

Case Report

Anti-neutrophil cytoplasmic antibody - negative Churg-Strauss syndrome presenting as non-healing ulcer on finger and associated lichen amyloidosis: a case report

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ABSTRACT

Churg Strauss syndrome (CSS) also known as eosinophilic granulomatosis with polyangiitis (EGPA), is a rare disease manifested by hypereosinophilia, vasculitis and extravascular granuloma. We report a case of 72 year old male with history of asthma and allergic rhinitis who presented with non-healing ulcer on dorsum of left middle finger and petechial lesions on forearms. Investigations revealed marked eosinophilia, elevated IgE, negative antineutrophil cytoplasmic antibodies (ANCA), histopathologic examination showed granulomatous vasculitis and CSS was diagnosed using ACR criteria. We report this case because of rarity of disease and the importance of recognizing similar presentation for early diagnosis and treatment of this life threatening syndrome.

Keywords: Churg-Strauss syndrome, ANCA, Ulcer

INTRODUCTION

Churg Strauss syndrome (CSS), first described in 1951, is classified as a vasculitis of medium and small sized vessels, affecting mainly the lung and skin but can affect any organ system.^{1,2} The age of onset varies from 15-70 years with a slight male predominance.²

American college of rheumatology (ACR) has proposed a six classification criteria of which four must be present to make the diagnosis of CSS: asthma, eosinophilia greater than 10%, paranasal sinusitis, pulmonary infiltration, histopathological proof of vasculitis and mono or poly neuropathy.²

In the Lanham's classification the presence of three criteria: asthma, eosinophilia >1500/ μ L and systemic

vasculitis in two or more extrapulmonary sites^{1,3-5} is needed for diagnosis.

Here we report a patient who presented with late onset asthma, ecchymosis and a painful ulcer over finger. We reached a diagnosis of CSS with pulmonary and skin involvement and our case fulfilled four out of six ACR criteria.

CASE REPORT

A 72 year old male presented with a painful ulcer on the left middle finger and purpuric lesions on both forearms for two weeks. He also complained of pruritic skin lesions on both legs. He had hypertension for the past five years and an episode of transient ischaemic attack four years back along with allergic rhinitis and asthma for

several years. He had numbness of both feet with sensation of walking on wool.



Figure 1: (A) Punched out ulcerated plaque on left palmar surface showing an erythematous plaque and (B and C) left middle finger extending to second web space.

On examination multiple erythematous plaques were seen on dorsum of hands and a single punched out ulcerated plaque with yellowish slough on left middle finger also extending to second web space (Figure 1 B and C). Left palmar surface also showed an erythematous plaque (Figure 1A). There were multiple purpuric areas on both forearms (Figure 2) and his left forearm showed multiple pigmented papulonodules (Figure 3). His both legs showed retiform purpura (Figure 4).



Figure 2: Multiple purpuric lesion on forearm.



Figure 3: Papulonodules on forearm.

Routine investigations revealed haemoglobin-11gm%, total leucocytes-10200 with differential count as 39% neutrophils, 20% lymphocytes, 4% monocytes and 36% eosinophils. Erythrocyte sedimentation rate was 40 mm/hr and platelet count was normal. Bleeding time and clotting time, liver function were normal. Serum creatinine was 1.6. Serum IgE – 1,130 IU/ml. Peripheral smear showed normocytic normochromic picture with severe eosinophilia.



Figure 4: Retiform purpura over legs.

