Auricular Nerve Stimulation using the NSS-2 BRIDGE® device to reduce opioid requirement following laparoscopic Roux-en-Y gastric bypass

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Background

Evidence supports the use of complementary techniques to reduce pain and opioid use after surgery. NSS-2 BRIDGE® device (NBD®) modulates pain via the stimulation of nucleus of the auricular branch of the cranial nerves at the level of the brainstem and the limbic system.

Objectives

Investigate the role of auricular nerve field stimulation for pain control following gastric bypass surgery

Settings

Academic medical center, USA

Methods

A total of 18 subjects were included. Subjects were divided in 2 groups: NBD® group (n=8) and a control group (n=10). The NBD® was placed following LRYGB in the recovery room. The effectiveness of NBD® was assessed comparing the relative use of opioid consumption (oral morphine equivalent = OME), and pain (0 = no pain to 10= worst possible pain) at 24 hr. and 48 hr. post-surgery. In addition, the device tolerability ([1], [2], [3], [4], [5], [6], [7], [8], [9], [10]) was assessed with, 8-10 considered excellent. Data was analyzed using unpaired t-test and presented as mean ± Standard Deviation (SD). Alpha was set up at 0.1.

Results

Compared to the control group, the use of NBD® was associated with a 60.2% reduction in OME (38.15 mg vs 15.2 mg; $p<0.1$) and a 28% reduction in pain (5.0 vs 3.6; $p=0.1$) at 24 hr. post-surgery. The tolerability of NBD® was reported to be excellent.

Conclusions

This report suggests that NBD® may represent an interesting alternative to control perioperative pain and limit opioids use following bariatric surgery. This need to be confirmed by a placebo control randomized study.