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TO DO OR DON’T, TO TAKE OR DON’T TAKE: STN-DBS THERAPY IN YOUNG PD PATIENT

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To do or don’t, to take or don’t take: STN-DBS therapy in young PD patient.

Abstract

Introduction. Parkinson's disease patients with impulse control disorders and dopamine dysregulation syndrome is increasingly recognized. Authors have been reported that they sometimes resolution after DBS, and sometimes worse. Case report. Our patient is a 30-year-old man with Parkinson's disease since the age of 23. The patient had motor fluctuations on the right with marked bradykinesia, bradykinesia and rigidities in the off-periods. The patient's paraphilia and sexual indiscretions against women, and it was apparent they had on period. The patient's eating habits had also changed. The patient underwent STN-DBS. Significant improvements were seen in the motor and behavior signs of the patient after the operation. Conclusion. STN-DBS may be a reasonable option when unwanted dopaminergic side effects occur and inadequate motor therapy cannot be improved with drugs and neuroleptics ineffective to prevent ICD.

Key words: parkinson's disease (PD), STN-DBS, impulse control disorders (ICD), dopamine dysregulation syndrome (DDS), drug replacement therapy (DRT), binge eating disorder (BED), dopamine.

Introduction

Parkinson's disease (PD) patients with impulse control disorders (ICD) and dopamine dysregulation syndrome (DDS) is increasingly recognized. DDS occurs due to antiparkinson therapy, and may include other psychomotor pathologies known as impulse control disorders such as punding, pathological gambling, hypersexuality, binge eating and compulsive shopping. Such impulse control disorders (ICD) may have dramatic effects on family, personal and professional life. Drug replacement therapy (DRT) is believed to play an important role in the onset of these behavioral disorders 1,2.

Binge eating phenomenon between PD patients has been defined from a few authors. The possibility of a fully trustworthy prevalence has not been reported. Binge eating intends to continuous compulsive eating segments. It is an increased diet in the form of uncontrollable consumption of more than normal food and a large amount to alleviate hunger. Zahodne reported that 1% of Parkinson's patients had binge eating disorder (BED) 3.

ICD and DDS relationship with STN Parkinson is not known exactly what happened. Authors have been reported that they sometimes resolution after DBS, and sometimes worse. We report young PD patient who has improved DDS and ICD after STN-DBS application.
Case report

Our patient is a 30-year-old man with Parkinson's disease since the age of 23. The patient recently complained of decreased motion, early termination and late onset of drug effect, difficulty in turning at night, extreme mobility and involuntary movements, especially after taking medication. The patient had motor fluctuations on the right with marked bradykinesia, bradymimia and rigidities in the off-periods.

The patient's paraphilia and sexual indiscretions against women, and it was apparent they had on period. The patient's eating habits had also changed. His movements became faster and he filled the food in their mouths in excess. At that time, even the eye could not see anything, he was becoming clumsy. What he found was bolting into his mouth; even the danger of drowning was even experienced. Whenever he needed levodopa, eating disorder could be seen. Sometimes the patient does not wait for the time to expire; sometimes he is taking the extra levodopa. He says he gets that pleasure. Even their relatives had to hide the medication.

Patient is receiving 418.75 mg of levodopa/benserazide, 250 mg of levodopa/carbidopa/entacapone the rasagiline 1 mg of daily and 200 mg, and amantadine was using intermittent apomorphine 5 mg SC. The patient was UPDRS part I –1, UPDRS part II –Off 20, UPDRS part III –Off 24 and Hoehn&Yahr stage –Off 4. The dopamine agonists were removed from the treatment. Clozapine and quetiapine treatment given by the psychiatrist was discontinued due to worsening motor symptoms.

Despite this treatment he could not sustain his life independently. The patient met the STN-DBS inclusion criteria as an idiopathic PD. Psychiatric statement was considered a contraindication for this procedure and before the patient was re-evaluated. He was no psychiatric disease before the illness. There was no history of a similar disease in his family. We were concluded that behavioral problems may be related to dopaminergic therapy. The patient was diagnosed with impulse control disorder due to dopamine dysregulation syndrome. We decided that DBS administration and reduction of dopaminergic therapy would contribute to the improvement of motor and DDS indications.

The patient underwent STN-DBS. Significant improvement was seen in the motor signs of the patient after the operation. The patient’s off - periods were reduced, and the patient was able to survive without assistance. In the second year after STN-DBS, levodopa was completely cut off. The patient now uses rasagiline 1 mg/day, and amantadine 200 mg/day. Significant improvement in DDS, ICD and BED symptoms was observed during the follow-up period of 3 years.

Discussion

We have reported here a young PD patient who develops ICD and DDS such as sexual and eating disorders after dopaminergic therapy. Significant resolution was seen in the psychiatric findings and improvement motor symptoms of our patient with STN-DBS administration and dopaminergic treatment reduction. Our opinion that STN-DBS
administration in PD with DDS and ICD associated with dopaminergic therapy may be important in disease management.

ICD, which occurs in a minority of patients with advanced PD, is rare, despite a rather regrettable psychiatric complication. ICD prevalence estimates may be greater in the PD than in the general population or healthy controls, and patients may have more than one ICD. Prevalence estimates for ICD in PD were 1.7-6% for pathological gambling, 2-10% for hypersexuality, 0.4-5.7% for compulsive shopping and 4.3% for binge eating and 3.9% for two or more ICD. ICD is a condition that leads to morbidity as a result of long-term dopaminergic therapy in Parkinson's patients are seen¹.

Reward-seeking behaviors, including consumption of delicious food, are supported by the activation of mesocorticolimbic dopamine neurocircuitry. The disorder of the mesocorticolimbisite system forms the basis of binge eating- excessive consumption of delicious food behavior ⁴. Dopamine overdose may increase nutrient motivation in PD patients treated with dopamine agonists leading to food intake, nutritional behavior and excessive eating. Dopamine replacement therapy and, in particular, D2/D3 selective dopamine agonists may cause behavioral changes, ICDs and BED ⁵.

The effect of STN therapy in significant impulsive behaviors patients is largely unknown. The ICD symptoms can be improved with the reduction of post-STN-DBS dopaminergic therapy, as well as the anew these syndromes may have emerged or some cases may worsen pre-existing ICDs ⁶,⁷.

This report also reveals the problem of how to treat ICD with PD. ICDs and related behaviors such as BED and DDS may result in cause serious trouble to the PD patient and caregiver. STN-DBS may be a reasonable option when unwanted dopaminergic side effects occur and inadequate motor therapy cannot be improved with drugs and neuroleptics ineffective to prevent ICD. Our case suggests that a background of drug-induced psychiatric disorder with worsening motor indications does not constitute an obstacle to the indication of STN-DBS.
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