Cryoglobulin induced vasculitis as the first clinical presentation of a patient with light chain myeloma – a case report

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Introduction

Cryoglobulinemic vasculitis is a clinically distinct entity of immune complex mediated vasculitis involving the small and medium sized vessels. In addition to systemic manifestations these patients present with characteristic cutaneous involvement. Number of bacterial and viral infections, autoimmune connective tissue disorders and hematological malignancies are known etiological associations. Herein we report a case of cryoglobulinemic vasculitis associated with light chain myeloma.

Case history

A 73 year old male presented with a one month history of progressive vasculitic eruption, Raynaud's phenomenon, acro-cyanosis, low grade intermittent fever and loss of weight. No history suggestive of neurological, renal or other systemic complications. He had no past history of hepatitis, blood transfusion or high risk sexual behavior, no photosensitive rashes, inflammatory arthritis, dry eyes or dry mouth. He was not on any long term drugs. System review was not indicative of a focus of internal malignancy.

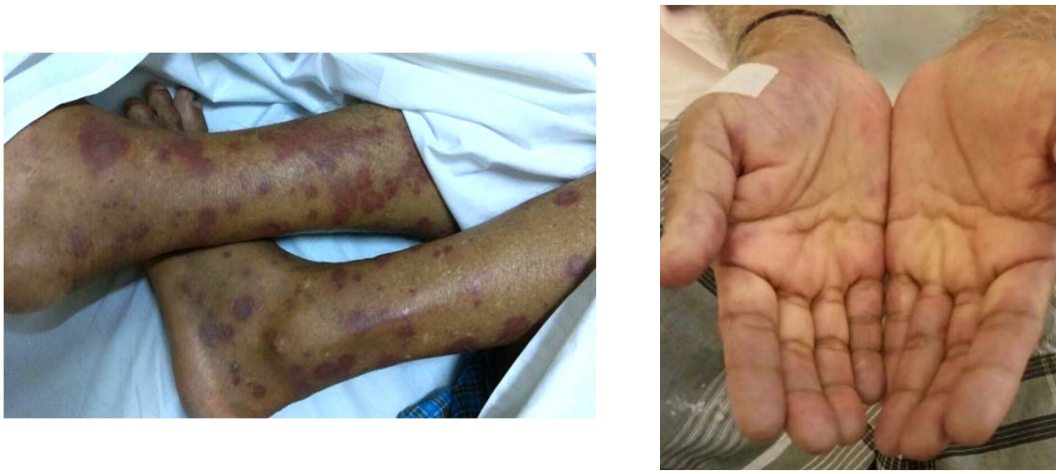

Figure 1. *Multiple palpable purpura over both lower legs and palms.*

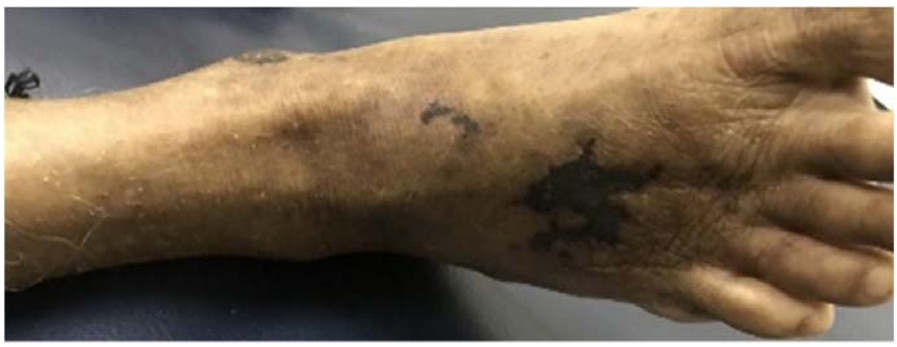

Figure 2. *Retiform purpura over dorsum of the foot.*

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Examination revealed emaciated ill looking patient with painful palpable purpura over abdomen and extremities of upper and lower limbs. He had retiform purpura but no ulceration. He was pale but there was no organomegaly, lymphadenopathy or bone tenderness. No objective evidence of polyneuropathy, optic fundi were normal.

Investigations

He had anemia (Hb-9.2g/dl), elevated ESR (104 mm 1st hour), positive cryoglobulins and rheumatoid factor (1/64) with elevated serum free kappa light chains (free kappachain-48.8micg/l). C4 complement level was low with normal C3 component. Serum protein electrophoresis was suggestive of a monoclonal gammopathy. However no lytic bone lesions, hypercalcemia, renal impairment or bone marrow infiltration by plasma cells. Hepatitis B and C serology, ASOT, ANA. ANCA were negative. CXR/USS-abdomen were normal. Skin biopsy findings were compatible with leukocytoclastic vasculitis involving both small and medium sized vessels.

With characteristic clinical features and supportive investigation findings cryoglobulinemic vasculitis was diagnosed and patient was started on combination immune suppressive therapy with prednisolone 0.5mg/kg/day and methotrexate 15mg weekly dose. Hematology follow up was arranged in view of the management of underlying light chain myeloma. His cutaneous eruption settled with the treatment of myeloma with immunosuppressive therapy.

Discussion

Cryoglobulinemia is defined as the presence of cold precipitating circulating immunoglobulins which tend to dissolve with rewarming[1]. Cryoglobulins are of three types – type I cryoglobulinemia due to single monoclonal immunoglobulins, whereas types II and III are due to mixed cryoglobulinemia, with a monoclonal component in type II and only polyclonal immunoglobulins in type III[3]. Type I cryoglobulins are always linked to a B-cell lymphoproliferative disorders and mixed cryoglobulins are associated with systemic autoimmune diseases, lymphoproliferative disorders, and chronic infections[1]. Cryoglobulinemia may cause vasculitis involving small and medium sized vessels, with clinical manifestations ranging from mild skin limited disease to severe multi-organ involvement with cutaneous, neurologic, and renal involvement. Skin is the most frequently involved with palpable purpura, but patients may present with chronic cutaneous ulceration. Neurological involvement can result in varying clinical manifestations – pure sensory axonopathy, distal sensory or sensory-motor polyneuropathy or mononeuritis multiplex. Acute or chronic type I membranoproliferative glomerulonephritis is the most frequent renal presentation of cryoglobulinemic vasculitis. Cryoglobulin induced microvascular occlusion and immune complex-mediated inflammation of blood vessels are the two pathogenic mechanisms in different types of cryoglobulinemia. Vascular occlusion is more frequent in type I cryoglobulinemia and immune complex-mediated vasculitis is more frequent in mixed cryoglobulinemia but there can be considerable overlap specially in cryoglobulins associated with lymphoproliferative disorders[2]. Elevated serum cryoglobulin levels with reduced C4 complement component with normal C3 component can favour the clinical diagnosis and patients should be evaluated for possible associations and complications. Skin biopsy for histology and direct immunofluorescence can provide valuable information to differentiate vascular occlusion and vascular inflammation as the management of above two conditions are entirely different. Management of the underlying condition will improve the clinical manifestations of cryoglobulinemia however patients may need immunosuppressive therapy for vascular inflammation and anticoagulant therapy for microvascular occlusion until they get rid of pathogenic cryoglobulins. Prognosis of the condition is determined by the degree of systemic involvement as well as the associated primary aetiology[1].

References

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