Paraneoplastic Cutaneous Leukocytoclastic Vasculitis as an Initial Presentation of Chronic Lymphocytic Leukemia

Dear Editor,

Vasculitis may be associated with underlying systemic diseases, and about 2–5% of cases present with malignancies.[1] Longley *et al*.[2] first proposed that antigens presented by malignant cells may trigger vasculitis; this being more common with hematological malignancies compared to solid organ tumors.[3]

Chronic lymphocytic leukemia (CLL) can present with varied cutaneous manifestations, including leukemia cutis, secondary cutaneous malignancies, vasculitis, generalized pruritus, purpura, erythroderma, erythema nodosum, Sweet syndrome, and paraneoplastic pemphigus.[4] However, paraneoplastic vasculitis is rarely seen in CLL [approximately 0.1–2%].[5]

A 75-year-old woman presented with nonpruritic, reddish raised lesions over buttocks, lower back, and lower limbs for 20 days. This was associated with mild pedal edema. She first went to her primary care provider, who ordered a basic hematological panel for her; her counts were significantly elevated, and she was referred to dermatology. She had no other complaints, and her medical history was not significant. There was no prior history of drug intake or recent infection (upper respiratory infection or urinary tract infection). There was no loss of appetite/loss of weight/prolonged fever.

Her general physical examination was unremarkable. On examination, multiple, well-defined, erythematous to purpuric papules and plaques were seen over buttocks, lower back, and lower limbs [Figure 1a and b]. Systemic examination was unremarkable. We sent her counts with a peripheral blood film (PBF) which showed a raised total leukocyte count of 33,800 cells/µl (differential leukocyte count = 22% neutrophils, 75% lymphocytes, 3% monocytes, and 0% eosinophils; Hb = 12.7g/dL; platelet count = 208×10^3/µl). The PBF showed smudge cells with predominantly normocytic normochromic red blood cells, leukocytosis with peripheral lymphocytosis (absolute lymphocyte count: 25.3×10^3/µl), and adequate platelets [Figure 2]. Urine microscopy showed traces of protein; renal function tests, liver function tests, and autoimmune panel for screening were within normal limits. A screening antinuclear antibody (ANA) was negative.

A skin biopsy was done for histopathology and direct immunofluorescence (DIF) with the clinical possibilities of cutaneous leukocytoclastic vasculitis and leukemia cutis. A hematology consult was done and according to their advice, patient underwent a bone marrow aspiration and biopsy.

Histopathological examination showed an unremarkable epidermis; dermal vessels had neutrophilic infiltrate, endothelial cell swelling, extravasation of RBCs, and leucocytoclasia [Figure 3a and b]. DIF was negative for any immune deposits. Bone marrow aspiration and biopsy showed a hypercellular marrow (overall cellularity 35%) with interstitial prominence of lymphoid cells suggestive of CLL [Figure 4]. Immunohistochemistry was also performed which showed the infiltration of CD5+ and CD23+ cells into the bone marrow [Figure 5a and b]. We diagnosed her as a case of paraneoplastic leukocytoclastic vasculitis in association with CLL. The patient was referred to the hemato-oncologist. Unfortunately, she did not follow up at our center thereafter.

Cutaneous vasculitis and polyarteritis nodosa are the most common types of paraneoplastic vasculitis. Hematological malignancy is seen in nearly two-third cases of paraneoplastic vasculitis with hairy cell leukemia being the most common.[6] Cutaneous vasculitis may predate the clinical manifestations of malignancy. Palpable purpura of the lower extremities is the most common morphology seen.[1] Direct or indirect sensitization to malignant cells or released cytokines may injure vessels and has similar clinical and histopathological features to vasculitis triggered by infections/connective tissue disease/drugs.[7]

CLL has very rarely been associated with cutaneous paraneoplastic vasculitis; there have been three cases reported worldwide till date.[4,7,8] Our case is unusual as it

