Clinical Safety and Outcomes with Nurotron™ Cochlear Implant in Spanish Speaking Patients

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Keywords: Cochlear implants; Hearing Loss; Sensorineural hearing loss; Deafness; Tinnitus

Abstract

Aim: to assess clinical safety and postoperative audiological outcomes in Spanish speaking patients that underwent surgery with Nurotron™ cochlear implant.

Method: A Before-and-after study was performed. Patients with bilateral severe to profound neurosensorial hearing loss or patients with unilateral deafness with/without tinnitus were included in the study. Repeated-measures within-subjects for assess pure tone thresholds and speech performance (Bilingual Test) with a detailed monitoring to establish security or adverse effects were performed. T-test for paired samples was used for statistical analysis.

Results: 32 patients were included, 18 (56.3%) men and 14 (43.7%) women. Mean age at the time of surgery was 49.1±19.8 years. 30 (93.8%) patients were postlingual and 2 (6.2%) were prelingual. In 17 (53.1%) patients the hearing loss was unilateral, and in 15 (46.9%) the hearing loss was bilateral. The mean follow-up of the group was 22.2±9.0 months (minimum=5months and maximum=40months). As major complication only one patient (3.1%) with high-spending gusher was reported, related with ossified cochlea and unrelated with the brand of the cochlear implant. Hard failures and extrusions are not reported in the followed-up period in this group. The average of inserted electrodes was 21.9 (the patient with ossified cochlea has 6 working electrodes), and 31 patients are using the cochlear implant more than twelve hours/day (one patient died of omentum cancer). In the postlingual patients, the mean pure tone average in free field audiometry was 33.2dB at six months (n=28, p<0.05 respect preoperative), the speech discrimination score at 65db SPL was over 50% at six months (n=26, p<0.05 respect to preoperative), and over 70% at 12 months (n=25, p<0.05 respect to preoperative). A statistically significant reduction was observed in patients with tinnitus (p <0.05). All patients are using the Venus processor with the APS strategy.

Conclusion: The clinical safety and audiological outcomes are satisfactory and supports the reliable use of the Nurotron™ cochlear implant; we need more studies focused in long term follow-up and quality of life outcomes to confirm these results.

Proceeding

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