Lacunar infarct during pallidotomy: case report

Abstract A symptomatic lacunar infarct is an unusual complication which may develop during stereotactically guided pallidotomy using radiofrequency thermoablation. We describe a 54-year-old man with Parkinson’s disease involving predominantly the right side, progressively deteriorating under medical management. He underwent stereotactically guided radiofrequency thermoablation of the posteroverentral globus pallidus interna. Despite intraoperative microelectrode recording and stimulation, the patient developed right facial weakness and pronator drift during the procedure. MRI showed a small lacunar infarct in the left internal capsule, in addition to the appropriately placed ablative lesion. We discuss the potential mechanisms for this type of injury.

Key words Pallidotomy · Parkinson’s disease · Infarct · Magnetic resonance imaging

Introduction

Stereotactically guided procedures for the treatment of Parkinson’s disease are experiencing a resurgence. Precise localization of the globus pallidus using MRI guidance and intraoperative microelectrode recording and stimulation has allowed patients with medically refractory Parkinson’s disease to experience partial relief of Parkinsonism and the side effects of medication, namely drug-induced dyskinesia [1, 2, 3, 4, 5, 6]. Complications associated with these procedures are few, but typically attributed to improper localization, hemorrhage, infection, or an inappropriately large pallidotomy lesion [4, 5, 7]. We report hemiparesis occurring during a properly performed pallidotomy procedure, due to a lacunar infarct. A literature review revealed that this complication has not been reported previously.

Case report

A 54-year-old man had been diagnosed as having Parkinson’s disease involving predominantly the right side 13 years earlier. Although medical management initially gave symptomatic relief, he slowly and progressively lost fine motor control in the right arm and leg and developed right-sided stiffness; in the last 4 years he
Fig. 1a-d MRI 2 days after pallidotomy. a, b Coronal T2-and axial proton density-weighted images demonstrating a well placed lesion in the left globus pallidus interna. c, d A smaller high-signal focus separate from and posterosuperior to this lesion is identified on coronal T2- and axial proton density-weighted images; it presumably represents a lacunar infarct in the posterior limb of the left internal capsule.

Fig. 2a-d MRI 12 weeks following pallidotomy. a, b Coronal T2- and axial proton density-weighted images demonstrate reduction in size of the pallidotomy lesion. c, d Further coronal T2- and axial proton-density weighted images show a persistent lesion in the posterior limb of the internal capsule.