

## Introduction

Tardive dystonia (TD) represents a side effect of prolonged intake of neuroleptic drugs. TD can be a disabling movement disorder persisting despite available medical treatment. Deep brain stimulation (DBS) has been reported successful in this condition although the number of treated patients with TD is still limited to small clinical studies or case reports (1-2). In this study, we present 3 additional cases of TD patients with results of bilateral globus pallidus internus (GPi) stimulation.

## Methods

The formal assessment included the Burke-Fahn-Dystonia Rating Scale (BFMDRS). The preoperative and postoperative functional and motor parts of BFMDRS were compared in each patient.

## Results

Three patients underwent successful bilateral GPi DBS for TD. The postoperative BFMDRS motor score improved by mean of 71% at the last follow-up. This improvement correlated with 60 % decrease of BFMDRS disability scores at the last follow-up. There were no surgical or hardware-related complications over follow-up period. Four attached videos show the effect of bilateral GPi DBS on TD.

## Conclusions

Our experience indicates that bilateral GPi DBS can be an effective treatment for disabling TD. The response of TD to bilateral GPi DBS is very rapid and occurs within days after the procedure.

## Learning Objectives

The learning objectives of this report are as follows:

- 1) Tardive dystonia is a good indication for bilateral pallidal stimulation.
- 2) The response to pallidal stimulation may be very quick and impressive in some patients.
- 3) The clinical improvement is observed at longer follow-up periods (36 months) postoperatively.

## References

- [1] Ostrem JL, Starr PA. Treatment of dystonia with deep brain stimulation. *Neurotherapeutics*. 2008;5:320-330.
- [2] Trottenberg T, Paul G, Meissner W, Maier-Hauff K, Taschner C, Kupsch A. Pallidal and thalamic neurostimulation in severe tardive dystonia. *J Neurol Neurosurg Psychiatry* 2001;70:557-559.

