

## Pallidotomy in Advanced Parkinson's Disease

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To the Editor: We read with interest the comments published regarding our recent article on pallidotomy in patients with advanced Parkinson's disease (3). There seems to be confusion as to some of the technical methods used in creating the radiofrequency lesions in these patients. As noted in the Patients and Methods section, multiple lesions were created by moving the probe to achieve the ultimate overall lesion. The short radiofrequency times noted in the comments are used in performing thalamotomy by our group to titrate the size of the lesion to the clinical response. However, the lesions created in the medial pallidum in the present series of patients were large (lesioning times, 45-60 s for each probe position), as also noted by the dimensions of the lesions revealed by the follow-up MRI studies. The size and position of the lesions should target the globus pallidus internus and certainly some of the globus pallidus externus as well, given the relative size and proximity of these targets (see Plate 27 [coronal] and Plate 45 [sagittal] of the *Atlas for Stereotaxy of the Human Brain* [2]).

Furthermore, the location and extent of the lesions revealed by MRI among this group of patients have been digitally analyzed (1). The positron emission tomographic results in this study have demonstrated increased movement-related brain activity after pallidotomy. In addition, on clinical evaluation, the L-Dopa-induced peak-dose dyskinesias were abolished. Taken together, the MRI and positron emission tomographic studies indicate adequate targeting. However, as noted from the central conclusion in the clinical study of these patients, such motor activity improvement measured by positron emission tomography did not translate into functional improvement for the patient with advanced Parkinson's disease and we are less enthusiastic regarding the efficacy of the procedure in this selected group of patients.

### REFERENCES: (1-3)

1. Grafton ST, Waters C, Sutton J, Lew MF, Couldwell WT: Pallidotomy increases activity

of motor association cortex in Parkinson's disease: A PET study. **Ann Neurol** 37:776-783, 1995. [ExternalResolverBasic](#) | [Bibliographic Links](#) | [Library Holdings](#) | [\[Context Link\]](#)

2. Schaltenbrand G, Wahren W (eds): *Atlas for Stereotaxy of the Human Brain*. Stuttgart, Thieme, 1977. [\[Context Link\]](#)

3. Sutton JP, Couldwell WT, Lew MF, Mallory L, Grafton S, DeGiorgio CM, Welsh M, Apuzzo MLJ, Ahmadi J, Waters CH: Ventroposterior medial pallidotomy in patients with advanced Parkinson's disease. **Neurosurgery** 36:1112-1117, 1995. [Ovid Full Text](#) | [Request Permissions](#) | [Bibliographic Links](#) | [Library Holdings](#) | [\[Context Link\]](#)