Mr. Bhavesh Patel

Mr. Robert Nash

Mr. Jeremy Lavy

Changes to hearing levels over the first year after stapes surgery: An analysis of 139 patients

Introduction

Results from stapes surgery are generally good. The presence of an intact and mobile malleus and incus, absence of middle ear disease, and the stability of a stapes piston at the incus and stapes footplate allow for reliable and stable hearing reconstruction. However, a proportion of patients will have a persistent conductive hearing loss when they are seen some weeks after surgery.

A number of technical and patient factors can cause a persistent loss. E.g. injury to the tympanic membrane or incus, the development of otitis media with effusion, malposition of the stapes piston, an overly narrow stapedotomy, and bony overgrowth of the piston and stapedotomy.

A proportion of patients with a persistent conductive hearing loss go on to have revision surgery, though anecdotally a proportion will improve over time.

The aim of this paper is to report the outcomes of a cohort of patients undergoing stapes surgery over the first post-operative year. This can guide management decisions and counselling of patients who have undergone stapes surgery.

Methods

139 Patients

- 83 Female, 56 Male; Mean age 45.9 (8-79)
- 73 left ears, 66 right ears
- 102 bilateral disease, 37 unilateral disease

Pre-Op Audiometry

- Within 90 days of surgery
- 500Hz, 1, 2 and 3kHz AC and BC using decibel hearing levels
- $AC - BC = ABG$, mean of ABG of four frequencies used for comparison

Surgery

- Single surgeon (senior author) performed as daycase under L.A. with sedation
- KTP laser (0.125mm handheld) to divide stapedius, posterior crus and ablate footplate. 0.6mm trephine for stapedotomy. Skeeter drill if footplate obliterated. Stapedotomy to LPI calculated using measuring rod. Shape memory nitinol prosthesis used. Venous blood to seal oval window niche.
- Prostheses - 134 'Smart 360', 3 'Smart', 2 fluoroplastic 'Causse'

Post Op Audiometry

- 28 - 90 days post op
- 6 months post op (+/- 3 months),
- 1 year post op (+/- 6 months)

Results

ABG in first year after stapes surgery

Conclusions

Patients with an initial suboptimal or poor result after stapes surgery may see improvement in their hearing thresholds in the year after surgery.

These patients may have large pre-operative air-bone gaps, and have a trend to have obliterated footplates. Revision surgery should not be considered until at least six months after primary surgery.