Obsessive-compulsive disorder surgery

Following the failure of multiple medical and psychotherapeutic treatment lines, patients with trOCD, like others with functional disorders, may benefit from invasive neuromodulation. Cumulative evidence suggests that disrupting abnormal hyperdirect cortico-striato-thalamo-cortical (CSTC) pathway activity offers sustainable, robust symptomatic relief in most patients. Multiple surgical approaches allow for modulation of the CSTC pathway, including stereotactic lesions and electrical stimulation ¹⁾.

Deep Brain Stimulation for Obsessive-Compulsive Disorder

see Deep Brain Stimulation for Obsessive-Compulsive Disorder

Fiber tracts connecting orbitofrontal and dorsal anterior cingulate cortex with subcortical nuclei have been the target of neurosurgical lesions as well as deep brain stimulation in these patients.

Medication resistant obsessive-compulsive disorder (OCD) patients can be successfully treated with Deep Brain Stimulation (DBS) which targets the anterior limb of the internal capsule (ALIC) and the nucleus accumbens (NA).

Approximately 10% of patients with obsessive-compulsive disorder (OCD) have symptoms that are refractory to pharmacologic and cognitive-behavioral therapies. Neurosurgical interventions can be effective therapeutic options in these patients, but not all individuals respond. The mechanisms underlying this response variability are poorly understood.

Psychosurgery can be performed after a period of evolution of minimum 5 Years and after all other classical treatments have failed. For the last Years, different stereotactic techniques have been used: capsulotomy, cingulotomy, subcaudate tractotomy and limbic leukotomy, performed by radiofrequency thermolesions or radiosurgery (g rays). In the case of OCD, these procedures are supposed to affect some of the neural circuits between the frontal lobes and different structures of the limbic system, considered as central to OCD symptoms. As they cause smaller cerebral lesions than earlier surgical techniques (mostly open surgery techniques), modern stereotactic approaches have less clinical side effects, primarily less deficit in emotional reactivity and motivation. This type of treatment offers some hope to patients seriously disabled by OCD.

Deep brain stimulation (DBS) of the ventral [anterior internal] capsule/ventral striatum (VC/VS)

Anterior capsulotomy.

1)

Shofty B, Gadot R, Provenza N, Storch EA, Goodman WK, Sheth SA. Neurosurgical Approaches for Treatment-Resistant Obsessive-Compulsive Disorder. Psychiatr Clin North Am. 2023 Mar;46(1):121-132. doi: 10.1016/j.psc.2022.11.002. Epub 2022 Dec 13. PMID: 36740348.

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