Denture cream

An unusual source of excess zinc, leading to hypocupremia and neurologic disease

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Abstract

Background: Chronic, excess zinc intake can result in copper deficiency and profound neurologic disease. However, when hyperzincemia is identified, the source often remains elusive. We identified four patients, one previously reported, with various neurologic abnormalities in the setting of hypocupremia and hyperzincemia. Each of these patients wore dentures and used very large amounts of denture cream chronically.

Objective: To determine zinc concentration in the denture creams used by the patients as a possible source of excess zinc ingestion.

Methods: Detailed clinical and laboratory data for each patient were compiled. Tubes of denture adhesives were analyzed for zinc content using dynamic reaction cell–inductively coupled plasma–mass spectrometry. Patients received copper supplementation. Copper and zinc levels were obtained post–treatment at varying intervals.

Results: Zinc concentrations ranging from about 17,000 to 34,000 μg/g were identified in Fixodent and Poli–Grip denture creams. Serum zinc levels improved in three patients following cessation of denture cream use. Copper supplementation resulted in mild neurologic improvement in two patients who stopped using denture cream. No alternative source of excess zinc ingestion or explanation for hypocupremia was identified.

Conclusion: Denture cream contains zinc, and chronic excessive use may result in hypocupremia and serious neurologic disease.

Footnotes

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