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Case Report

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Ecthyma gangrenosum complicating first line treatment of chronic lymphocytic leukemia

Abstract

Ecthyma Gangrenosum is a severe skin disease commonly associated with Pseudomonas aeruginosa septicemia, there is an increased risk of infection in patients with malignancy undergoing chemotherapy notably Chronic lymphocytic leukemia (CLL). We present a case report of CLL patient infested by P. aeruginosa.

Keywords: chronic lymphocytic leukemia, ecthyma gangrenosum, rituximab fludarabine cyclophosphamide

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Introduction

Opportunistic infections in chronic lymphocytic leukemia (CLL) have been described in several clinical trials and case reports. An increased risk of infection is caused by the inability of the CLL patient's cells to produce the antibodies needed to fight infection and also due to the side effects of chemotherapy, which reduces the white blood cells count. Ecthyma gangrenosum (EG) is an example of a severe and a life-threatening skin infection in which the causative germ is always *P. aeruginosa,* we present a case report of CLL patient infested by *P. aeruginosa.*

Case report

A 57-year-old man diagnosed with chronic lymphocytic leukemia based on a 5/5 Matutes test in immunophenotyping. It is necessary to mention that protein electrophoresis was in favor of an inflammatory profile without hypogammaglobulinemia. Staged C of Binet due to anemia and thrombopenia, the patient judged as fit. Hence, the decision to put him under Riuximab, Fludarabine and Cyclophosphamid regimen. After 21days of the first cure of chemotherapy, the patient presented 5 days of progressive weakness, fatigue, fever at 39° and skin lesions in scalp and legs. He described apparition of red patches with bubble focus in the center on both lower limbs, rapidly becoming hemorrhagic within few hours. There were several also crusty lesions with erosion surmounted by hemorrhagic on the scalp.

The patient admitted with a low blood pressure at 90/60mmHg, Tachycardia 110ppm and fever up to 39 °C. The physical exam of the skin revealed multiple round violaceous macules, each with a surrounding halo of orange-to-yellow pigmentation on the trunk and extremities (Figure 1). These lesions ranged in size from five to 15mm. Some of them developed a single annular plaque, lateral, approximately 2cm in diameter in the scalp with a central zone of clearing (Figure 2) and no other abnormalities. The blood count showed white cells of 0.8G/L, neutropenia 0.4G/L, lymphopenia 0.3G/L a hemoglobin level of 6.1g/dL, VGM:84 1µm3, and platelet count of 89G/L.A positive infection profile, C-reactive protein at 129g/L, both blood culture and the skin swab showed *Pseudomonas Aeruginosa*.

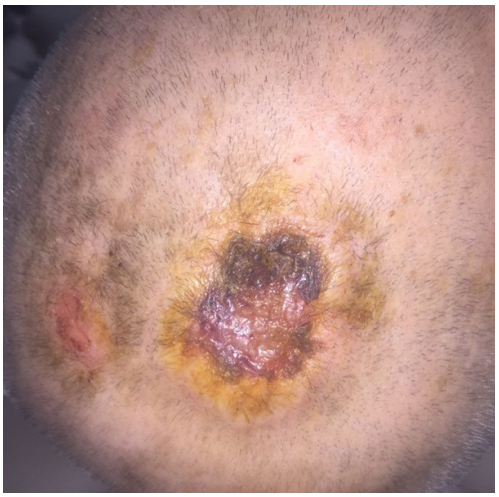

Figure 1 violaceous macules, surrounding halo of orange-to-yellow pigmentation.

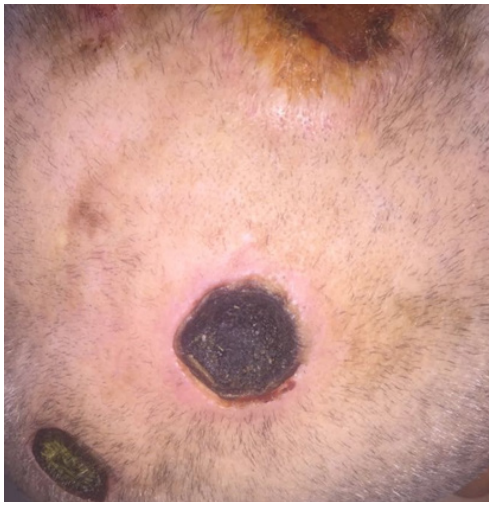

Figure 2 Scalp lesions: annular plaque.

Since the patient presented a severe case of infection, we requested protein electrophoresis showing hypogammaglobinemia induced by chemotherapy. Patient received urgently an intravenous antibiotics based oncephalosporin 3rd generation (ceftazidime) and immunoglobulin substitution. The follow up was with normalization of hemodynamic monitoring within 24hours and biological parameters within 10days. However skin lesions took one month to heal.

Discussion

Since patients with malignancy undergoing chemotherapy, are vulnerable, dermatological complications are common; ranging from simple dermatoses to severe cytotoxic and infection cutaneous manifestations.[1] EG is a skin disease most commonly associated with Pseudomonas aeruginosa septicemia, although a wide variety of Gram-negative and fungal causative organisms have been reported.[2] Pseudomonas septicemia reflects a state of immunosuppressed and most commonly presents in patients with neutropenia, chemotherapy, or hematologic malignancies, as in our patient.[3] EG reported to occur in up to 30% of patients with Pseudomonas septicemia, and mortality rates range from 38% to 96%.[4] Lesions follow a characteristic progression in which they initially present as painless erythematous macules that may be difficult to characterize clinically. However, the macules rapidly progress in size and develop central bullae that rupture, revealing painful, infarcted, and necrotic lesions with hemorrhagic borders.[5] Recommended treatment consists of an anti-pseudomonal b-lactam or a third-generation cephalosporin with an aminoglycoside.[6] A skin biopsy of the lesions may aid in diagnosis but should not delay initiation of antimicrobial medications.[7]

Multiple studies has shown that the administration of Immunoglobulin has potential benefits in the treatment of pseudomonas infections without any evidence of their benefit as prophylaxis treatment.[8] Intravenous and Subcutaneous Immunoglobulin Replacement Therapy may be considered for CLL patients who had hypogammaglobulinemia associated with recurrent bacterial infections and deficient production of specific antibodies, this recommendation is valid since infections is the main factor of morbidity and mortality in these patients.[9]

Conclusion

EG reflects a serious underlying infectious process, and timely treatment is essential to reduce mortality. Rapidly evolving necrotic lesions in a patient with any form of immunosuppression should prompt immediate initiation of blood cultures and administration of antibiotics with particular emphasis on Gram negative, especially Pseudomonas, coverage. Skin biopsy can confirm the diagnosis.

Acknowledgments

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Conflicts of interest

The authors declare no conflicts of interest.

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