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Staphylococcal Ecthyma Gangrenosum: An Exuberant Case Report

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Dear Editor,

Ecthyma gangrenosum (EG), is an uncommon cutaneous lesion, considered as a type of necrotizing vasculitis, mostly observed in immunocompromised patients with Pseudomonas aeruginosa bacteremia [1] in whom is been described a mortality around 10% to 38% [2]. Recent studies have shown the presence of other less frequent agents involved in EG. This case report presents a patient with human immunodeficiency virus (HIV) and an exuberant presentation of EG caused by a different etiology than what is typically described. This case did not involve a septicemic cause and was localized on the nail unit and distal left thumb. The patient was successfully treated with oral antibiotics.

A 38-year-old male patient with HIV, presented with a lesion on his left thumb. The dermatological examination showed an extensive necrotic ulcerated lesion, affecting the subungual region, hyponychium and digital pulp, those findings were compatible with EG (FIG. 1). Clinical tests were performed without significant laboratory or X-ray findings. However, tissue culture was positive for Staphylococcus aureus. It was started amoxicillin + potassium clavulanate 875 mg + 125 mg every 8 hours for 10 days, in addition to topical application of fusidic acid cream 20 mg/gr + betamethasone valerate 1 mg/g for 10 days. The patient returned 1 month after treatment with complete resolution of the lesion (FIG. 2).

Some studies have described ecthyma gangrenosum due to other etiologies. A study in 2021 reported a rare etiology of EG in an immunocompetent patient caused by Staphylococcus aureus [1]. Another study in 2022 reviewed patients with EG caused by staphylococcus aureus with underlying hematological malignancies such as HIV, myelodysplastic syndromes, and others.

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In research there are few reports describing EG caused by Staphylococcus aureus according to literature since Turnbull and Parry that reported the first case in 1981 [2].

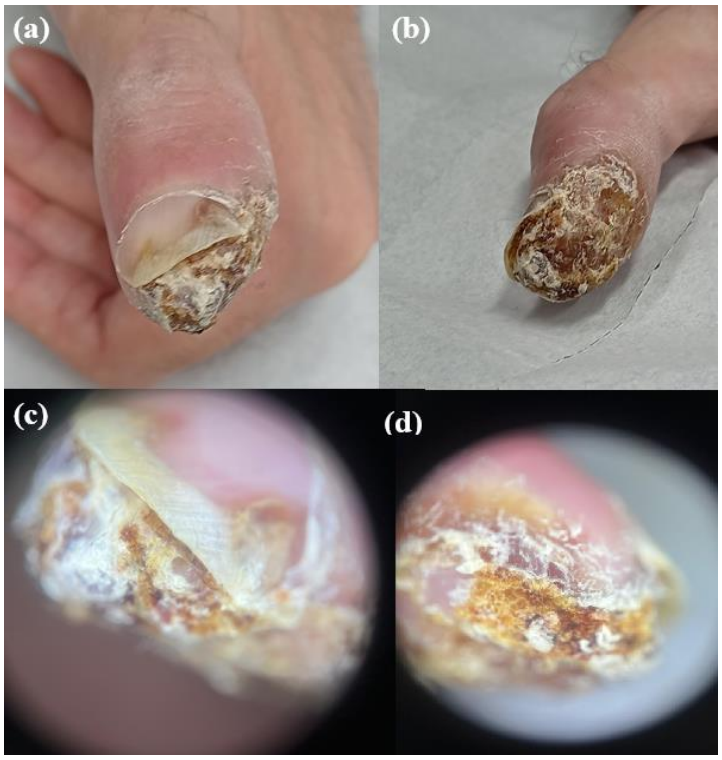

FIG. 1. **Nail unit (a, c) and left thumb (b, d) lesions compatible with ecthyma gangrenosum.**

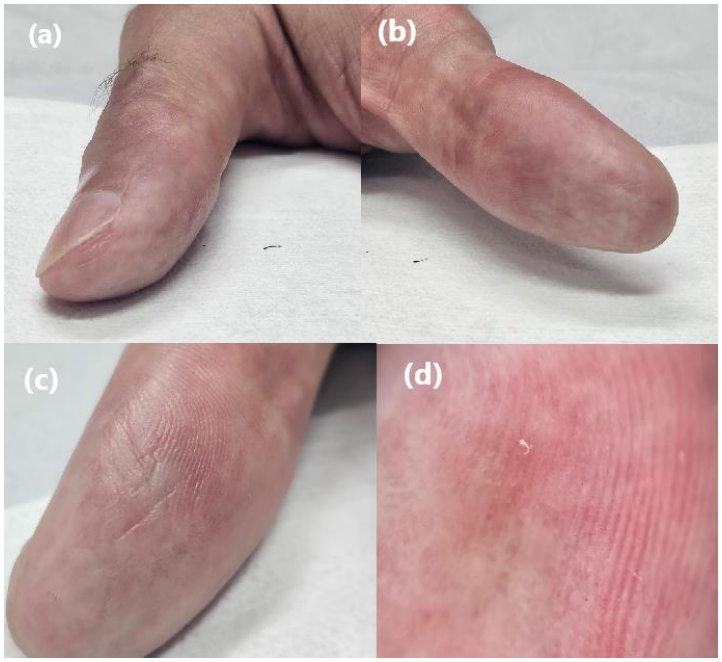

FIG. 2**. Nail unit (a) and distal left thumb (b, c, d) of the same patient 30, days after oral antibiotic treatment with complete resolution of the ecthyma gangrenosum lesions.**

EG is usually seen in immunocompromised patients, particularly those with prolonged neutropenia or underlying malignant disease, it has been reported that EG manifests in immunocompetent patients as well and are not necessarily connected with septicemia [3].

The lesion classically present as macular evolving to plaque-like and hemorrhagic vesicles lesions that after rupture, become ulcers that evolve with necrosis and a peripheral erythematous halo [4]. The clinical lesion would be the result of bacterial invasion of the middle and adventitia layer of the arteries and veins of the skin, causing ischemic necrosis possibly secondary bacterial enzymes and toxins [5].

Blood cultures in case of bacteremia and skin biopsy are important [3]. Often tissue cultures can be crucial for diagnosing EG and selecting appropriate empirical antimicrobial therapy, especially if a pathogen other than P. aeruginosa is suspected in EG case [2].

Cutaneous vasculitis is generally seen in EG histopathology studies [2]. However, not all cases present typical findings, such as vasculitis and necrosis [4]. Even some analysis of cases in the literature do not indicate any clinical difference between Pseudomonas and non-Pseudomonas EG cases [3].

As for the treatment, empiric antibiotic therapy is usually administered initially, until the etiology is established, and aggressive antibiotic treatment is prescribed, and surgical excision if necessary [3]. It is important to highlight that in the literature, treatment guidelines for staphylococcal Ecthyma Gangrenosum do not exist [4]. This case illustrates an exuberant presentation of EG, different as what most literature describes, reinforcing the importance of maintaining updates on diagnosis and future guidelines for its management.

1. Conflict of Interest

The authors declare no conflict of interest.

2. Funding

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3. Patient consent

The patient in this manuscript has given written informed consent to the publication of his case details.

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