# Correspondence

## Urticarial vasculitis and deep venous thrombosis following administration of intravenous cocaine

doi: 10.1111/ced.14215

Cocaine is associated with cardiac events, arterial dissections, strokes and diverse types of vasculitis,[1] including urticarial vasculitis.[2] Cocaine-associated deep venous thrombosis (DVT) has rarely been reported.[3] We report the case of an intravenous cocaine user who developed urticarial vasculitis and thrombosis of the inferior vena cava.

A 40-year-old man with a history of chronic spontaneous urticaria, hepatitis C viral infection, and use of intravenous and inhaled cocaine presented with myalgia and pruritic lesions on both legs. During the previous weeks, he had been injecting intravenous cocaine into his thighs and arms.

On physical examination, polycyclic erythematoviolaceous plaques and oedema were observed on both legs, together with some tense blisters on the right leg (Fig. 1a).

Histological examination revealed a moderate perivascular and interstitial inflammatory infiltrate composed of neutrophils and eosinophils, along with karyorrhexis (Fig. 2). Direct immunofluorescence revealed granular deposits of IgM, C3 and fibrinogen in dermal blood vessel walls. Complete blood count, metabolic panel and cryoglobulins were negative or normal.

Based on the clinical and histological features, a diagnosis of urticarial vasculitis was made. Prednisone 40 mg/daily was prescribed. Over the following 4 days, the patient attended the dermatology department, resulting in complete resolution of cutaneous lesions; however, the patient showed severe oedema of the legs, and developed dyspnoea (Fig. 1b).

Vascular computed tomography (angio-CT) was performed in the emergency department, and revealed thromboses in the bilateral femoral and renal veins and the inferior vena cava. No pulmonary thromboembolism was seen. Laboratory tests including autoimmune antibodies (antiphospholipid, anticardiolipin and anti-beta-2-glycoprotein antibodies), serum complement, Protein C

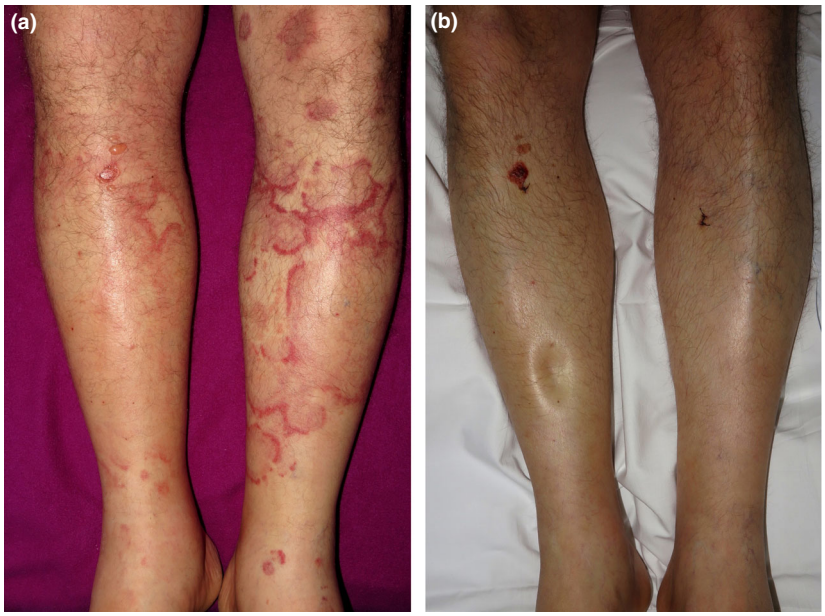


**Figure 1** (a) Urticarial vasculitis following cocaine injection. Polycyclic erythematoviolaceous plaques and oedema on both legs. Tense blisters on the right leg. (b) Complete resolution of cutaneous lesions and marked oedema on both legs (4 days later).