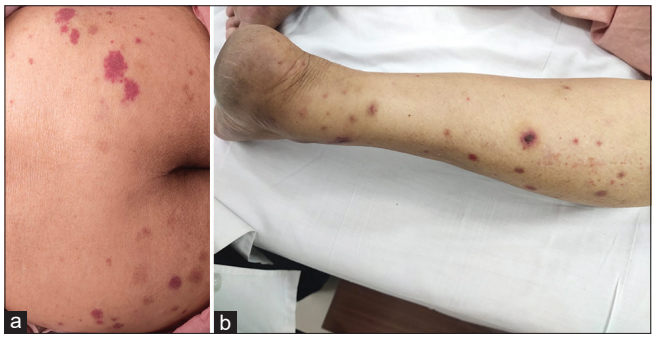

Figure 1: Multiple, well-defined, erythematous to purpuric papules and plaques 0.5cm × 1cm² seen over (a) buttocks and (b) lower limbs

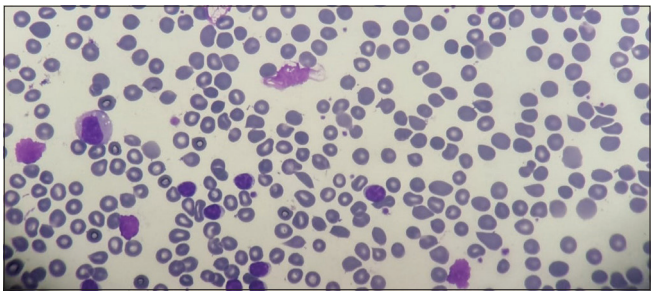

Figure 2: Peripheral smear with smudge cells (Giemsa, 100×)

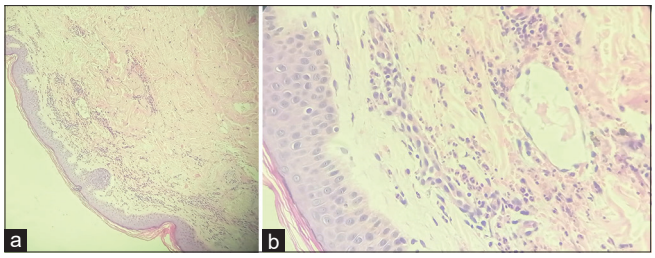

Figure 3: Skin biopsy findings: (a) inflammatory infiltrate seen around dermal vessels (H & E, 40x) and (b) neutrophilic infiltration of vessel wall, endothelial cell swelling, leukocytoclasia, and RBC extravasation (H and E,100×)

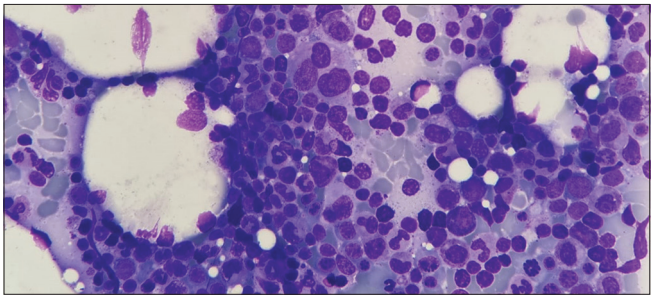

Figure 4: Bone marrow aspiration and biopsy showing a hypercellular marrow with interstitial prominence of lymphoid cells (Giemsa, 100x)

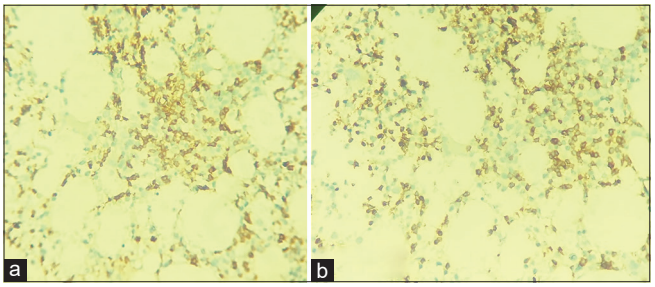

Figure 5: Immunohistochemistry findings: (a) bone marrow showing CD5 positivity (IHC, 200×) and (b) bone marrow showing CD23 positivity (IHC, 200×)

was a presenting feature and prior to diagnosis of CLL. Since there were no systemic complaints, the patient presented due to concern for her skin lesions. This case is unique since the skin lesions prompted investigations which led to the detection of her hematological malignancy; if she had not been adequately investigated, her diagnosis would have been delayed. Thus, ruling out hematological malignancy in elderly should be done in the setting of cutaneous vasculitis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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