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**ABSTRACT CATEGORY**

Clinical Research

**ABSTRACT TITLE**

Could STN-DBS facilitate the management of vitamin B6 deficiency associated with high-dose levodopa in people living with Parkinson’s disease?

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OBJECTIVE

To report the management of vitamin B6 deficiency before and after subthalamic deep brain stimulation (STN-DBS) in a man with Parkinson’s disease (PD).

BACKGROUND

The relative frequency of abnormal B6 levels in people with PD is 41.4%. Low B6 levels can cause polyneuropathy and epilepsy. High B6 levels can cause polyneuropathy. B6 deficiency is a potential complication of high-dose levodopa in patients with PD [Modica 2023]. Subthalamic deep brain stimulation (STN-DBS) is an established treatment for medication-resistant motor fluctuations in patients with PD. The dose of dopaminergic agents, including levodopa, can be reduced after STN-DBS. We report the management of levodopa-associated B6 deficiency before and after STN-DBS in a man with PD.

METHODS

Case report.
RESULTS

A 53-year-old man with PD and remote history of colectomy and ileostomy due to colon cancer, developed severe sensorimotor polyneuropathy associated with undetectable B6, elevated homocysteine, and normal B12/ folate serum levels. He was taking 1950mg/day of levodopa. Patient started oral B6 supplementation (25mg/day) with progressive B6 level increase and symptom improvement [Case 1 in Canissario 2021]. B6 levels increased above normal range and multiple attempts to taper down B6 supplementation resulted in abnormally low B6 levels and symptom recurrence. Two years later, he developed medication-resistant motor fluctuations and underwent bilateral STN-DBS. Besides significant reduction in motor fluctuations, optimization of STN-DBS settings allowed to decrease levodopa to 1600mg/day. Reduction in B6 dose to 25mg every other day (Mondays, Wednesdays and Fridays) was possible with B6 level normalization and no symptom recurrence.

CONCLUSION

STN-DBS is safe and effective to ameliorate medication-resistant motor fluctuations in selected patients with PD. STN-DBS usually results in lower dopaminergic dose requirements. Since B6 deficiency has been associated with high-dose levodopa, STN-DBS could indirectly contribute to the management of B6 deficiency by allowing reduction of the dose of levodopa.