documented [25,26]. This being the first case reported in The Gambia, so it is necessary to draw the attention of general practitioners, especially the youngest in our subregion. Another clinical challenge in this patient is the fact that skin lesions came before manifestations of intestinal diseases, and considering the high association with systemic diseases, it is imperative until proven otherwise to rule them out intensively.

References

1. Brunsting LA, Goeckerman WH, O'Leary PA. Pyoderma (ecthyma) gangrenosum. Clinical and experimental observations in five cases occurring in adults. Arch Dermatol Syphilis. 1930;22:655-80.
2. Alavi A, French LE, Davis MD, Brassard A, Kirsner RS. Pyoderma Gangrenosum: An Update on Pathophysiology, Diagnosis and Treatment. Am J Clin Dermatol. 2017;18(3):355-372.
3. Fletcher J, Alhusayen R, Alavi A. Recent advances in managing and understanding pyoderma gangrenosum. F1000Res. 2019;8:F1000 Faculty Rev-2092.
4. Ruocco E, Sangiuliano S, Gravina AG, Miranda A, Nicoletti G. Pyoderma gangrenosum: an updated review. J Eur Acad Dermatol Venereol. 2009;23(9):1008-1017.
5. Pereira N, Brites MM, Gonçalo M, Tellechea O, Figueiredo A. Pyoderma gangrenosum--a review of 24 cases observed over 10 years. Int J Dermatol. 2013;52(8):938-945.
6. Marzano AV, Damiani G, Ceccherini I, Berti E, Gattorno M, Cugno M. Autoinflammation in pyoderma gangrenosum and its syndromic form (pyoderma gangrenosum, acne and suppurative hidradenitis). Br J Dermatol. 2017;176(6):1588-1598.
7. David F, Lopes Freitas R, Brás-Cruz R, Rocha J, Rosário C. A Case of Recurrent Idiopathic Pyoderma Gangrenosum. Cureus. 2022;14(5):e25112.
8. George C, Deroide F, Rustin M. Pyoderma gangrenosum - a guide to diagnosis and management . Clin Med (Lond). 2019;19(3):224-228.
9. Gameiro A, Pereira N, Cardoso JC, Goncalo M. Pyoderma gangrenosum: challenges and solutions. Clin Cosmet Investig Dermatol. 2015;8:285-93.
10. Weenig RH, Davis MD, Dahl PR, Su WP. Skin ulcers misdiagnosed as pyoderma gangrenosum. N Engl J Med. 2002;347:1412.
11. Monari P, Moro R, Motolese A, et al. Epidemiology of pyoderma gangrenosum: Results from an Italian prospective multicentre study. Int Wound J. 2018;15(6):875-879.
12. Carrillo-Ñáñez L, Novoa-Millones L, Carrillo-García PL, Cabrera-Castellano X. Pyoderma gangrenosum as an initial presentation of ulcerative colitis. Rev Soc Peru Med Interna. 2014;27(4):193.
13. Lopez Pineiro M, Willis E, Yao C, Chon SY. Pyoderma gangrenosum-like ulceration of the lower extremity secondary to sunitinib therapy: a case report. SAGE Open Med Case Rep. 2018;6:2050313X18783048.
14. Ashchyan HJ, Butler DC, Nelson CA, et al. The Association of Age with Clinical Presentation and Comorbidities of Pyoderma Gangrenosum. JAMA Dermatol. 2018;154(4):409-413.
15. Vaysse-Vic M, Mathieu PA, Charissoux A, Charissoux JL, Marcheix PS. Pyoderma gangrenosum or necrotizing fasciitis? Diagnostic and therapeutic wanderings. Orthop Traumatol Surg Res. 2017;103(4):615-617.
16. States V, O'Brien S, Rai JP, et al. Pyoderma Gangrenosum in Inflammatory Bowel Disease: A Systematic Review and Meta-Analysis. Dig Dis Sci. 2020;65(9):2675-2685.
17. Weenig RH, Davis MD, Dahl PR, Su WP. Skin ulcers misdiagnosed as pyoderma gangrenosum. N Engl J Med 2002; 347:1412.
18. Binus AM, Qureshi AA, Li VW, Winterfield LS. Pyoderma gangrenosum: a retrospective review of patient characteristics, comorbidities and therapy in 103 patients. Br J Dermatol. 2011;165(6):1244-1250.
19. Kridin K, Damiani G, Ludwig RJ, Tzur Bitan D, Cohen AD. Estimating the Odds of Ulcerative Colitis-Associated Pyoderma Gangrenosum: A Population-Based Case-Control Study. Dermatology. 2021;237(3):323-329.
20. Ng SC, Shi HY, Hamidi N, et al. Worldwide incidence, and prevalence of inflammatory bowel disease in the 21st century: a systematic review of population-based studies. Lancet. 2017;390(10114):2769–78
21. Thornton JR, Teague RH, Low-Beer TS, Read AE. Pyoderma gangrenosum and ulcerative colitis. Gut. 1980;21(3):247-248.
22. Maverakis E, Ma C, Shinkai K, et al. Diagnostic criteria of ulcerative pyoderma gangrenosum: a Delphi consensus of international experts. JAMA Dermatol. 2018; 154:461–466.
23. Maverakis E, Ma C, Shinkai K, et al. Diagnostic Criteria of Ulcerative Pyoderma Gangrenosum: A Delphi Consensus of International Experts. JAMA Dermatol. 2018;154(4):461–466.
24. Haag C, Hansen T, Hajar T, et al. Comparison of Three Diagnostic Frameworks for Pyoderma Gangrenosum. J Invest Dermatol. 2021;141(1):59-63.
25. McKenzie F, Cash D, Gupta A, Cummings LW, Ortega-Loayza AG. Biologic and small-molecule medications in the management of pyoderma gangrenosum. J Dermatolog Treat. 2019;30(3):264-276.
26. Schmieder SJ, Krishnamurthy K. PG. [Updated 2022 Aug 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482223/
27. Alavi A, French LE, Davis MD, Brassard A, Kirsner RS. Pyoderma Gangrenosum: An Update on Pathophysiology, Diagnosis and Treatment. Am J Clin Dermatol. 2017;18(3):355-372.
28. ul Bari A. Pattern of skin infections in Black Africans of Sierra Leone. Indian J Dermatol. 2007;52(1):30-34.
29. Smith EH, Essop AR, Segal I, Posen J. Pyoderma gangrenosum and ulcerative colitis in black South Africans. Case reports. S Afr Med J. 1984;66(9):341-343.