

## Non-Programmed Surgical Interventions Of Deep Brain Stimulation Patients

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### Introduction:

The non-elective surgical revisions of deep brain stimulation (DBS) patients is a growing concern among functional neurosurgeons. Scarce literature is published concerning the surgical management of the DBS complications, particularly the non-infectious cases. Therefore, it urges to discuss its epidemiology and the surgical management provided to each case.

### Methods:

Retrospective cohort study of patients admitted for DBS surgery in between 2006-2016 at a single neurosurgical centre. The demographic - gender, age - and clinical variables - disease, the reason for non-elective re-intervention, and the performed surgical technique - were analysed.

### Results:

195 patients were included in this study (119 males; 76 females). 18 non-elective surgical interventions were performed – 9 % of treated patients (88.9% DP – 16 patients - and 11.1% DYST – 2 patients). In this subgroup, 8 patients had an infection (44.4%) – only 1 had a central nervous system infection, 5 patients had hardware exposure and 4 patients displayed a foreign body reaction. An initial system-preserving technique (non-removal of the entire implanted system) was used for every patient as a first line of treatment. Only 3 patients (16.7%) required a second surgery for removal of the entire system, of which 2 presented with an infection of the subclavian IPG pouch and 1 with hardware exposure.

### Conclusions:

Even though the entire system removal is the consensual approach to hardware complications, this data supports a system-preserving technique is a valuable approach and has a high success rate.