Cocaine-Induced Cutaneous Necrosis: More Histologic and Clinical Evidence to Indicate Levamisole as the Culprit

Erin K. Burns¹, Brian J. Hall², Hala F. Adil¹, Carol W. Stanford¹
¹University of Missouri Kansas City, Kansas City, MO, ²University of Utah, Salt Lake, UT

INTRODUCTION & METHODS

• Levamisole is a veterinary antihelminthic that has been previously used as an immunomodulating agent and cancer adjuvant.
• Cutaneous necrotizing vasculitis from levamisole was first reported in 1978 when it was used in a patient with breast cancer.¹
• Neutropenia from levamisole appears to due to autoimmune and complement-dependent granulocytotoxic antibodies.²
• Purpura of the ears has been described as a vasculopathy in children being treated with levamisole for nephrotic syndrome.³
• Cocaine contamination with levamisole has been detected since 2003 and is believed to be used as a cutting agent to potentiate cocaine’s euphoric effects.
• We searched PubMed for literature dated from 1970 to 2012 using MeSH terms cocaine, levamisole, and vasculitis.

CONCLUSION

• Our patients displayed findings suggestive of levamisole exposure:
  - Retiform purpura of the ears
  - Leukopenia and/or neutropenia
  - p-ANCA positivity
  - Histopathological features of occlusive vasculopathy with occlusive microthrombi formation and leukocytoclastic vasculitis
  - Temporal association with cocaine use

• Cocaine-levamisole-associated cutaneous necrosis is a diagnosis of exclusion made only after other etiologies of vasculitis are ruled out.
• Clinicians suspecting levamisole-induced toxicity may consider a urine toxicology screen, urinalysis, liver and renal function tests, a complete blood cell count with differential, ANCAs, antiphospholipid antibodies, lupus anticoagulant and coagulation studies.
• This case series is limited by a lack of testing for levamisole in the blood and urine.
• Susceptibilities to cocaine-levamisole-related cutaneous necrosis is warranted.

REFERENCES