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Pyoderma Gangrenosum of the Breast: A Rare and Challenging Diagnosis

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Abstract **Case Report**

Background: Pyoderma gangrenosum (PG) is a rare, neutrophilic dermatosis characterized by rapidly progressive, painful ulceration, often associated with systemic diseases and triggered by trauma or surgery. Breast involvement is exceptionally uncommon, posing significant diagnostic challenges due to mimicry of infectious or malignant processes. ***Case presentation*** A 61-year-old postmenopausal woman (G5P5) with controlled type 2 diabetes presented with fever and a rapidly enlarging, painful ulcer on the right breast, progressing from a 1 cm pustule to an 8 × 5 cm lesion over one week despite oral antibiotics (Figure 1). Ultrasound revealed diffuse skin thickening without abscess (Figure 2). Negative cultures prompted surgical debridement and biopsy, which confirmed PG with necrotizing vasculitis and lymphoplasmacytic infiltration (Figure 3). Treatment with systemic corticosteroids (1 mg/kg prednisolone) led to complete healing within two months. ***Conclusion*** Breast PG requires high clinical suspicion to avoid unnecessary surgery. Early immunosuppressive therapy is crucial for optimal outcomes and preservation of breast aesthetics.

Keywords Pyoderma gangrenosum; Breast ulceration; Neutrophilic dermatosis; Necrotizing vasculitis; Corticosteroid therapy; Case report.

INTRODUCTION

Pyoderma gangrenosum (PG) is a rare, idiopathic, inflammatory skin disorder belonging to the spectrum of neutrophilic dermatoses, with an estimated incidence of 3–10 cases per million annually [1,2]. It typically presents as a rapidly enlarging, painful ulcer with undermined violaceous borders, often on the lower extremities, and is associated with underlying systemic conditions such as inflammatory bowel disease, rheumatoid arthritis, hematologic malignancies, or diabetes mellitus in up to 50% of cases [3,4]. Breast involvement is exceedingly rare, accounting for less than 1% of reported PG cases, and is frequently misdiagnosed as infection, breast cancer, or hidradenitis suppurativa, leading to inappropriate surgical interventions that can exacerbate the condition via pathergy [5,6]. Early recognition is critical, as delayed diagnosis increases morbidity, scarring, and psychological distress. We report a case of de novo, unilateral breast PG in a postmenopausal woman with diabetes, highlighting the diagnostic pitfalls and successful conservative management.

CASE REPORT

A 61-year-old woman, gravida 5 para 5, postmenopausal for 15 years, with a history of type 2 diabetes mellitus controlled by oral antidiabetics, presented to the gynecology department. She was a nonsmoker with no other comorbidities or recent trauma/surgery.

Fifteen days prior to admission, the patient noticed an edematous pustule in the lower outer quadrant of the right breast, which rapidly progressed to a 1 cm ulcer. Oral amoxicillin-clavulanate was prescribed by her primary care physician, with follow-up recommended in three days. However, she returned to the outpatient clinic after seven days with persistent fever (38.5°C), excruciating pain, and a rapidly expanding ulcer measuring 8 × 5 cm, involving the external half of the right breast while sparing most of the areola and nipple. Vital signs were stable except for low-grade fever. (Figure 1)

Breast ultrasound demonstrated diffuse skin and soft tissue thickening with hyperemia but no drainable collection or mass suggestive of abscess or malignancy. Aerobic and anaerobic blood and wound cultures were negative. Laboratory investigations revealed mild leukocytosis (12,000/mm³) with neutrophilia, elevated C-reactive protein (45 mg/L), and normal tumor markers (CA 15-3 and CEA).

The patient was admitted for further evaluation. Due to suspicion of deep infection, urgent surgical debridement was performed with incisional biopsies for histology and microbiology. On day 5, the histopathological report confirmed PG, showing ulceration with purulent exudate, dense perivascular lymphoplasmacytic infiltration, and leukocytoclastic vasculitis with fibrinoid necrosis at the ulcer edges, without evidence of infection, dysplasia, or malignancy. Systemic therapy was initiated immediately with oral prednisolone at 1 mg/kg/day, tapered gradually over eight weeks. No additional immunosuppressants were required.

Post-treatment follow-up at two months showed complete re-epithelialization with minimal scarring and no recurrence. The patient reported resolution of pain and fever within one week of starting corticosteroids. Annual dermatologic surveillance was recommended, with no systemic associations identified on further workup (colonoscopy, rheumatologic panel).