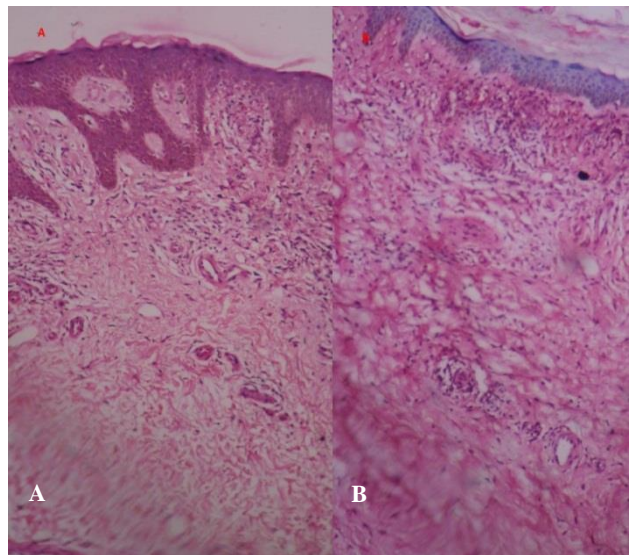


Figure 5: Biopsy from finger lesion showing (A) scanner view and (B) high power.

Antinuclear antibodies (ANA), ANCA to myeloperoxidase and proteinase were negative. Skin biopsy from the finger showed granulomatous vascular reaction (Figure 5) and from papulonodules on forearm showed amyloid deposits in the dermis (Figure 6).

Ultrasound study and echocardiogram were normal. Pulmonary function test revealed obstructive lung disease pattern.

Nerve conduction study showed abnormal amplitude, latency, conduction velocity in bilateral common peroneal and posterior tibial nerves suggestive of peripheral neuropathy pattern in lower limbs.

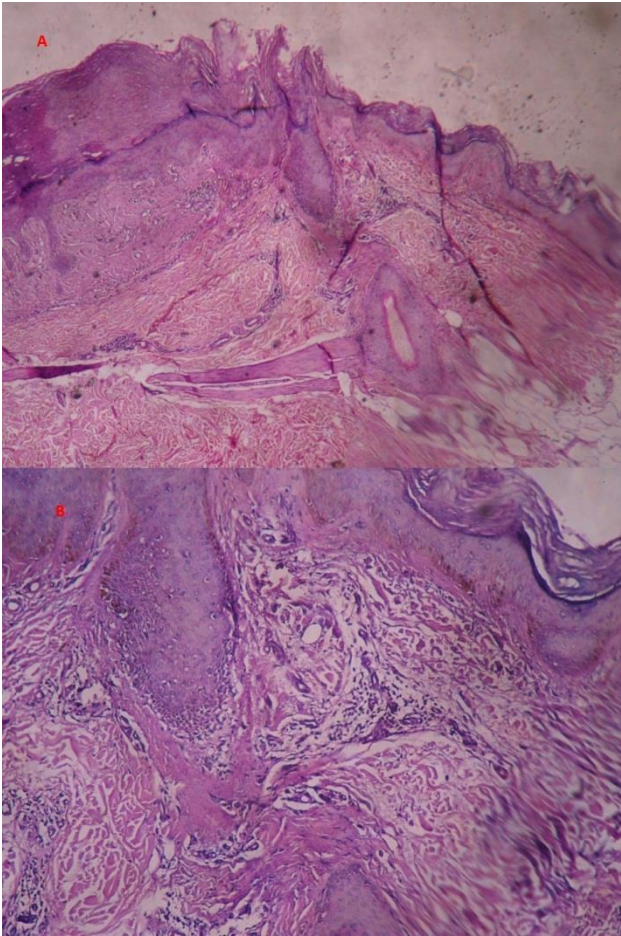


Figure 6: Biopsy from papulonodule over forearm scanner and high power view.

Treatment was started with prednisolone 1mg/kg/day. The patient had good improvement with healing of ulcer and reduction in size of plaques. His steroid was tapered and now he is on tapered dose and is on follow up with the disease under control.

DISCUSSION

CSS alternatively known as eosinophilic granulomatosis with polyangiitis (EGPA), is a rare disease characterized by disseminated necrotizing vasculitis with extravascular granulomas occurring exclusively among patients with asthma and tissue eosinophilia⁶ with an annual incidence of 0.5-4.2 cases/million.⁷

The exact aetiology is unknown. The presence of allergic rhinitis and asthma may suggest a hypersensitivity vasculitic response mediated by Th2 lymphocytes. The role of humoral immune response is suggested by hypergammaglobulinemia mainly IgE and ANCA positivity in 40% patients. But the cytokine profile in CSS remains contradictory as it suggests both Th1 and Th2 mediated disease. Moreover in ANCA-positive patients with severe vasculitic symptoms Th2 lymphocytes play a major role while in ANCA-negative patients Th1 lymphocytes contribute to the disease.⁸

