

Bone Anchored Hearing Aids B.A.H.A

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23 Moharram 1426

Specific Indications

- Intolerance of conventional hearing aids
 - Draining ear
 - Mastoid cavity (feedback)
 - Topical sensitivity
- Congenital malformations
 - Microtia / atresia
 - Syndromic / sporadic
- Conductive loss in an only hearing ear
- Single-sided deafness

Conductive Defects

- Wax & foreign bodies
- Otitis externa
- Acute suppurative otitis media (ASOM)
- Otitis media with effusion (OME)
- Chronic otitis media (CSOM)
 - Scarring; perforation
- Cholesteatoma
- Otosclerosis
- Ossicular chain disruption

Drawbacks traditional alternative

Air conduction devices

- Presence of ear mould aggravates infection
- Acoustic feedback
- Dependent on middle ear function

Reconstructive surgery

- Potential risk of hearing damage
- Less predictable outcome

Bone conduction devices

- Discomfort
- Poor sound quality
- Cumbersome



Advantages

Over air conduction devices

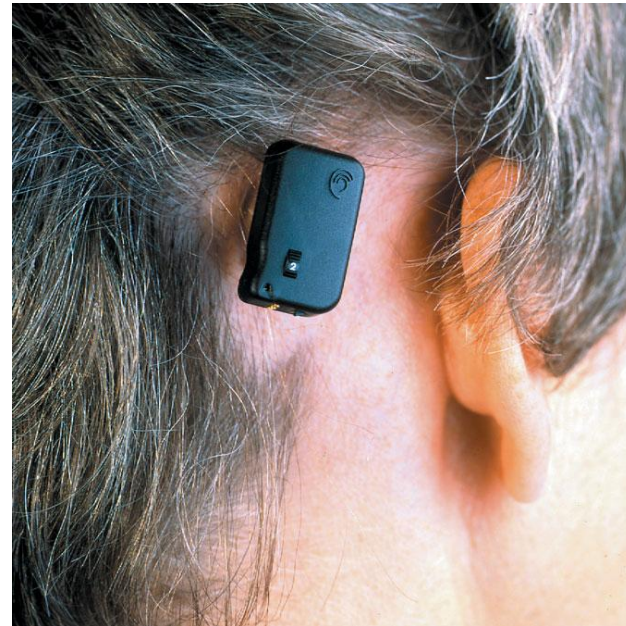
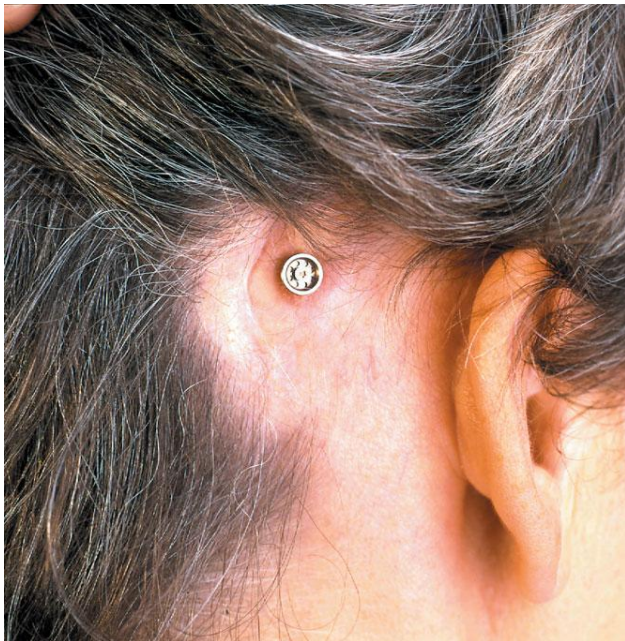
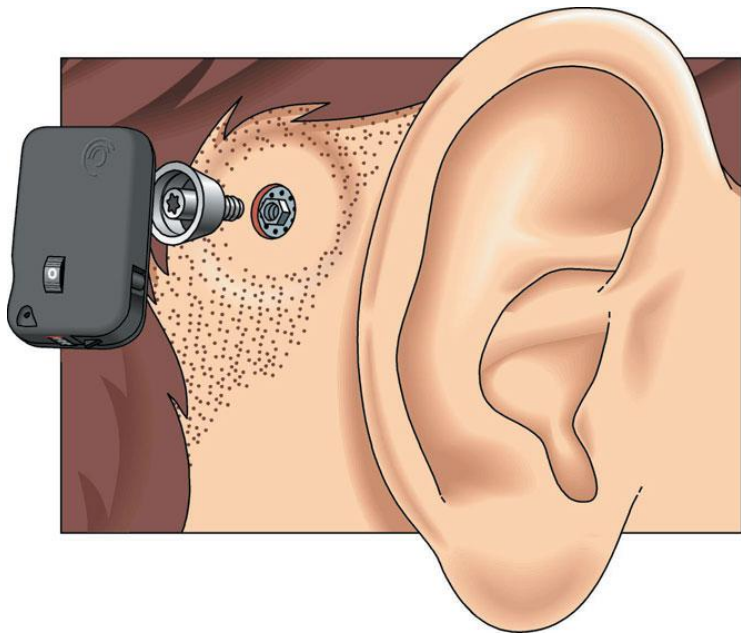
- No occlusion of the ear canal
- No feedback problems
- Sound bypasses the middle ear