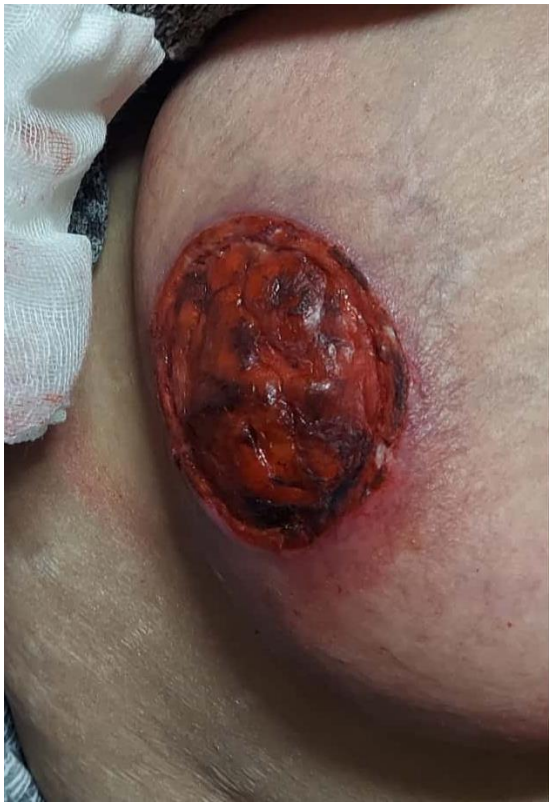

Figure 1: pyodermie gangrenosum of the Brest

DISCUSSION

Pyoderma gangrenosum of the breast represents a diagnostic conundrum due to its rarity and phenotypic overlap with more common entities such as bacterial mastitis, inflammatory breast carcinoma, or factitial dermatitis [5,7,8]. In this case, the rapid progression despite antibiotics and negative cultures raised suspicion for a noninfectious process, underscoring the importance of early biopsy in nonresolving ulcers [9,10]. Histologically, the pathognomonic features—sterile neutrophilic dermal infiltrate, karyorrhexis, and vasculitis without true infection—distinguish PG from mimics [2,11]. The absence of malignancy or dysplasia on biopsy was crucial, as breast PG can mimic angiosarcoma or ductal carcinoma [12,13].

Pathogenesis involves dysregulated innate immunity with exaggerated neutrophil response and cytokine release (e.g., TNF-α, IL-8), often triggered by minor trauma via pathergy, though our patient had no identifiable inciting event [1,14]. Associated conditions like diabetes, present here, increase risk through impaired wound healing and altered immunity [3,15]. While lower limb PG predominates, breast cases are often postoperative or spontaneous, with women aged 40–60 years most affected [5,6].

Management prioritizes immunosuppression over surgery to avoid pathergy [7,9]. First-line therapy is systemic corticosteroids (0.5–1 mg/kg/day), achieving response in 60–80% of cases, as seen here [2,11,16]. Adjuncts like cyclosporine, infliximab, or mycophenolate are reserved for refractory disease [17,18]. Surgical debridement, though performed initially for suspected infection, should be deferred until PG is excluded [8,10]. Our patient's excellent outcome highlights the efficacy of early steroids in preserving breast integrity and aesthetics [12,19]. Limitations include the single-center experience and lack of genetic/molecular analysis, though clinical correlation

was definitive [20]. This case emphasizes multidisciplinary input (dermatology, gynecology, pathology) for optimal care.

CONCLUSION

Pyoderma gangrenosum of the breast is a rare but critical differential in nonhealing ulcers, particularly in patients with systemic risk factors like diabetes. Prompt histopathological confirmation and initiation of systemic corticosteroids can prevent unnecessary interventions and promote rapid healing with minimal sequelae. Clinicians should maintain a low threshold for biopsy and avoid surgery until PG is ruled out to optimize cosmetic and functional outcomes.