Inhaled allergens, vaccination and drugs (leukotriene inhibitors, inhaled glucocorticoids and omalizumab) induced CSS have been reported but a genetic background has also been recognised, particularly an association with HLA-DRB4.^{9,10}

The ANCA positivity may be favoured by a genetic predisposition and is seen only in 38-40% of cases mostly directed against myeloperoxidase. A positive ANCA status at the time of diagnosis was associated with renal involvement, peripheral neuropathy and vasculitis, whereas negative ANCA status was associated with heart disease and fever.⁸ Our patient was ANCA negative.

The natural history of the disease is characterized by three phases although may not always occur successively. The prodromic allergic phase is characterized by asthma and rhinosinusitis, followed by a second phase with onset of blood eosinophilia. The third stage is defined by the emergence of systemic vasculitis.

Asthma may precede the systemic disease manifestation by many years, arises in adulthood & it doesnot show the typical seasonal exacerbations.^{7,10} Our patient had late onset asthma and allergic rhinitis.

Skin involvement is seen in 81.3% patients and palpable purpura is the most frequent manifestation.¹¹ Subcutaneous nodule is reported in 30% of patients.^{12,13} Livedo reticularis, maculopapular rash, necrotic bullae, digital ischaemia, haemorrhagic lesions and rarely solar urticaria are also reported.^{4,14-17} Our case presented with a non-healing painful ulcer over an erythematous plaque on knuckle pad which is a rare presentation and not reported previously. He also had purpuric lesions on forearms & retiform purpura on both legs along with cutaneous amyloidosis over forearms. A case of CSS associated with renal amyloidosis was reported in which patient had purpuric lesions.¹⁸ To our knowledge this is the first report of CSS presenting with cutaneous amyloidosis.

Systemic organ manifestations include necrotizing vasculitis of any organ, necrotizing glomerulonephritis or crescentic glomerulonephritis, alveolar hemorrhage, palpable purpura, or myocardial infarction due to proven coronary arteritis. Cardiac and neurologic involvement is often seen and early diagnosis & treatment prevents organ damage & mortality.¹⁹

The French vasculitis study group has identified five prognostic factors called as five-factor score (FFS). Patients without poor prognosis factors (FFS=0) have better survival rates than patients with poor prognosis factors (FFS \geq 1). The FFS consists of 5 items, 4 of which (age >65 years, heart and GI (i.e., hemorrhage, infarction or pancreatitis), stabilized peak creatinemia >150 μ mol/L, each accorded +1 point) are associated with poor prognoses, while the fifth (ENT manifestations) is associated with better outcomes and its absence is scored +1.⁶

Treatment must be tailored to individual patients according to the presence of poor prognostic factors. An initial remission induction regimen containing glucocorticoids or combination of high-dose corticosteroids and cyclophosphamide is still the gold standard for the treatment of severe cases followed by gradual tapering over 6 months. A maintenance therapy with azathioprine or methotrexate is also recommended. Rituximab is effective in ANCA positive patients with refractory or renal disease. Second line agents include IV Ig, Interferon- α & leukotriene receptor antagonists. Mepolizumab seems to be a promising therapeutic alternative.²⁰ We report this case because of rarity of disease with unusual presentation and association of cutaneous amyloidosis. Due to the systemic life threatening complications associated with CSS, there is a need for early recognition and prompt treatment.

