Hypocomplementemic paraneoplastic vasculitis: a rare case of b-cell malignancy

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Dear Editor,

Pemphigus foliaceus (PF) is an autoimmune skin disorder characterized by superficial vesicle formation and is rarely reported among the cutaneous manifestations associated with non-Hodgkin lymphoma (NHL)[1].

Urticarial vasculit has been classified into two subgroups based on complement levels: normocomplementemic urticarial vasculitis and hypocomplementemic urticarial vasculitis[2]. Patients with normal complement levels have normocomplementemic urticarial vasculitis, typically with better prognosis, while those with low levels have hypocomplementemic forms, carrying higher complication risk, especially with systemic involvement[3]. Hypocomplementemia, reflecting chronic antigenic stimulation and autoreactive B-cell activity, signals systemic autoimmunity and risk of lymphomagenesis[4]. In this case, no urticarial lesions were observed, making it a rare atypical presentation of hypocomplementemic urticarial vasculitis syndrome (HUVS) and highlighting the need to consider underlying malignancy, as a B-cell lymphoproliferative disorder was identified.

A 24-year history pemphigus patient presented with recurrent heat, discoloration, and redness of the right hand, reporting two prior similar episodes. On systemic examination, blood pressure was 122/70 mmHg, pulse 80 beats/min, respiratory rate 20/min, and body temperature 36.4°C. Physical examination revealed an erythematous-violaceous lesion with well-defined but irregular borders over the thenar region of the right hand. No urticarial lesions were observed. Hepatomegaly was noted, but there was no splenomegaly. Laboratory tests demonstrated decreased complement levels (C3: 0.73 g/L, C4: 0.01 g/L) and thrombocytopenia (platelet count: $32\times10^3/\mu L$). Antinuclear antibody (ANA) testing was positive at titers of 1/100–1/320 (1+) with a fine speckled cytoplasmic pattern. Extractable nuclear antigen (ENA) panel revealed no pathological findings. Hemoglobin level was 14.4 g/dL, and white blood cell (WBC) count was $20.96\times10^3/\mu L$. Renal and liver function tests were within normal limits. Based on these findings, hypocomplementemic vasculitis was considered, and the patient was referred to the hematology department for further evaluation due to the possibility of a paraneoplastic condition. Subsequent investigations revealed a CD5-negative, CD19-positive B-cell lymphoproliferative disorder. Genetic testing for hereditary cancer-associated mutations did not identify any pathogenic or likely pathogenic variants.

HUVS, also known as McDuffie syndrome, is a rare disorder first described by McDuffie and colleagues in 1973[5]. It is classified as primary (idiopathic, usually not systemic) or secondary (associated with systemic inflammation and often chronic)[6]. The secondary form is characterized

by low serum complement, autoantibodies, and immune deposition at the dermoepidermal junction, resembling a lupus band and overlapping with features of systemic lupus erythematosus (SLE)[7]. HUVS has been linked to malignancies, especially Hodgkin and non-Hodgkin lymphomas, though it remains unclear whether it is a cause or consequence of the malignancy[8]. A case report in the literature described a patient with rare hypocomplementemic urticarial vasculitis syndrome presenting as a paraneoplastic manifestation following a diagnosis of chronic lymphocytic leukemia[9]. An erythematous-violaceous lesion with irregular but well-defined borders was noted on the right thenar region, showing central color accentuation with a slightly edematous, rough surface. The appearance of the lesion was consistent with vasculitis (see figure 1). At presentation and previously, the patient had no urticarial lesions, distinguishing this case from others. Notably, marked C3 and C4 hypocomplementemia was observed during the acute episode.

Thrombocytopenia can be an indicator of malignancy. In patients with thrombocytopenia, hematologic malignancies should be considered and ruled out[10]. In the present case, laboratory tests during the acute episode revealed thrombocytopenia in addition to complement deficiency.

This case report highlights the potential association between a rare HUVS case presenting with atypical clinical features and an accompanying lymphoproliferative disorder. In the presence of underlying autoimmunity, hematologic malignancies should be carefully investigated and ruled out when hematologic abnormalities such as hypocomplementemia and thrombocytopenia accompany cutaneous vasculitic lesions.

Tables and Figures

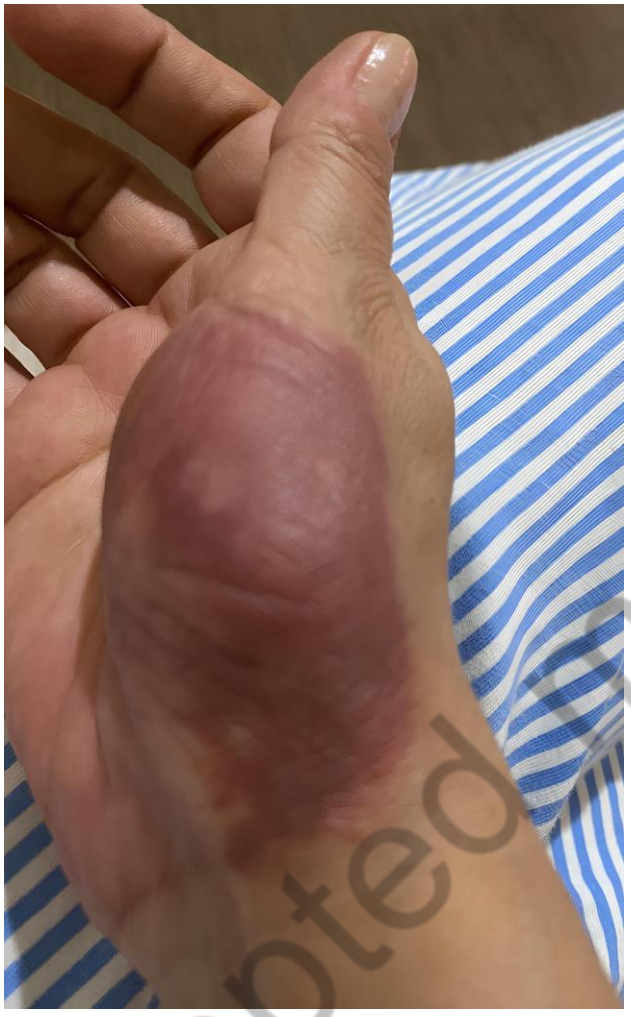

Figure 1 – Figure 1: Erythematous-violaceous lesion over the thenar region of the right hand.

The lesion presents with well-defined but irregular borders, a slightly edematous and roughened surface and more intense coloration at the center, consistent with vasculitic changes.

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