CASE REPORT

Cocaine-induced leg ulceration

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SUMMARY

A 48-year-old woman presented with a red, pruritic and painful skin rash on her legs bilaterally after she snorted cocaine. This was associated with fever and cough. Physical examination showed large violaceous plaques and large flaccid bullae, involving bilateral lower extremities. Blood work showed neutropoenia with absolute neutrophil count of 0.64×10^9 cells/L. Antinuclear antibody, perinuclear antineutrophil cytoplasmic antibody and anti-double-stranded DNA were positive. Biopsy showed thrombogenic vasculopathy which is consistent mainly with levamisole ingestion that was reported with levamisole ingestion. The patient was counselled to stop cocaine misuse and treated with skin emollients and antibiotics for the pneumonia that was discovered on the chest X-ray. Skin ulcers improved and she was discharged in stable condition. Ten days after discharge, she was readmitted with new lesions and worsening necrotic ulcers from the old lesions. The patient admitted to snorting cocaine again a few days after being discharged.

BACKGROUND

A unique skin rash and agranulocytosis have been reported due to consumption of cocaine adulterated with levamisole. The incidence of levamisole-adulterated cocaine is on the rise, as the US Drug Enforcement Agency has reported that over 78% of cocaine in US contained levamisole. Clinicians should consider this new clinical entity in patients with cocaine misuse presenting with neutropoenia and skin rash.

CASE PRESENTATION

A 48-year-old woman with a history of hypertension was admitted for evaluation of a skin rash fever and a cough. She rapidly developed a red, pruritic and painful rash on her legs bilaterally few days after snorting cocaine. She also reported fever, chills, cough and a left-sided pleuritic chest pain. The physical examination was significant for large violaceous plaques and large flaccid bullae, involving bilateral lower extremities (figure 1).

INVESTIGATIONS

Complete blood count was remarkable for neutropoenia with absolute neutrophil count of 0.64×10^9 cells/L and urine toxicology positive for cocaine. A chest X-ray showed left lower lobe infiltrate suggestive of pneumonia and the patient was started on antibiotics. Further serologies were performed including antinuclear antibody (ANA), anti-double-stranded DNA and perinuclear antineutrophil cytoplasmic antibody (p-ANCA) were positive by immunofluorescent assay and enzyme

immunoassay that were positive. An extractable nuclear antigen panel was positive for antichromatin antibody. Whereas cytoplasmic antineutrophil cytoplasmic antibody (c-ANCA) was negative. Antihistone antibody and cryoglobulins were negative as well. A wound swab was negative for any bacterial or fungal culture and stain. A skin lesion biopsy was performed and showed thrombogenic vasculopathy with multiple microthrombi within the superficial vascular plexuses with no inflammatory infiltrates. Histopathological findings along with neutropoenia were most consistent with levamisole that is usually added to powdered cocaine to increase weight. Levamisole was tested for and was positive.

OUTCOME AND FOLLOW-UP

A few days after admission, the skin lesions improved and the patient was discharged home in stable condition. She was advised to stop misusing cocaine. Within 10 days of being discharged she was readmitted again with new skin lesions and worsening necrotic ulcers from the old ones. The patient was confronted and she admitted for ingesting cocaine again from the same dealer.

DISCUSSION

The misuse of cocaine carry risks of many side effects most of them are being attributed to adulterants being added, levamisole is one of them. Levamisole has been used in the treatment of colon, breast and lung cancers in 1990s. Currently, it is still used in veterinary medicine in North America. Agranulocytosis was reported in 2.5–13% of patients taking levamisole for therapeutic purposes.^{1 2} The reason behind choosing levamisole as an adulterant is not clear; where some postulated that it could enhance euphoric effect, others postulated that it could be used as a 'signature' to track its market spread.³ We present a case of

Figure 1 Large violaceous plaques and large flaccid bullae, involving lower extremities.

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neutropoenia and skin lesions due to cocaine adulterated with levamisole. Although it has a short half-life (5.6 h), levamisole was tested positive in our patient using gas chromatography. Her workup to identify an alternative aetiology for neutropoenia was negative. Positive c-ANCA, p-ANCA, ANA and antiphospholipid antibodies have been frequently reported in patients with agranulocytosis associated with levamisole.^{3 4} Some studies have suggested that granulotoxicity is autoimmune in nature. Levamisole seems to act as a hapten, stimulating the host immune system to form isoimmune antibodies to antigens found on neutrophils.¹ Having positive serologies for ANCA could further suggest that autoantibodies are the cause for agranulocytosis.¹ Agranulocytosis is also more frequently reported in human leucocyte antigen B-27 positive patients and recovers in 5–10 days after discontinuation of cocaine adulterated with levamisole. The rash seen in levamisole-induced cutaneous vasculopathy is more common in the lower extremities, ears and face. The development of the rash was more prominent in female patients. Most of the skin lesions had retiform pattern.^{4 5} The diagnosis might be very difficult especially if patients refused to declare cocaine use. Agranulocytosis also makes the clinical picture more confusing. Agranulocytosis caused by cocaine adulterated with levamisole has been reported from different regions of North America.¹ The literature suggests that levamisole associated with neutropoenia is underreported and underdiagnosed.⁴ Cocaine-induced pseudovasculitis has been reported in the literature but the presence of neutropoenia was either not reported or overlooked. Clinicians should consider this new clinical entity in patients with cocaine misuse presenting with neutropoenia.

Learning points

- ▶ Skin ulcers and neutropoenia in patient with history of cocaine misuse should alert the treating physician for levamisole-induced disease.
- ▶ Levamisole-induced cutaneous vasculopathy is more common in lower extremities, ears and face.
- ▶ Treatment is to refrain from misusing any cocaine products.

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