

# Cocaine-induced ecchymotic rash



**FIGURE 1.** Purpuric violaceous rash with surrounding erythema on the patient's left arm.

**A** 50-YEAR-OLD MAN presented with a painful rash over his extremities for the past 2 days (**Figure 1**). He said he had been in his usual state of health until the day he woke up with the rash. The rash was initially limited to his upper and lower extremities, but the next day he noticed similar lesions over his cheek and hard palate. He was a smoker and was known to have hepatitis C virus infection. He denied recent trauma, fever, or chills. He said he had snorted cocaine about 24 hours before the rash first appeared.

On examination, his vital signs were normal. He had an extensive retiform rash involving the upper and lower extremities, earlobes, right cheek, and hard palate. Otherwise, the physical examination was normal.

Initial laboratory evaluation showed:

- Hemoglobin 11.5 g/dL (reference range 14.0–17.5)
- White blood cell count  $2.1 \times 10^9/L$  (4.5–11.0)
- Platelet count  $168 \times 10^9/L$  (150–350)
- Absolute neutrophil count  $0.9 \times 10^9/L$  ( $\geq 1.5$ )
- Urine toxicology screen positive for cocaine.

He was admitted to the hospital and was started on intravenous vancomycin and piperacillin-sulbactam for a presumed infectious cause of the rash.

One day later, testing for myeloperoxidase-specific antineutrophil cytoplasmic antibodies (p-ANCA) was strongly positive. Skin biopsy revealed leukocytoclastic vasculitis with small-vessel thrombosis. These findings, along with the timing of the appearance of the rash after his cocaine use, led to a diagnosis of levamisole-adulterated cocaine-induced vasculitis.

## ■ LEVAMISOLE AND VASCULITIS

Levamisole used to be used as an antihelminthic and as an adjuvant chemotherapeutic agent, but it is also added to cocaine to increase its euphoric and psychotropic effects.<sup>1</sup> It has been withdrawn from the market for human use because of toxic side effects including agranulocytosis, vasculitis, and autoantibody positivity.

Levamisole-adulterated cocaine has been known to induce ANCA-associated vasculitis.<sup>2</sup> Symptoms of levamisole-induced vasculitis usually start a few hours to a few days after the last dose of cocaine. Almost all patients with this condition present with a characteristic retiform purpuric rash, which has a predilection for the ears, nose, cheeks, and extremities. It also causes neutropenia and agranulocytosis (as well as autoantibodies, including antinuclear antibodies and antiphospholipid antibodies).

The characteristic lesions tend to be in a stellate

pattern with erythematous borders. They often but not always have a central necrotic area. The location of the rash and the fact that it resolves after discontinuation of the offending agent help distinguish this condition from other types of vasculitis. Usually, antibodies against myeloperoxidase are present.<sup>3</sup>

Leukopenia does not typically occur in patients with primary vasculitis syndromes. The literature is mixed on the presence or absence of specific ANCA.

Inflammatory and noninflammatory vasculopathic disorders that can present similarly include disseminated intravascular coagulation, antiphospholipid syndrome, warfarin-induced skin necrosis, paroxysmal nocturnal hemoglobinuria, cryoglobulinemia, vasculitis, and calciphylaxis.

Treatment is mainly supportive, but emollients and steroids<sup>4</sup> have been reported to alleviate the symptoms. Surgical debridement is

rarely needed unless skin necrosis is extensive.

Levamisole-induced vasculitis is a diagnosis of exclusion but should be strongly considered when the rash is associated with recent cocaine use, retiform purpura, or bullae with skin involvement, leukopenia, and positive ANCA in high titers.<sup>3</sup> If cocaine use is discontinued, the syndrome is expected to resolve. ■

## REFERENCES

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