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**STABILITY OF RECEPTOR-STIMULATORS IN COCHLEAR IMPLANTATION: A PROSPECTIVE STUDY OF THE BONY BED TECHNIQUE WITHOUT SUTURES**

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Background
Cochlear implantation is a widely accepted surgical treatment for individuals with severe-to-profound sensorineural hearing loss. The long-term stability of the internal device, particularly the receptor-stimulator (RS), is crucial to ensure proper coupling with the external components and to avoid complications. Conventional fixation techniques often involve sutures, which may increase surgical time and pose risks of local irritation or pressure necrosis. The bony bed technique without sutures has been proposed as a simpler and equally effective alternative, although evidence supporting its stability over time is still limited.

Objective
To evaluate the positional stability of the receptor-stimulator in cochlear implant recipients using the bony bed technique without sutures over a 12-month follow-up.

Setting
A tertiary university hospital and national reference center for hearing rehabilitation and craniofacial anomalies.

Design
Prospective cohort observational study.

Method
This prospective cohort study included patients undergoing cochlear implantation without RS suture fixation. All procedures were performed by the same surgical team using a standardized bony bed technique, where a subperiosteal pocket is created and the RS is accommodated in a bone recess without anchoring sutures. To evaluate device stability, linear distances were measured from the center of the RS magnet to three fixed anatomical landmarks: the mastoid apex (M), the tragus (T), and the lateral canthus of the eye (E). Measurements were performed using a flexible millimeter tape in the immediate postoperative period and at 1, 3, 6, and 12 months. Migration was defined as any significant change in these distances. Demographic and clinical data were collected, and descriptive and inferential statistics were applied.

Population
The study included 61 patients (aged 12 months to 60 years) who underwent cochlear implantation between January 2020 and December 2022.

Results
Mean distances at baseline were: M – 98.23 ± 10.12 mm, T – 96.48 ± 10.62 mm, and E – 142.52 ± 10.36 mm. No statistically significant variations were observed at any follow-up interval. No patient required surgical revision or experienced complications related to device instability or absence of sutures.

Conclusions

The bony bed technique without sutures provided stable RS positioning throughout the 12-month follow-up. This approach is safe, reproducible, and may reduce complications and operative time compared to traditional fixation methods. These findings support its broader adoption in cochlear implant surgery, though further long-term studies are warranted.