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REFERENCES

- Masi AT, Hunder GG, Lie JT, Michel BA, Bloch DA, Arend WP, et al. The American College of Rheumatology 1990 criteria for the classification of Churg-Strauss syndrome (allergic granulomatosis and angiitis). *Arthritis Rheum.* 1990;33:1094–100.
- Churg J, Strauss L. Allergic granulomatosis, allergic angiitis, and periarteritis nodosa. *Am J Pathol.* 1951;27:277–301.
- Schwartz RA, Churg J. Churg–Strauss syndrome. *Br J Dermatol.* 1992;127:199–204.
- Franco L, Ruff K, Mertz L, Lam-Himlin DM, Heigh R. Eosinophilic Granulomatosis with Polyangiitis and Diffuse Gastrointestinal Involvement. *Case Rep Gastroenterol.* 2014;8:329-36.
- Pagnaux C. Churg-Strauss syndrome: evolving concepts. *Discov Med.* 2010;9(46):243-52.
- Greco A, Rizzo MI, De Virgilio A, Gallo A, Fusconi M, Ruoppolo G, Altissimi G, De Vincentiis M. Churg-Strauss syndrome. *Autoimmun Rev.* 2015;14(4):341-8.
- Vaglio A, Buzio C, Zwerina J. Eosinophilic granulomatosis with polyangiitis (Churg–Strauss): state of the art. *Allergy.* 2013;68(3):261-73.
- Sablé-Fourtassou R, Cohen P, Mahr A, Pagnoux C, Mouthon L, Jayne D, et al. Antineutrophil Cytoplasmic Antibodies and the Churg–Strauss Syndrome. *Ann Intern Med.* 2005;143:632–638.
- Hauser T, Mahr A, Metzler C, Coste J, Sommerstein R, Gross WL, et al. The leucotriene antagonist montelukast and the risk of Churg-Strauss syndrome: a case cross-over study. *Thorax.* 2008;63(8):677-82.
- Bottero P, Motta F, Bonini M, Vecchio F, Ierna F, Cuppari I, et al. Can HLA-DRB4 Help to Identify Asthmatic Patients at Risk of Churg-Strauss Syndrome? *ISRN Rheumatol.* 2014;2014:843804.
- Solans R, Bosch JA, Pérez-Bocanegra C, Selva A, Huguet P, Alijotas J, et al. Churg-strauss syndrome: outcome and long-term follow-up of 32 cases. *Rheumatology (Oxford).* 2001;40(7):763-71.
- Lanham JG, Elkon KB, Pusey CD, Hughes GR. Systemic vasculitis with asthma and eosinophilia: a clinical approach to the Churg-Strauss syndrome. *Medicine (Baltimore).* 1984;63:65–81.
- Chumbley LC, Harrison EG Jr, DeRemee RA. Allergic granulomatosis and angiitis (Churg-Strauss syndrome): report and analysis of 30 cases. *Mayo Clin Proc.* 1977;52:477–84.
- Sinico RA, Bottero P. Churg-Strauss angiitis. *Best Pract Res Clin Rheumatol.* 2009;23(3):355-66.
- Strauss L, Churg J, Zak FG. Cutaneous lesions of allergic granulomatosis; a histopathologic study. *J Invest Dermatol.* 1951;17(6):349-59.
- Bosco L, Peroni A, Schena D, Colato C, Girolomoni G. Cutaneous manifestations of Churg-Strauss syndrome: report of two cases and review of the literature. *Clin Rheumatol.* 2011;30(4):573-80.
- Shimauchi T, Kabashima K, Tokura Y. Solar urticaria as a manifestation of Churg–Strauss syndrome. *Clin Exp Dermatol.* 2007;32(2):209-10.
- Maamar M, Tazi-Mezalek Z, Harmouche H, El Hamany Z, Adnaoui M, Aouni M. Churg-Strauss syndrome associated with AA amyloidosis: a case report. *Pan Afr Med J.* 2012;12:30.
- Neumann T, Manger B, Schmid M, Kroegel C, Hansch A, Kaiser WA, et al. Cardiac involvement in Churg-Strauss syndrome: impact of endomyocarditis. *Medicine (Baltimore).* 2009;88(4):236-43.
- Groh M, Pagnoux C, Baldini C, Bel E, Bottero P, Cottin V, et al. Eosinophilic granulomatosis with polyangiitis (Churg-Strauss) (EGPA) Consensus Task Force recommendations for evaluation and management. *Eur J Intern Med.* 2015;26(7):545-53.

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