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Comment on 'Treatment of Intractable Anorexia Nervosa with Inactivation of the Nucleus Accumbens Using Stereotactic Surgery'

Alim Louis Benabid

Clinattec, Grenoble, France

Wang et al. [1] report the results obtained from 8 patients suffering from anorexia nervosa and treated by surgical bilateral inactivation of the nucleus accumbens [6 ablative lesions of about 60 mm³ and 2 high-frequency deep brain stimulation (DBS) at 135–185 Hz].

The overall outcomes were satisfactory; there were no severe and/or life-threatening complications associated with the treatment, although the number of patients is too small to show statistical significance of the results.

However, the postoperative improvement of the patients is clear and quick, the BMI returns close to normal within 6–12 months, and even more quickly for menstruation, p values are strikingly low for neurocognitive and behavioral scores at 6 months and even significantly improved at as early as 1 week. Improvements are all stable and even better along time, at 1 year.

This is a very careful report of partial data in small series, which are not considered in the culture of evidence-based medicine (EBM). The concepts issued from EBM are designed to establish strict rules for clinical trials and for evaluation of the results, regardless of the specific conditions of the various diseases. Therefore, in some circumstances, particularly in surgical trials, these rules are too strict and even inappropriate to the point that some

studies cannot be published, because it is sometimes impossible to gather enough cases or to set up a trial with proper sham operations. However, because of the careful evaluation of all available parameters, this type of study can provide very informative data and may even lead to conclusions which would be obtained only with larger cohorts of patients, if done in the strict format of EBM. Such an approach has already been used by Bart Nuttin and his team and provided highly valuable insight and conclusions and led to major advances in the field of obsessive-compulsive disorders, using the internal capsule as a target.

This being considered, the paper is also interesting because it shows that the nucleus accumbens is a determining pivotal structure in the regulation of food intake and desire to eat, it is an efficient and safe target for surgical therapy of this life-threatening disease, that both ablation and DBS are efficient, and that this is one more example of equivalence between lesion and DBS at high frequency, supporting the hypothesis of high-frequency-induced functional inhibition.

The quality of the data and of the analysis of the results, the precision of targeting and of clinical evolution is high and compensate the small number of cases, particularly the unequal number of lesions and DBS. The authors raise interesting points of discussion about the ethics of control groups, related to the severity of the disease. This paper could warrant a larger comparative study between ablation and DBS, particularly to have a more precise and valid evaluation of the complications.

References

- 1 Wang J, Chang C, Geng N, Wang X, Gao G: Treatment of intractable anorexia nervosa with inactivation of the nucleus accumbens using stereotactic surgery. *Stereotact Funct Neurosurg* 2013;364–372.