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CASE REPORT

Severe cutaneous thrombosis with hemorrhagic necrosis in a patient with paroxysmal nocturnal hemoglobinuria: A case report and review of literature

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ABSTRACT

Paroxysmal nocturnal hemoglobinuria (PNH) is a rare, chronic acquired clonal stem cell disorder, typically manifesting hemolysis, pancytopenia and thrombosis in various organs. PNH-associated cutaneous thrombosis is extremely rare. Herein, we report a case of severe cutaneous thrombosis with hemorrhagic necrosis in a patient with PNH and review the literature.

Introduction

Paroxysmal nocturnal hemoglobinuria (PNH) is a rare, chronic acquired clonal stem cell disorder with an annual incidence of 1.3 per million individuals,[1] typically manifesting hemolysis, pancytopenia, and thrombosis in various organs. PNH-associated cutaneous thrombosis is extremely rare; only five cases have been documented to date. We report a case of severe cutaneous thrombosis with hemorrhagic necrosis in a patient with PNH and review the literature.

Case report

A 53-year old female presented initially in August 2013 with pancytopenia, with an absolute neutrophil count 2200/μL, hemoglobin 8.8 g/dL, and platelets 42×10^3/μL. Bone marrow biopsy demonstrated hypocellular marrow, consistent with aplastic anemia. Viral serology studies were negative. She was treated with danazol and biweekly platelet and/or red cell transfusions for 6 months without improvement. Antithymocyte globulin and cyclosporine A were initiated in April 2014, resulting in a partial remission of aplastic anemia in 15 months.

However, she complained of fatigue with shortness of breath and direct antiglobulin (Coombs)-negative hemolytic anemia was detected in September 2015. The diagnosis of PNH was confirmed by CD55/59 flow cytometry and FLAER (fluorescein-labelled proaerolysin) with 74.7% of granulocytes being abnormal. Since then, she received biweekly to monthly red cell transfusion for symptom control.

The patient presented to the our Dermatology Clinics in March 2016 with a 1-week history of multiple purpuric plaques with central hemorrhagic blister and necrosis involving both ears and the right cheek (Figure 1A–C) following an episode of fever. Laboratory analysis revealed hemolytic anemia (hemoglobin was 6 g/dL) and thrombocytopenia (platelet count was 35×10^3/uL), prothrombin time 15 seconds, international normalization ratio 1.36, negative lupus anticoagulant test, antinuclear antibody, and cryoglobulinemia, and a low positive titer of anticardiolipin immunoglobulin M. Blood and wound cultures showed negative result. Skin biopsy of a necrotic plaque revealed extensive dermal thrombosis with hemorrhagic ischemic change and a dense neutrophilic infiltrate (Figure 2). Direct immunofluorescence study showed negative findings. The biopsy findings confirmed the clinical suspicion of severe cutaneous thrombosis with hemorrhagic necrosis associated with PNH.

The patient was treated empirically with antibiotics, methylprednisolone 10 mg twice daily for 1 week, then prednisolone 10 mg twice daily. The necrotic plaques improved within a few days, and resolved with eschar formation (Figure 1D–F).

Conflicts of interest: The authors declare that they have no financial or non-financial conflicts of interest related to the subject matter or materials discussed in this article.

