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A Case of Adult Lead Toxicity in Southeast Michigan: It's Not Just the Water in Flint.

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Background: Lead is a neurotoxic heavy metal with multiple potential sources of exposure. While lead-contaminated drinking water in Southeast Michigan has been widely publicized, symptomatic lead toxicity has been rare. We present a patient with symptomatic elevated blood lead levels secondary to drinking from an imported mug.

Hypothesis: Chelation therapy is beneficial in adult patients with symptomatic lead toxicity.

Case Report: A 22-year-old woman presented for evaluation of intermittent abdominal pain. Diagnostic evaluation was notable for a Hgb of 8.5, normal electrolytes, AST 69 and ALT 106. Abdominal CT showed colitis. She was treated and discharged but later referred to a tertiary care center when her serum lead level returned at 106 mcg/dL. Because of recent regional environmental lead contamination, this was thought to be secondary to contaminated ground water.

At repeat presentation, she was clinically well with no encephalopathy or abdominal pain. Additional history suggested an imported Mexican mug in which she microwave heated her daily coffee as the likely source. Notable repeat laboratories: Hgb 7.5, MCV 70.7, and serum lead level of >100 mcg/dL. Given her anemia, child bearing age, and intention for additional children, she was chelated with intravenous $CaNa_2EDTA$ and oral succimer. She was discharged home to complete the 19 day oral succimer regimen.

Diagnostic studies obtained during hospitalization suggested chronic exposure. Total porphyrins 1400 mcg/dL (<80 mcg/dL), Zinc-protoporphyrin 1256 mcg/dL (<60 mcg/dL), free protoporphyrin 144 mcg/dL (<20 mcg/dL), free erythrocyte protoporphyrin 439 mcg/dL (0-35 mcg/dL). Public health agency investigation conducted with x-ray fluorescence spectrometry confirmed the mug as a source of exposure. Household members, including the patient's children were negative for elevated lead levels.

Discussion: We present a case of adult lead toxicity secondary to drinking coffee from an imported mug, who was successfully treated with chelation therapy.

Conclusions: An open differential should be maintained until there is confirmation of a definitive source of lead exposure. Inpatient intravenous chelation therapy should be considered even in non-encephalopathic patients of childbearing age with elevated lead levels and signs of systemic toxicity.