REFERENCES

1. Ormerod AD, Todd P, Peshu N, *et al.,* Pyoderma gangrenosum: an update on diagnosis and management. Br J Dermatol. 2020;183(4):567–578. doi:10.1111/bjd.19072
2. Wallach D, Vignon-Pennamen MD. Pyoderma gangrenosum revisited. Curr Opin Allergy Clin Immunol. 2015;15(4):313–320. doi:10.1097/ACI.0000000000000181
3. Powell FC, Schroeter AL, Su WP, *et al.,* Pyoderma gangrenosum: a review of 86 patients. Q J Med. 1985;55(217):173–186.
4. Binus AM, Qureshi AA, Li VW, *et al.,* Pyoderma gangrenosum: a retrospective review of patient characteristics, comorbidities and therapy in 103 patients. Br J Dermatol. 2011;165(6):1244–1250. doi:10.1111/j.1365-2133.2011. 10566.x
5. Tolkachjov SN, Fahy AS, Wetter DA, *et al.,* Postoperative pyoderma gangrenosum of the breast: a systematic review. J Am Acad Dermatol. 2015;73(4):587–593. doi: 10.1016/j.jaad.2015.06.045
6. Singh D, Bahra N, Owen HC, *et al.,* Pyoderma gangrenosum of the breast: a rare cause of breast ulceration. Breast J. 2018;24(6):1148–1150. doi:10.1111/tbj.13122
7. Weenig RH, Davis MD, Dahl PR, *et al.,* Skin ulcers misdiagnosed as pyoderma gangrenosum. N Engl J Med. 2002;347(6):448–452. doi:10.1056/NEJMra013062
8. Miller J, Yentzer BA, Clark A, *et al.,* Pyoderma gangrenosum: a review of clinical and pathologic features. J Am Acad Dermatol. 2010;62(4):591–601. doi: 10.1016/j.jaad.2009.07.011
9. Alkharsawi Y, Alkharsawi N, Alshehri A, *et al.,* Pyoderma gangrenosum of the breast: case report and systematic review of the literature. Breast J. 2021;27(5):420–427. doi:10.1111/tbj.14149
10. Zuo KJ, Fung E, Tetzlaff MT, *et al.,* Pyoderma gangrenosum: clinicopathologic classification and associated conditions. Am J Dermatopathol. 2018;40(3):153–165. doi:10.1097/DAD.0000000000000879
11. Su WP, Davis MD, Weenig RH, *et al.,* Pyoderma gangrenosum: clinicopathologic correlation and proposed diagnostic criteria. Int J Dermatol. 2004;43(11):790–800. doi:10.1111/j.1365-4632.2004. 02128.x
12. Farhi D, Cosnes J, Zizi N, *et al.,* Involvement of the breast in classic pyoderma gangrenosum. Br J Dermatol. 2007;157(6):1227–1229. doi:10.1111/j.1365-2133.2007. 08249.x
13. Tan E, Dillon J, Taylor S. Pyoderma gangrenosum masquerading as an infected breast carcinoma. Breast J. 2019;25(3):512–513. doi:10.1111/tbj.13228
14. Braswell SF, Kostopoulos TC, Ortega-Loayza AG. Pathophysiology of pyoderma gangrenosum. J Am Acad Dermatol. 2015;73(4):574–580. doi: 10.1016/j.jaad.2015.06.021
15. Bennett ML, Jackson JM, Jorizzo JL, *et al.,*Pyoderma gangrenosum. A comparison of typical and atypical forms with an emphasis on disease associations and demographics. Am J Med. 2000;109(7):505–509. doi:10.1016/S0002-9343(00)00563-8
16. Reichrath J, Bens G, Bonowitz A, *et al.,* Treatment recommendations for pyoderma gangrenosum: an evidence-based review of the literature based on more than 350 patients. J Am Acad Dermatol. 2005;53(3):494–502. doi: 10.1016/j.jaad.2004.11.010
17. Brooklyn T, Dunnill G, Probert C. Diagnosis and treatment of pyoderma gangrenosum. BMJ. 2006;333(7562):181–184. doi:10.1136/bmj.333.7562.181
18. Fonollosa A, Pallares L, Gratacós J, *et al.,* Pyoderma gangrenosum: treatment with cyclosporine. J Am Acad Dermatol. 1994;30(2 Pt 2):319–320. doi:10.1016/S0190-9622(94)70053-7
19. Micallef D, Montefort S. Pyoderma gangrenosum of the breast presenting postpartum: a case report. J Med Case Rep. 2016; 10:190. doi:10.1186/s13256-016-0986-7
20. Magliocco M, Ashok D, Ramachandran S, *et al.,* Pyoderma gangrenosum of the breast: a rare entity with diagnostic challenges. Int J Surg Case Rep. 2020; 75:108–111. doi: 10.1016/j.ijscr.2020.08.048