Deep brain stimulation surgery complicated by Parkinson hyperpyrexia syndrome

Sir,

Parkinson-hyperpyrexia syndrome (PHS) is a medical emergency described in patients with Parkinson’s Disease (PD) who abruptly stop levodopa treatment, and is characterized by autonomic instability, tremor, rigidity and rhabdomyolysis. PHS after deep brain stimulation (DBS) is extremely rare and may have distinctive characteristics.[1] This report presents the fourth patient with PHS after DBS.

A 59-year-old male, a known case of PD since 22 years was admitted for globus pallidus interna (GPi) DBS surgery. Twelve hours before surgery all PD medication was stopped. After the procedure he was febrile, unable to open eyes or respond to commands and developed severe tremor and rigidity of entire body. Computed tomography scan showed no abnormalities. Blood biochemistry showed serum creatine kinase (CK) elevation. With a diagnosis of PHS he was started on dopamine agonist and dantrolene. Symptoms gradually resolved. Six months after discharge the electrodes were turned on with significant motor improvement.

Till date only three patients with PHS after DBS have been reported.[2-4] The clinical features in our patient were similar to the other three patients: hyperthermia, tachycardia and hypertension, and rigidity. Our patient in addition had severe tremor and significant altered mental status, which were of much lesser degree in the other three patients. Linazasoro et al.[4] reported a case with no rigidity or tremors and speculated that the micro trauma of the subthalamic nucleus (STN) might have had a “therapeutic” effect, changing the clinical expression of PHS and thus delaying the diagnosis in their patient. There are no reliable guidelines to discontinue PD medication either gradually or acutely before DBS surgery and this needs further study. However, in all the four patients including our patient, who developed PHS after DBS, PD medication was discontinued acutely. Although infrequent, PHS should be considered and excluded when the postoperative course deviates from its normal.

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References
2. Factor SA. Fatal Parkinsonism-hyperpyrexia syndrome in a Parkinson’s
Letters to Editor


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