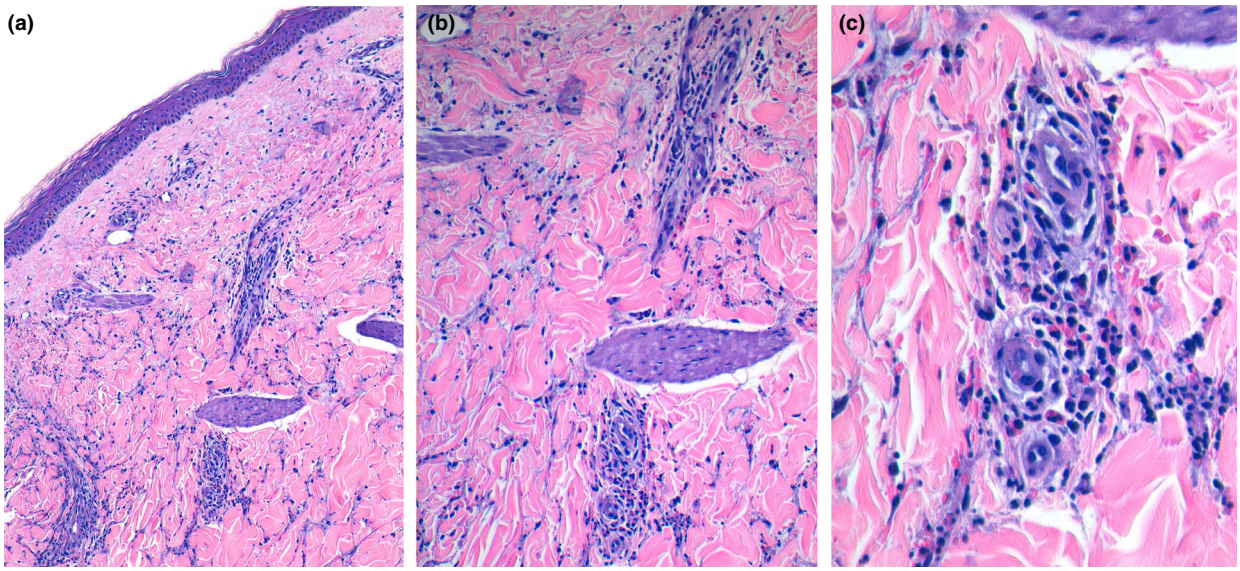


**Figure 2** (a) Perivascular and interstitial inflammatory infiltrate); (b, c) perivascular inflammatory infiltrate composed of eosinophils and neutrophils. Karyorrhexis, erythrocyte extravasation and swollen endothelial cells. Haematoxylin and eosin, original magnification (a) × 40; (b) × 100; (c) × 200.

and S, antithrombin III and determination of Factor V and G20210A (prothrombin gene) mutations were negative or normal.

The patient was admitted and started on enoxaparin 1 mg/kg twice daily. During the following months angio-CT revealed partial repermeabilization of the inferior cava and renal veins. The patient remained asymptomatic and enoxaparin was stopped after 12 months.

Cocaine is associated with multiple dermatological conditions such as skin necrosis, chronic skin ulcers, cutaneous fibrosis, Raynaud phenomenon, Buerger disease, purpura, pseudovasculitis and diverse forms of vasculitis.[1] Approximately 70% of cocaine is adulterated with levamisole. Both cocaine and levamisole can induce vasculitis. The aetiopathogenesis remains elusive; cocaine and levamisole can produce autoantibodies (against human neutrophil elastase and cytoplasmic/perinuclear antineutrophil cytoplasmic antibody, among others).[4] Urticarial vasculitis is a type III hypersensitivity reaction with deposition of antigen–antibody complexes in the vascular lumina. It is characterized by long-lasting weals (frequently painful and/or purpuric) and histological findings of leucocytoclastic vasculitis. UV is mostly idiopathic, although can be associated with autoimmunity, neoplasms, infections and drugs. The association between UV and cocaine has rarely been described, with only one previous case[2] reported, to our knowledge.

The literature on cocaine-induced DVT is also very limited.[3] An increase in blood viscosity and in concentrations of plasminogen activator inhibitor, platelet factor 4 and von Willebrand factor have been observed after cocaine administration.[5]

In conclusion, we report a patient with urticarial vasculitis and DVT following cocaine injections. Severe arterial and venous complications can be observed with the use of cocaine. Cutaneous manifestations can be the first clinical sign.

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*Conflict of interest: the authors declare that they have no conflicts of interest.*

*Accepted for publication 6 March 2020*

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