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Short Communications

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Tracing Medication Reactions to Detect Metal Deficiency in a Case of Progressive Polyneuropathy

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Background

Polyneuropathy in End Stage Renal Disease (ESRD) is highly prevalent, occurring in over 50% of patients, and the diagnosis is often straightforward. However, these patients frequently have additional comorbidities such as prior strokes, spinal stenosis, malnutrition and polypharmacy, which can confound the clinical picture. We present a 72-year-old woman with ESRD and a stable polyneuropathy which rapidly progressed and led to falls and loss of independence. A careful history and medication reconciliation led to her diagnosis.

Case Report

A 72-year-old woman with a history of end-stage renal disease on hemodialysis, gastric bypass, and hypothyroidism presented with chronic bilateral lower extremity neuropathy for two years that progressively ascended and spread to the hands in the few months prior. A previous lumbar spine MRI revealed a possible L5 nerve sheath tumor. Upon admission, TSH and thyroid hormone were found to be significantly elevated. Vitamin B12 was within normal limits. Subsequent cervical and thoracic spine MRI revealed dorsal column hyperintensity consistent with subacute combined degeneration. Further investigation revealed significantly low ceruloplasmin and copper levels. The patient was found to be taking an AREDS2 supplement for age-related macular degeneration at the recommended dose of two tablets daily; each tablet contains 40 mg of zinc (80 mg daily), which is known to impair copper absorption. The patient was treated with high dose intravenous copper.

Conclusions

The rapid progression of symptoms in a previously stable patient with ESRD polyneuropathy should prompt further exploration. This patient with risk factors for copper deficiency (prior bypass surgery and zinc supplementation therapy) was found to have severely low copper levels. The prevalence of symptomatic copper deficiency in ESRD patients is not well established and it is not known whether monitoring of copper levels is indicated in patients who are on high dose zinc supplements for retinal disease. This case suggests further study is indicated.

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