

Complication of deep brain stimulation for Parkinson's disease

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DESCRIPTION

A 58-year-old man with advanced Parkinson disease diagnosed 13 years before, was admitted for surgical placing of continuous bilateral high-frequency stimulation of the subthalamic nucleus.

The procedure was uneventful (lead used Medtronic DBS 3387; antibiotic prophylaxis: cefazolin 2g at time of anaesthetic induction and 1g every 8 hours in the first 24 hours) with a post-operative control CT scan showing good placement of the electrodes and no abnormalities (figure 1). The stimulation was switched on 72 hours after the procedure and within 24 hours the patient presented two epileptic seizures controlled with diazepam and stimulation was switched off. The head CT showed intra-axial hypodensity more prominent in the frontal area with a gaseous collection and oedema surrounding the right electrode pathway (figure 2). At the time there was no fever, no increase in inflammatory markers and a normal cell count in the lumbar puncture. However, antibiotic therapy (ceftriaxone and metronidazole) and phenytoin were started.

The depressed mental status and maintenance of epileptic crisis motivated sedation, orotracheal intubation and admission to the intensive care unit. Vancomycin and levetiracetam were added to the already ongoing therapy. An electroencephalography showed diffuse slowing down without paroxysmic activity and



Figure 2 Head CT scan showing intra-axial hypodensity (more prominent in the frontal area) with a gaseous collection and oedema surrounding the right electrode pathway.

a CT angiography excluded venous and arterial thrombosis. The electrodes were not removed. All cultural exams were negative and sequential head CT scans showed a reduction in the hypodensity area with resorption of the gaseous collection and diminished oedema (figure 3).



Figure 1 Postoperative head CT scan showing good placement of the electrodes.



Figure 3 Head CT scan showing a reduction in the hypodensity area with resorption of the gaseous collection and diminished oedema.



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Learning points

- ▶ Deep brain stimulation is a routine surgical treatment used in selected cases of Parkinson's disease.
- ▶ Complications after electrode implantation are described, and in this case, we admitted surrounding oedema but we could not rule out infection.¹⁻³ The unilateral electrode surrounding oedema is a rare complication but excludes an allergic reaction to the material and a complication of the stimulation itself.
- ▶ The decision not to remove the electrodes turned out to be beneficial as the patient profited from the stimulation after this episode.

There was a progressive recovery of the neurological state without sequelae allowing transfer to the neurology ward and discharge from the hospital.

Contributors CC was responsible for the conduction, reporting and conception of the article. FG was responsible for the acquisition of data. JM and LB were involved in the planning and revision.

Competing interests None declared.

Patient consent Obtained.

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