

Can rheumatoid arteritis be a risk factor for stroke during deep brain stimulation surgery? A case report with literature review

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Introduction: Deep brain stimulation (DBS) is an increasingly therapeutic option for people with Parkinson disease (PD), but little is known about the outcomes in patients with PD and rheumatoid arthritis (AR).

Case report: We present the case of a 54 years-old woman with 9-years history of PD, started with tremor on the right side. For several years she presented good response to treatment. She had an aunt with PD, but genetic testing was referred as negative. She had not risk factors for cerebrovascular disease, except AR treated with methotrexate. During the surgery, after the implantation of the second electrode on the right (less affected side on the left), she presented abnormal involuntary movement of the right arm, initially interpreted as seizure. The TC scan showed a possible ischemic thalamic lesion, later confirmed by brain MRI, that revealed a vascular lesion on the postero-medial thalamic left side. Despite everything she obtained good results from DBS.

Discussion: although several studies have extensively analyzed hemorrhagic complications during DBS [1-2] few reports describe subcortical ischemic adverse events [3-4]. It is well established that AR increases the risk of cerebrovascular disease [5-6], but little is known about the role that AR and disease-modifying anti-rheumatic drugs could have on the PD patients during and after DBS. It has been reported that the use of specific treatments for AR may be a risk factor for infections after DBS [7]. Although other possible etiologies need to be considered, including physical disruption or compression of small artery branches, trauma-induced vasospasm, or electrically induced atraumatic vasoconstriction, in our case, given the absence of cerebrovascular risk factors, the most probable cause of stroke was the co-existence of AR rather than the procedures during DBS. Larger samples of patients and studies are needed to understand if DBS is a safe treatment in patients with PD and AR.

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