A rare case of myelopthy and pancytopenia due to copper deficiency after denture cream use

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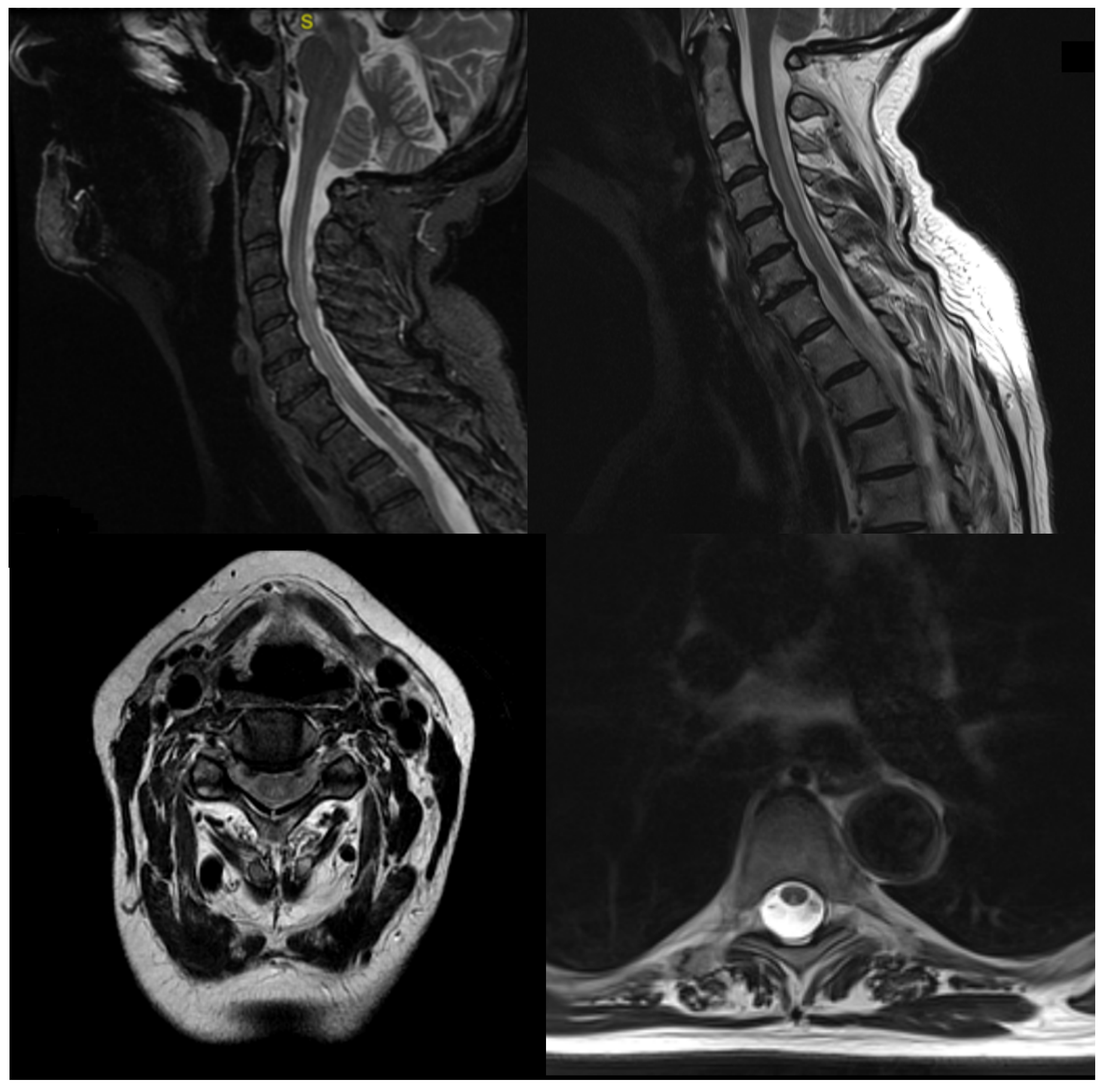
PATIENT: A 58 years-old Caucasian woman presented with a 6-months history of progressive astheny, gait disturbances and distal paraesthesias.