Over reconstructive surgery

- Predictable results
- Low risk for the patient
- Reversible surgery

Over bone conduction devices

- More comfortable
- Better sound quality
- Aesthetic appearance





- **Classic**
- **Compact**
- **Cordelle**
- **Digital**



Contraindications

- Average bone threshold worse than 45 dB
- Patients who may be non-compliant
 - Anatomical
 - Psychiatric
 - Social

These are recommendations and not absolute contraindications

FDA approved for children above the age of 5

Basic principles

- Careful patient selection
- Meticulous surgical technique
 - Secure osseointegration
 - Stable skin surrounding the implant site

Patient selection

- Medical
- Audiological
- Psychological

Pre-implantation assessment

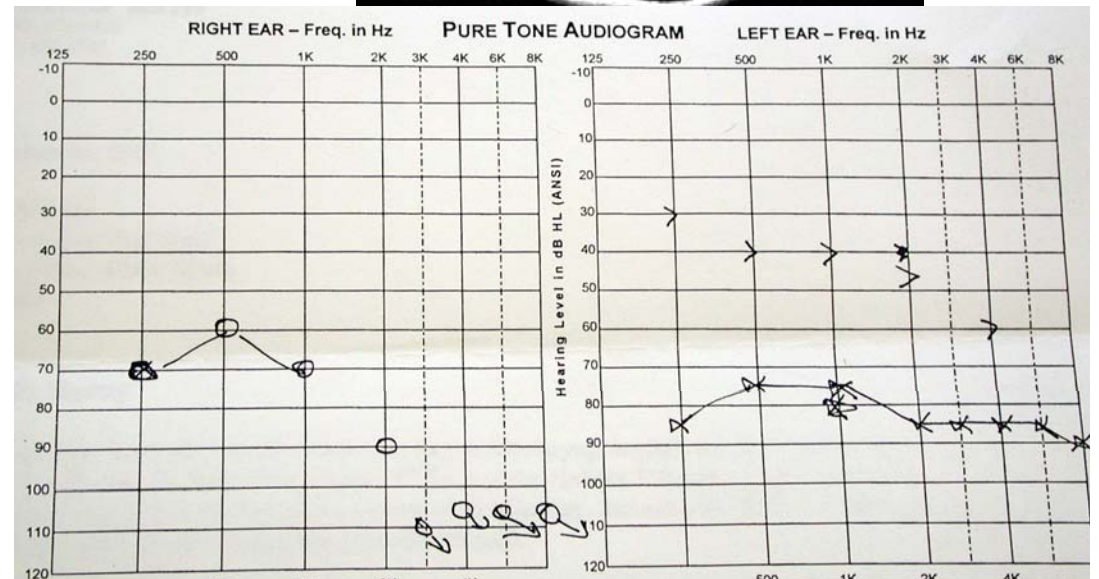
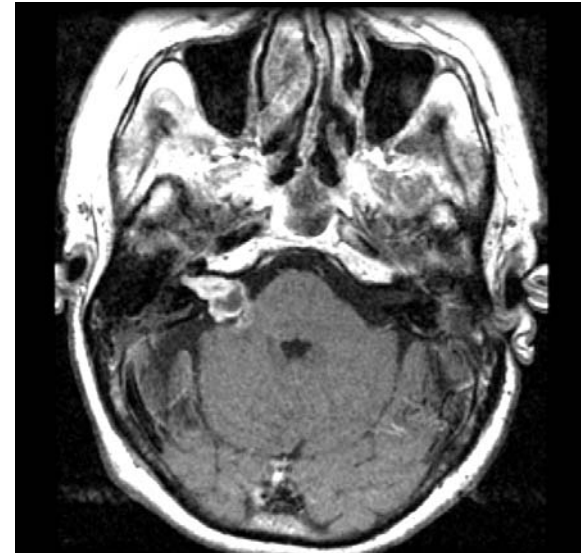
- Pure tone audiogram B.C. 45dB
- Speech Discrimination score >60%
- “Bite bar”

