Rate of Skin Breakdown and Retention Complications in Off-The-Ear Cochlear Implant Processors

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OBJECTIVE

With the evolution of cochlear implant (CI) device design, off-the-ear (OTE) processors are increasingly used as an alternative to behind-the-ear (BTE) devices. This study examines the frequency of local skin site complications and device retention issues in CI users with OTE processors.

METHODS

Study Design: Retrospective single institution review

Setting: Tertiary academic medical center

Patients: CI recipients who utilize OTE processors between 2017 and 2024, 202 patients (253 implants)

Intervention: Cochlear implantation

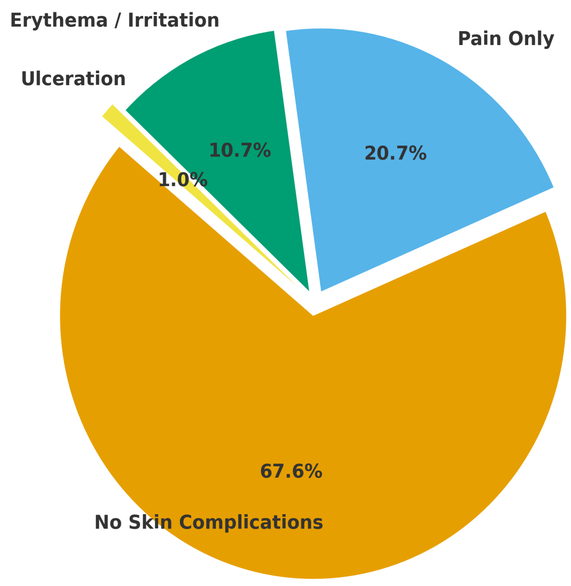
Main Outcome Measures:

- Skin site complications (type and severity)
- Device retention difficulties
- Interventions used (e.g., magnet strength changes, padding, switching processor type)

RESULTS

Rate of skin complications

Complication Type	Incidence (n=253)	% of Skin complications
Any skin complication	82	
– Pain only (no skin breakdown)	53	64%
– Erythema / irritation	27	33%
– Ulceration	2	<1%

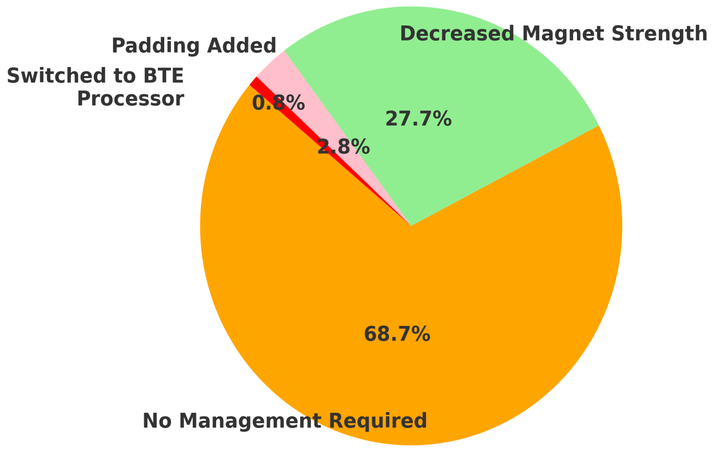


Skin complication management:

- Decreased magnet strength → 84% (69/82)
- Device padding → 9% (7/82)
- Switched to BTE processor → 2 patients

Device retention difficulties:

- Occurred in 19% (49/253) of implants
- Resolved with increased magnet strength in 63% (31/49)
- 7 patients switched to BTE due to persistent issues



DISCUSSION

- OTE processors are increasingly popular for cosmetic and comfort reasons.
- Skin complications occurred in about one-third of implants but were mostly minor and reversible with conservative measures such as adjusting magnet strength and use of Moleskin.
- Retention difficulties affected one-fifth of implants; the majority resolved with simple magnet strength adjustments.
- Only a small subset required switching to a BTE processor.

CONCLUSIONS

OTE cochlear implant processors are generally well tolerated.

Minor skin issues and retention problems are common but manageable.

These data support the continued use of OTE processors, with appropriate patient counseling regarding possible minor complications and management strategies.