Successful treatment of aceruloplasminemia with Tetrabenazine: a case report

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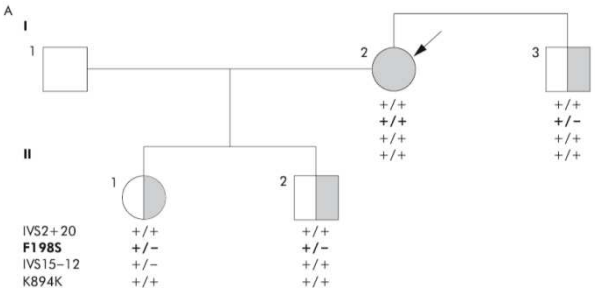
Introduction

Aceruloplasminemia (ACP) is a rare iron-overload inherited disorder. Chelation therapies usually remove peripheral iron deposits but fail to do so in brain, leading to chronic neurological diseases, with a mix of various hyperkinesias that often dominate the phenotypic expression.

Here we report the case of a patient affected by ACP, due to ***homozygous p. Phe217Ser mutation (previously known as F198S)****,* ***diagnosed at the age of 40 y.o.****, who underwent to* ***chelation therapy with low-dosage Deferiprone plus Vitamin C and E since 14 years****.*

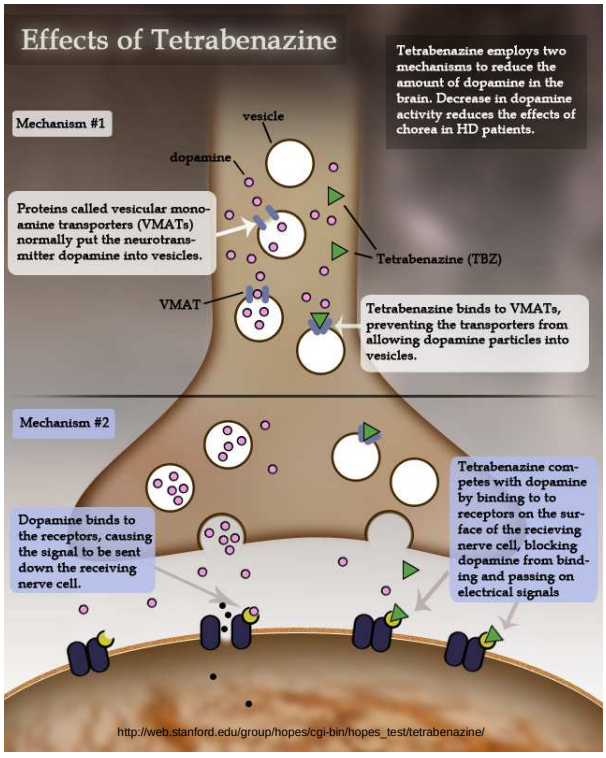
Despite therapy, neurological symptoms worsened and at the age of 54 a full neurological re-evaluation showed ***marked chorea*** *and* ***oro-buccal dyskinesia****,* ***bradykinesia*** *and* ***poor motor coordination*** *affecting* ***balance*** *and, partially,* ***walking****.* ***Scanning dysarthria*** *with nasal quality was present. Furthermore, the patient reported generalized asthenia and* ***distal limb paresthesias****, besides lumbar pain. Notes of dysphagia and constipation were present as well. Only recently,* ***cognitive impairment*** *complicated the picture, with anomalies belonging to the executive field and initial limitation of functional autonomy, in absence of clear memory deficits. Mild* ***mood dysfunction*** *was present, in absence of apathy or pseudobulbar affect. On further questioning, the caregiver recalled the probable onset of first neurological symptoms since at least seven years before. Besides the above reported signs, at the neurological examination were evident:* ***pursuit saccadization****,* ***Myerson sign*** *and* ***palmomental reflex*** *both present, negative clap test,* ***exaggerated startle response****.* ***Diffuse hypotonia*** *and normal DTR were noted. Time-up-and-go test 8 sec, reduced arm swing on the right while walking.*

- *Chorea was dominating clinical expression.*
  - *(Folstein Chorea Scale score: 28/57)*
- *For this reason,* ***Tetrabenazine*** *was proposed and gradually increased at* ***12.5 mg t.i.d.*** *with a rapid and very significant improvement of the dyskinesias after 4 months.*
  - *(Folstein Chorea Scale score: 18/57)*
- ***No significant side effects*** *were reported and an increase of Tetrabenazine daily dose was proposed and well accepted by the patient.*



B

	I–2	I–3	II–1	II–2
Age (y)	40	37	22	19
Haemoglobin (g/dl)	11	13.3	11.7	15.8
Mean corpuscular volume (fl)	74	89.4	87	86.7
s-Iron (µg/dl)	27	133	29	77
Transferrin saturation (%)	9	42	8	22
s-Ferritin (µg/l)	471	432	24	59
s-Ceruloplasmin (mg/dl)	<2	21	14	14
SQUID (µg/g liver wet weight; upper normal limit 400 µg/g)	1252	696	558	539



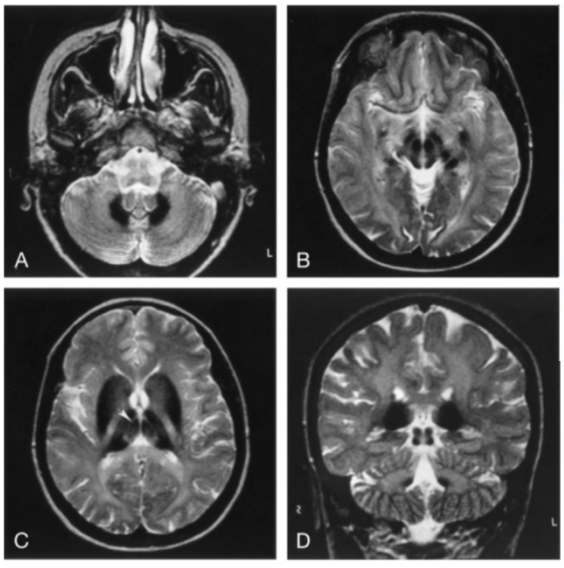


FIG 1. Spin-echo T2-weighted MR images obtained at 1.5T show marked hypointensity in the dentate nuclei (*A* and *D*), substantia nigra and red nuclei (*B*), neostriatum and thalamic nuclei (*C* and *D*), and superior and inferior colliculi (*B* and *D*). Note the relative hyperintensity of the internal medullary lamina of the thalamus (*arrow* in *C*) and the hyperintensity of the pyramidal tract in the posterior limb of the internal capsule. The white matter of the parietal and occipital lobes and of the cerebellar hemispheres is diffusely hyperintense. The cerebral cortex is questionably hypointense (*D*).
A–C, Axial images.
D, Coronal image.

Discussion

1. Choreiform dyskinesia represents a typical manifestation of aceruloplasminemia patients presenting with neurological involvement.
2. Tetrabenazine might be proposed as an effective, albeit symptomatic, therapeutic option in these cases.

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XLVII CONGRESSO NAZIONALE
22-25 OTTOBRE 2016 – VENEZIA

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