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Deep brain stimulation in mood disorders: is it as esasy as it seems?

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To the editor:

The utility of brain stimulation (DES) in patients with a psychiatric disorder has been demonstrated in several studies. In recent years, many centers have become interested in performing these surgical interventions in serious psychiatric patients.¹⁻⁴ However, the indication of this surgical technique should always be accompanied by an adequate screening and follow-up of the cases. We present this need based on two cases in which deep brain stimulation of the nucleus accumbens was performed with results that could be considered as positive, considering the improvement these patients have had on the evaluation scale scores used. However, serious problems have been found in their post-surgical management and follow-up.

Patient 1 is a 35-year old male diagnosed of Obsessive-Compulsive Disorder, with poor evolution, and amputation of a leg after a suicide attempt. He was resistant to all of the psychopharmacological treatments available and underwent a bilateral anterior capsulotomy in another center. He underwent an intervention to place deep brain stimulation electrodes in the nucleus accumbens. The obsessive symptoms improved as demonstrated by the score on the Yale Brown obsessive-compulsive scale (YBOCS). It decreased from 37 prior to the intervention to 25 one moth after it, and was 22 one year later. The Hamilton depression rating scale (HDRS) score also improved, going from 20 to 8. The same occurred on the Hamilton anxiety scale (HARS) that went from 34 to 4 points. However, the patient does not consider that he has improved and the overprotective behavior towards his family and refusal to receive cognitive-behavior therapy has prevented the patient from achieving a positive change in his daily routine.

Patient 2 is a 47-year old male, diagnosed of severe bipolar subtype major depressive disorder, and who has been resistant to all the psychopharmacological treatments available and to several electroconvulsive therapy sessions. His mood status changed immediately after being implanted with the deep brain stimulation electrodes. The results on the neuropsychological examination changed. Prior to the intervention, he had, above all, attention disorders. One week after the placement of the electrodes, he experienced hypomaniac symptoms. His family relationships worsened and he refused to continue with follow-up by his usual psychiatrist. Three months after the intervention, his score on the HDRS scale went from 27 to 9 points. He also experienced improvement on the HARS scale, going from a score of 22 to 10.

Although the research done indicates that stimulation of the nucleus accumbens would be the adequate therapeutic target for deep brain stimulation, and the results on the psychometric scales are encouraging, it is important to keep other factors in mind when indicating a treatment such as deep brain stimulation such as establishing adequate screening criteria of the patients, a more precise methodology design of the intervention, the need to add post-surgical psychotherapy treatment, without overlooking the ethical aspects,⁵ and, of course, interventions aimed at achieving rehabilitation in addition to familial interventions to achieve better results after the application of this technique.

REFERENCES

1. Gabriëls L, Cosyns P, Nuttin B, Demeulemeester H, Gybels J. Deep brain stimulation for treatment-refractory obsessive-compulsive disorder: psychopathological and neuropsychological outcome in three cases. *Acta Psychiatr Scand* 2003;107(4):275-82.
2. Lozano AM, Mayberg HS, Giacobbe P, Hamani C, Craddock RC, Kennedy SH. Subcallosal cingulate gyrus deep brain stimulation for treatment-resistant depression. *Biol Psychiatry* 2008;64(6):461-7.

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3. Nuttin B, Gabriëls L, Cosyns P, Gybels J. Electrical stimulation of the brain for psychiatric disorders. *CNS Spectr* 2000;5(11):35-9.
4. Sturm V, Lenartz D, Koulousakis A, Treuer H, Herholz K, Klein JC, Klosterkötter J. The nucleus accumbens: a target for deep brain stimulation in obsessive-compulsive- and anxiety-disorders. *J Chem Neuroanat* 2003;26(4):293-9.
5. Schläpfer TE, Bewernick BH. Deep brain stimulation for psychiatric disorders-state of the art. *Adv Tech Stand Neurosurg* 2009;34:37-57.