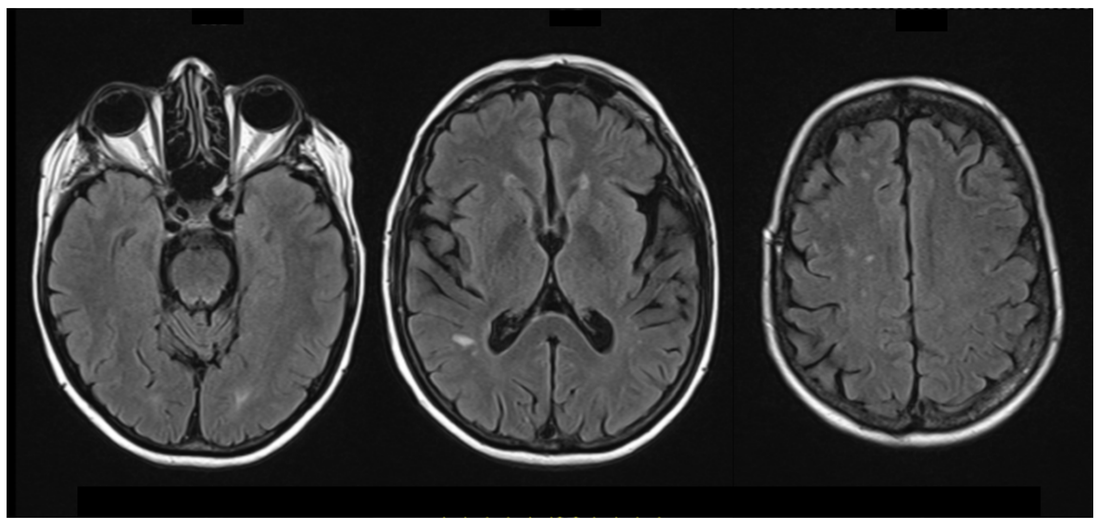
Her past medical history included a cranio-cervical trauma during childhood, a diagnosis of discoid lupus erythematosus (with recent exams showing ANA 1:320, pattern speckled), gastroesophageal reflux with endoscopically documented signs of acute and chronic antral gastritis and chronic renal desease with a recent kidney biopsy showing focal glomerulosclerosis. She had been wearing denture for twenty-five years after a severe pyorrhea, and used denture cream chronically.

Clinical examination revealed severe sensory ataxia, distal greater than proximal paraesthesias and decreased vibratory sensation in hands and feet, sensory level at bisiliac line, hyperreflexia, extensor plantar response.

EXAM:

- Somatosensory and visual evoked potentials (PES and PEV) resulted altered bilaterally.
- Nerve conduction study was normal.
- T2 weighted MRI spinal cord imaging showed hyperintense lesions in the dorsal columns of cervical and thoracic tracts (C3-D7). Brain MRI was unremarkable.
- CSF analysis showed faint oligoclonal bands in the CSF and serum and proportional increase IgG/ albumin, consistent with passive transfert due to barrier damage.
- Antibodies against aquaporin-4 were negative
- Serologic testing for HIV, Parvovirus B19, HTLV1-2, Lyme, syphilis and dosage of B12, folic acid, vitamine E were normal.
- She had white blood cell count of 3.10x109/L (4.50-9.8), hemoglobin values of 9.5 g/dl (12-16), hematocrit 30.9% (35-47); bone marrow biopsy ruled out hypercellularity with mild myelodysplastic syndrome.
- Serum copper concentration was below dosable value, zinc concentration was 2.07 mg/L (0.66-1.10), ceruloplasmin level was 0.02 g/L (0.2-0.6).





Accordingly, the patient was diagnosed to suffer from myelodisplasia, myelopathy and optic neuropathy due to zinc induced hypocupremia. Denture cream was identified as a source of zinc intoxication. She discontinued the use of denture cream and oral copper supplementation 5 mg/die was started.

CONCLUSION: This report underlines the importance to include serum copper levels as part of the myelopathy diagnostic workup, especially in those involving posterior columns and associated with hematological abnormalities, in order to avoid diagnostic delays and to improve treatment outcomes.

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