Answer to Dermacase *continued from* **page 748**

1. Drug-induced leukocytoclastic vasculitis

Leukocytoclastic vasculitis (LCV) is an uncommon autoimmune disease characterized pathologically by fibrinoid necrosis of the blood vessel wall and immune complex deposition.[1] It is characterized by asymptomatic, nonblanching, palpable purpura, most commonly on the legs; however, it can be itchy or burning. Other features of LCV depend on the size of the involved blood vessels. Leukocytoclastic vasculitis is classified according to blood vessel size into 3 main categories (**Table 1**).[2,3] Small-vessel vasculitis, also known as *hypersensitivity angiitis* and *necrotizing venulitis*, is characterized by nonblanching, palpable purpura, as seen in our patient. Medium-vessel vasculitis is characterized by subcutaneous nodules, ulcers, livedo reticularis, and digital gangrene. Large-vessel vasculitis rarely presents on the skin.[2-5]

Diagnosis

Small-vessel LCV is diagnosed clinically and confirmed by skin biopsy. Skin biopsy should be sent for routine microscopy and direct immunofluorescence. The next step after confirming the diagnosis is to look for the possible cause. Multiple causes have been implicated in the pathogenesis of small-vessel LCV. These include infections, drugs, autoimmune diseases, and malignancies.[1-5] Infections that have been implicated in the pathogenesis include streptococcal infections (the most common) and hepatitis B and C. Multiple drugs have been implicated, most commonly nonsteroidal anti-inflammatory drugs, penicillin, furosemide, hydrochlorothiazide, and minocycline. Different autoimmune diseases have been implicated, including systemic lupus erythematosus and rheumatoid arthritis. Small-vessel LCV can present as a paraneoplastic condition, most commonly associated with hematologic malignancies. However, LCV is most commonly idiopathic.[5]

Regardless of the cause of LCV, noncutaneous involvement should be ruled out. Blood tests for the following should be done: complete blood count, erythrocyte sedimentation rate, C-reactive protein level, and kidney and liver function. Urinalysis and urine microscopy should also be done. Other investigations depend mainly on the patient's medical history and physical examination findings (eg, antinuclear antibody level, C3 and C4 levels, immunoglobulin A level, serum protein electrophoresis, and throat culture) (**Box 1**).

Differential diagnosis

Small-vessel LCV on the legs can be mistaken for petechiae, stasis dermatitis, and pigmented purpuric dermatosis. Petechiae are pinpoint-sized, nonpalpable red

Box 1. Recommended investigations

- Blood pressure measurement
- Complete blood count, erythrocyte sedimentation rate, C-reactive protein level
- Kidney function test including urinalysis and urine microscopy
- Stool test for occult blood
- Liver function test
- For possible underlying infection: throat culture, antistreptolysin O antibody titre, hepatitis B and C serology
- For possible autoimmune disease: antinuclear antibody, rheumatoid factor, and C3 and C4 levels; check p-ANCA, c-ANCA, and ENA levels if indicated clinically
- Other tests: cryoglobulin levels, serum protein electrophoresis, immunoglobulin A level

c-ANCA—cytoplasmic antineutrophil cytoplasmic antibody, ENA—extractable nuclear antigen, p-ANCA—perinuclear antineutrophil cytoplasmic antibody.

Table 1. Features of leukocytoclastic vasculitis

DISEASE	IMPORTANT FEATURES
Large-vessel	
• Takayasu arteritis	Age < 50 y, claudication, blood pressure difference of > 10 mm Hg between arms
• Giant cell arteritis	Age > 50 y, unilateral headache, high ESR, jaw claudication
Medium-vessel	
• Polyarteritis nodosa	Livedo reticularis, ulcers, SC nodules, high blood pressure, testicular pain
• Kawasaki disease	Occurs in young children; fever, cervical lymphadenopathy, coronary artery aneurysm
Small-vessel	
• Microscopic polyangiitis	Glomerulonephritis, alveolar hemorrhage, positive test result for p-ANCA
• Wegener granulomatosis	Ulceration, SC nodules, upper and lower respiratory tract and kidney involvement, positive test result for c-ANCA
• Churg-Strauss syndrome	Ulceration, SC nodules, asthmalike symptoms, lung and kidney involvement, positive test result for p-ANCA
• Henoch-Schönlein purpura	Age < 20 y; palpable purpura; kidney, bowel, and joint involvement

c-ANCA—cytoplasmic antineutrophil cytoplasmic antibody, ESR—erythrocyte sedimentation rate, p-ANCA—perinuclear antineutrophil cytoplasmic antibody, SC—subcutaneous.
Data from Sunderkötter and Sindrilaru,[2] and Carlson et al.[3]

macules. Stasis dermatitis is a pruritic condition seen in people with evidence of venous insufficiency (eg, with dilated veins and hemosiderin deposition on the skin). Pigmented purpuric dermatosis is characterized by partially palpable, usually asymptomatic, macules that develop gradually over months.

Treatment

Mild, skin-limited disease does not require treatment apart from rest and elevation of the legs. However, if a cause is identified, then it should be treated. Presence of arthralgia or arthritis requires use of nonsteroidal anti-inflammatory drugs or a short course of prednisone.[5] Most patients will respond to such treatment. However, some patients will become steroid dependent; therefore, steroid-sparing agents should be used. These include dapsone, colchicine, azathioprine, and mycophenolate mofetil. The patient in this case was advised to stop taking hydrochlorothiazide and increase the dose of amlodipine. The rash resolved in 3 weeks.

Dr Binamer is a fellow in advanced medical dermatology at the University of Toronto in Ontario.

Competing interests
None declared

References

1. Kawakami T. New algorithm (KAWAKAMI algorithm) to diagnose primary cutaneous vasculitis. *J Dermatol* 2010;37(2):113-24.
2. Sunderkötter C, Sindrilaru A. Clinical classification of vasculitis. *Eur J Dermatol* 2006;16(2):114-24.
3. Carlson JA, Ng BT, Chen KR. Cutaneous vasculitis update: diagnostic criteria, classification, epidemiology, etiology, pathogenesis, evaluation and prognosis. *Am J Dermatopathol* 2005;27(6):504-28.
4. Sais G, Vidaller A, Jucglà A, Servitje O, Condom E, Peyri J. Prognostic factors in leukocytoclastic vasculitis: a clinicopathologic study of 160 patients. *Arch Dermatol* 1998;134(3):309-15.
5. Fiorentino DF. Cutaneous vasculitis. *J Am Acad Dermatol* 2003;48(3):311-40.