Try them today

- “Head band”

Pre-Op Assessments


- 78 Y
- Rt dead ear (XRT)
- Left ear
 - Mix HL
 - HA
 - Wet
- [Video](#)



Pre-operative test equipment



Pre-implantation assessment

- Verbal & written information exchange
- entific.com website The logo for entific.com, featuring the word "entific" in a lowercase, sans-serif font. Above the letter "i" is a small red icon of a person with arms raised. To the right of the text are three circular icons: a light gray circle, a dark gray circle, and a red circle.
- Meet implantee

Contraindications



- Poor Hygiene

- Insufficient bone volume

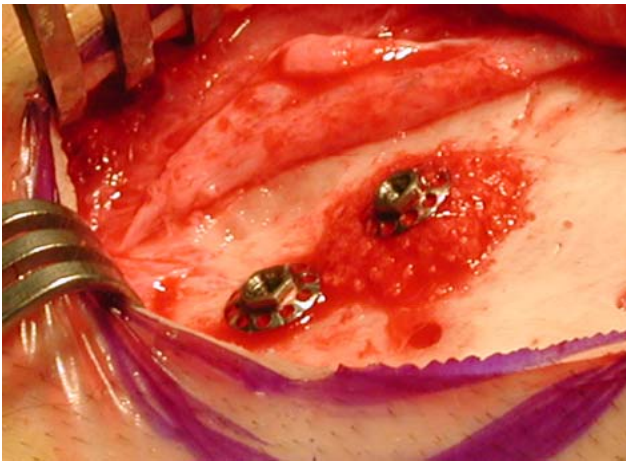
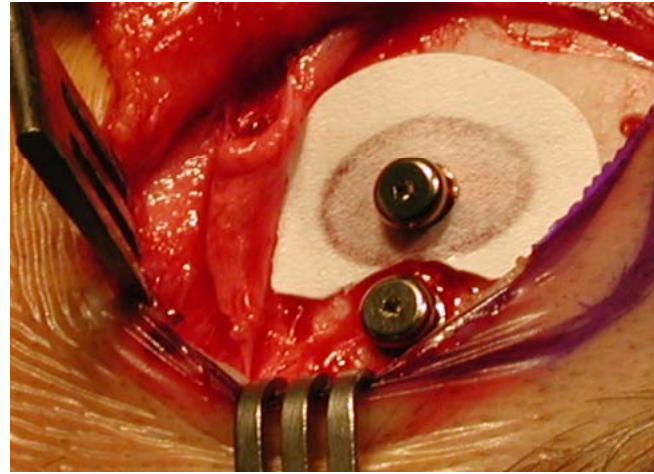
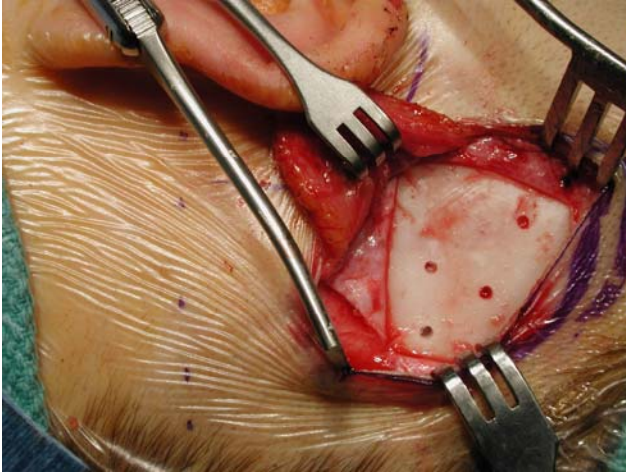


