

Lead Toxicity from Lead-Contaminated Turmeric

Justin Chen, MD, Adam J Berman, MD, Benjamin D Kessler, MD, and David C Lee, MD

Department of Emergency Medicine, North Shore University Hospital, Manhasset, New York

Background

- Lead is a known contaminant of spices originating in India and other parts of the world.

Hypothesis

- In the evaluation of lead toxicity, exposure to contaminated spices should be considered.

Methods

- A 47-year-old male complained of intermittent paresthesias of the hands, face and body for four months.
- There were no motor deficits, abdominal pain, nausea, vomiting, constipation or diarrhea.
- The patient's 38-year-old wife complained of similar but less severe symptoms.
- Their 11-year-old and 6-year-old children were both asymptomatic.
- Vital signs and physical examinations for the family were non-focal.
- The family denied use of Ayurvedic products and foreign-bought cookware or makeup. They lived in an over 70-year-old home that had been repainted recently.
- Due to persistent symptoms in the father, he was treated with two 5-day courses of succimer (30 mg/kg, then 10 mg/kg), which reduced the blood lead concentration and symptoms over the course of two months.
- No other family members required chelation therapy.



Results

- Whole blood lead concentrations are presented in Table 1.
- Hemoglobin concentration for the mother was 10.9 g/dL and normocytic. The other family members were within normal limits.
- Zinc protoporphyrin for the father was 276 mcg/dL and peripheral nerve biopsy taken from him demonstrated autonomic nerve fiber density consistent with small fiber neuropathy.
- Upon home evaluation by the Department of Health, turmeric the patients brought back from India six months prior had a measured lead concentration of 4000 ppm.
- The family reported consuming this turmeric daily. The 6-year-old consumed the least and had the lowest lead concentration.

Discussion

- Lead toxicity in a family from chronic daily ingestion of lead-contaminated turmeric required chelation in the most symptomatic family member.
- Removing the turmeric from the home resulted in adequate decreases in blood lead concentrations.
- The presence of lead in spices brought to America from South Asia should be considered in the evaluation of lead poisoning.
- Adulteration of spices with lead may be done to increase weight-based sales or to enhance color and flavor.

Conclusion

- Clinicians should consider foreign spices as a source of significant lead exposure.

Table 1: Lead Concentrations (mcg/dL) in Family Members

	Week 0	Week 4	Week 9
47-year-old male	57	27*	18**
38-year-old female	42	24	16
11-year-old male	27	17	
6-year-old female	9		

*after succimer 30 mg/kg for 5 days

**after succimer 10 mg/kg for 5 days

