Optic Neuropathy, Myelopathy, Anemia, and Neutropenia Caused by Acquired Copper Deficiency After Gastric Bypass Surgery.

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BACKGROUND: Malabsorptive bariatric surgery is rapidly becoming a major cause of copper deficiency given the increasing prevalence of these procedures for morbid obesity. Acquired copper deficiency can present with clinically significant hematologic and neurological manifestations. Although hematologic manifestations of copper deficiency are rapidly reversible, significant neurological improvement after copper supplementation therapy is unusual and many patients remain debilitated and may only experience, at best, stabilization of the neurological manifestations.

FINDINGS: Here we present a case of an undiagnosed copper deficiency several years after bariatric gastric bypass surgery, in a patient who concomitantly used zinc-containing denture cream for several years, associated with anemia, neutropenia, myelopathy, respiratory failure, and bilateral optic neuropathy, which caused major vision loss. This patient was also a heterozygote carrier of the 5,10-methylenetetrahydrofolate reductase A1298C gene polymorphism, which may affect copper metabolism.

RESULTS: Intravenous copper repletion resulted in rapid correction of hematologic indices. However, neurological manifestations, including vision loss responded only modestly to copper supplementation, despite achieving normal blood copper concentrations.

CONCLUSION: Clinicians should consider copper deficiency in patients at risk, as in this case, as a delayed diagnosis can lead to irreversible disability due to neurological manifestations.

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