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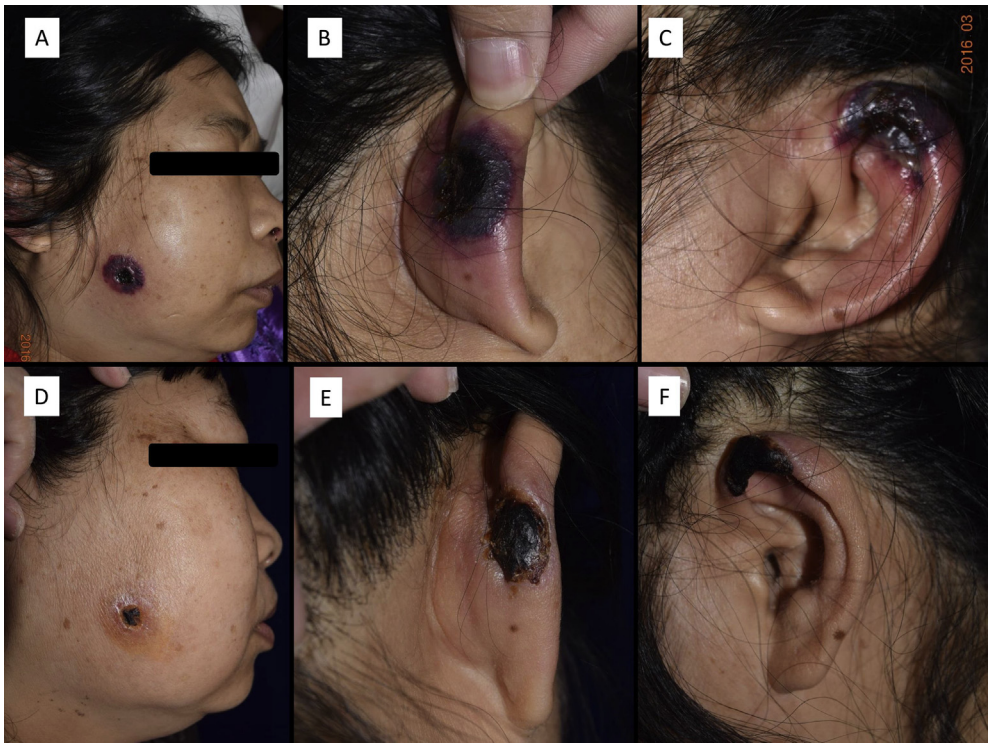

Figure 1 Violaceous plaques with central necrosis and hemorrhagic blister on the (A) right cheek, (B) right posterior ear, and (C) left helix. (D, E, F) Skin lesions improved after 2 weeks of prednisone therapy.

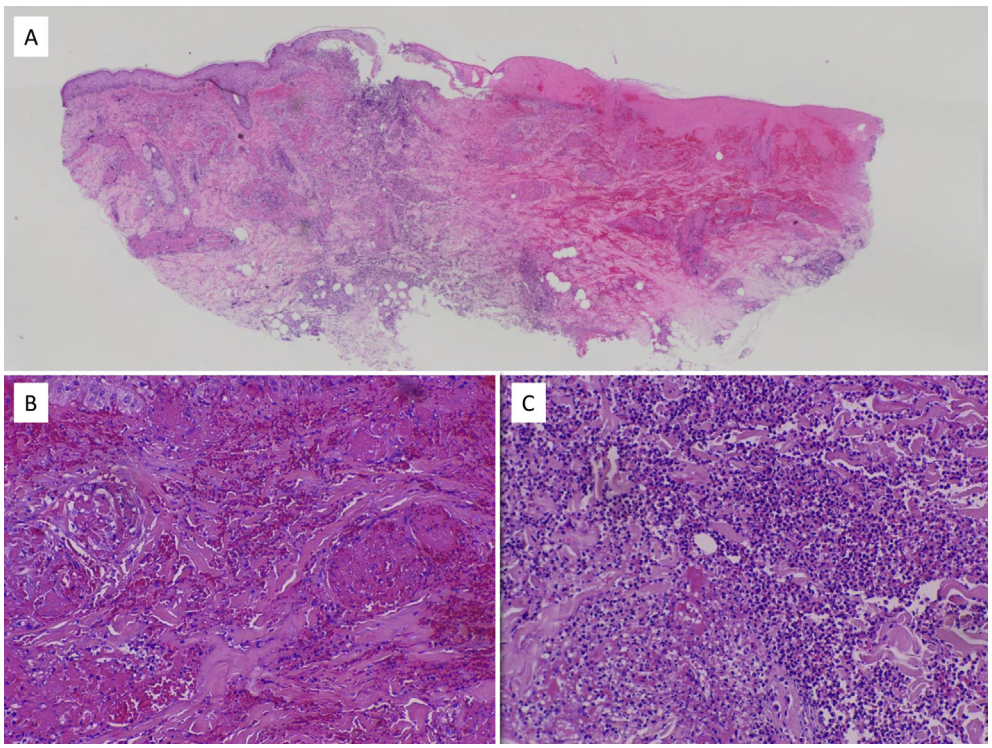

Figure 2 (A) Extensive hemorrhagic necrosis of the epidermis and dermis [hematoxylin–eosin (H&E), original magnification ×40]; (B) high-power view reveals thrombosis and necrosis of almost all blood vessels (H&E, ×200); (C) there is a dense perivascular and interstitial infiltrate of neutrophils mixed with mononuclear cells. (H&E, ×200).

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