

# Central poststroke neuropathic pain

Central [poststroke neuropathic pain](#) is a debilitating syndrome that is often resistant to medical therapies. Surgical measures include [motor cortex stimulation](#) and [deep brain stimulation](#) (DBS), which have been used to relieve [pain](#). The aim of a study of Franzini et al. was to [retrospectively](#) assess the [safety](#) and long-term [efficacy](#) of DBS of the posterior limb of the [internal capsule](#) for relieving central poststroke [neuropathic pain](#) and associated [spasticity](#) affecting the lower [limb](#).

Clinical and surgical data were retrospectively collected and analyzed in all patients who had undergone DBS of the posterior limb of the internal capsule to address central poststroke neuropathic pain refractory to conservative measures. In addition, long-term pain intensity and level of satisfaction gained from stimulation were assessed. Pain was evaluated using the visual analog scale (VAS). Information on gait improvement was obtained from medical records, neurological examination, and interview.

Four patients have undergone the procedure since 2001. No mortality or morbidity related to the surgery was recorded. In three patients, stimulation of the posterior limb of the internal capsule resulted in long-term pain relief; in a fourth patient, the procedure failed to produce any long-lasting positive effect. Two patients obtained a reduction in spasticity and improved motor capability. Before surgery, the mean VAS score was 9 (range 8-10). In the immediate postoperative period and within 1 week after the DBS system had been turned on, the mean VAS score was significantly lower at a mean of 3 (range 0-6). After a mean follow-up of 5.88 years, the mean VAS score was still reduced at 5.5 (range 3-8). The mean percentage of long-term pain reduction was 38.13%.

This series suggests that stimulation of the posterior limb of the internal capsule is safe and effective in treating patients with chronic neuropathic pain affecting the lower limb. The procedure may be a more targeted treatment method than [motor cortex stimulation](#) or other [neuromodulation](#) techniques in the subset of patients whose pain and [spasticity](#) are referred to the lower limbs <sup>1)</sup>.

<sup>1)</sup>

Franzini A, Messina G, Levi V, D'Ammando A, Cordella R, Moosa S, Prada F, Franzini A. Deep brain stimulation of the posterior limb of the internal capsule in the treatment of central poststroke neuropathic pain of the lower limb: case series with long-term follow-up and literature review. J Neurosurg. 2019 Aug 16:1-9. doi: 10.3171/2019.5.JNS19227. [Epub ahead of print] PubMed PMID: 31419792.

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