Surgical technique



- Single – stage
 - Two stages
-
- General or local anaesthetic

Two stages



Surgery

Preparation

- Mark skin



- Infiltrate

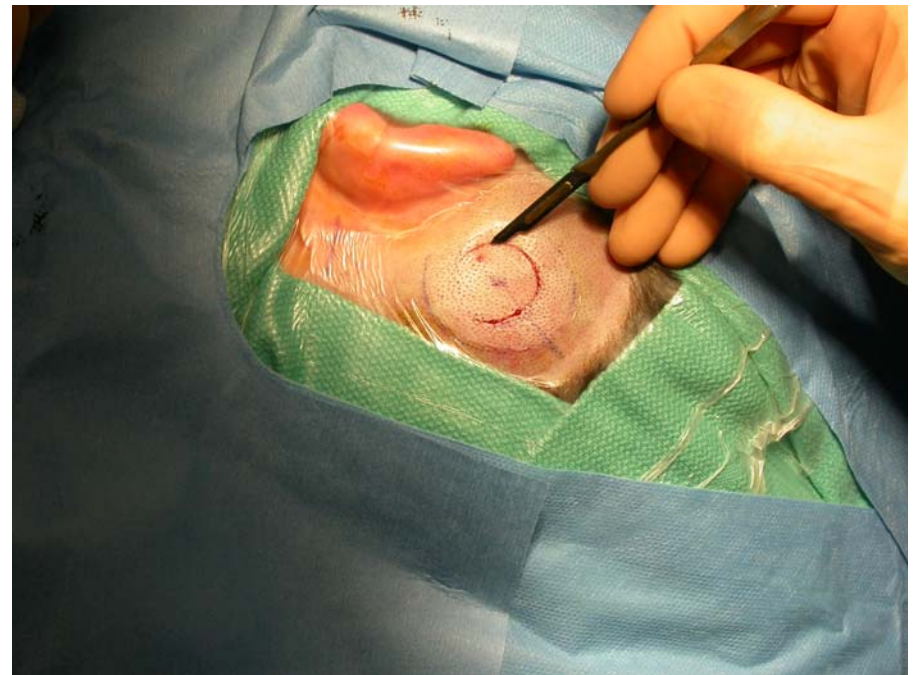


Skin graft technique



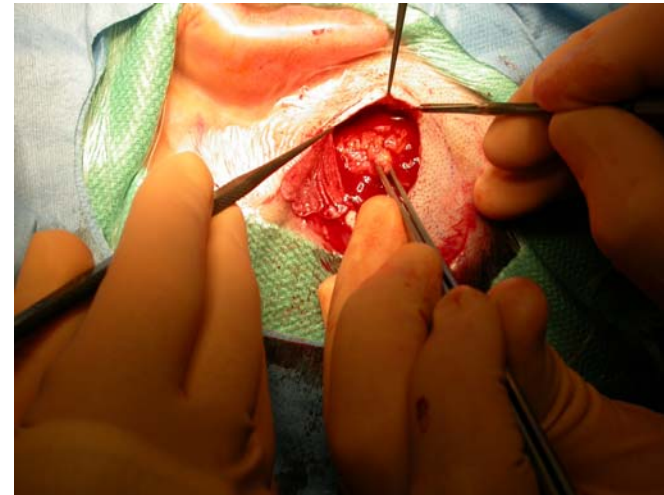
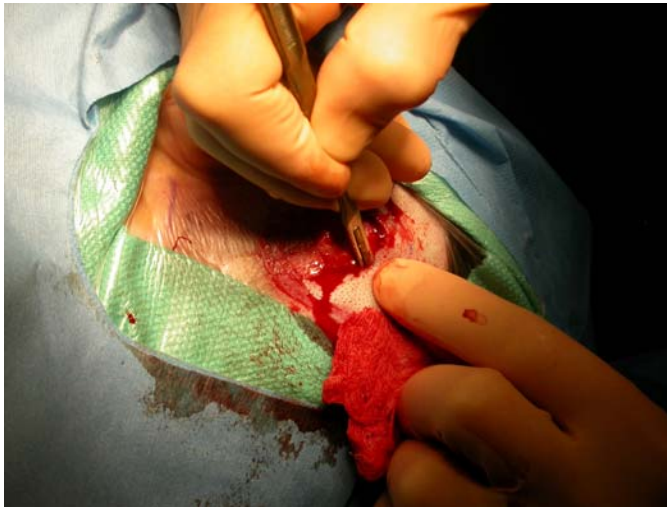
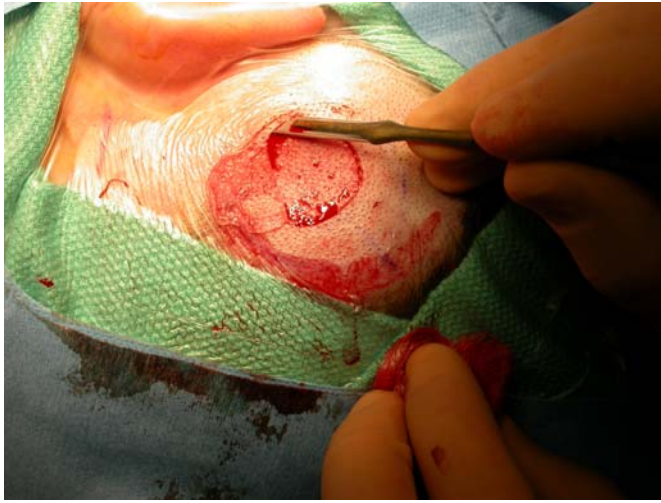
Skin graft technique

- Modification
- Inferiorly-based implant-site split-skin graft
- Knife



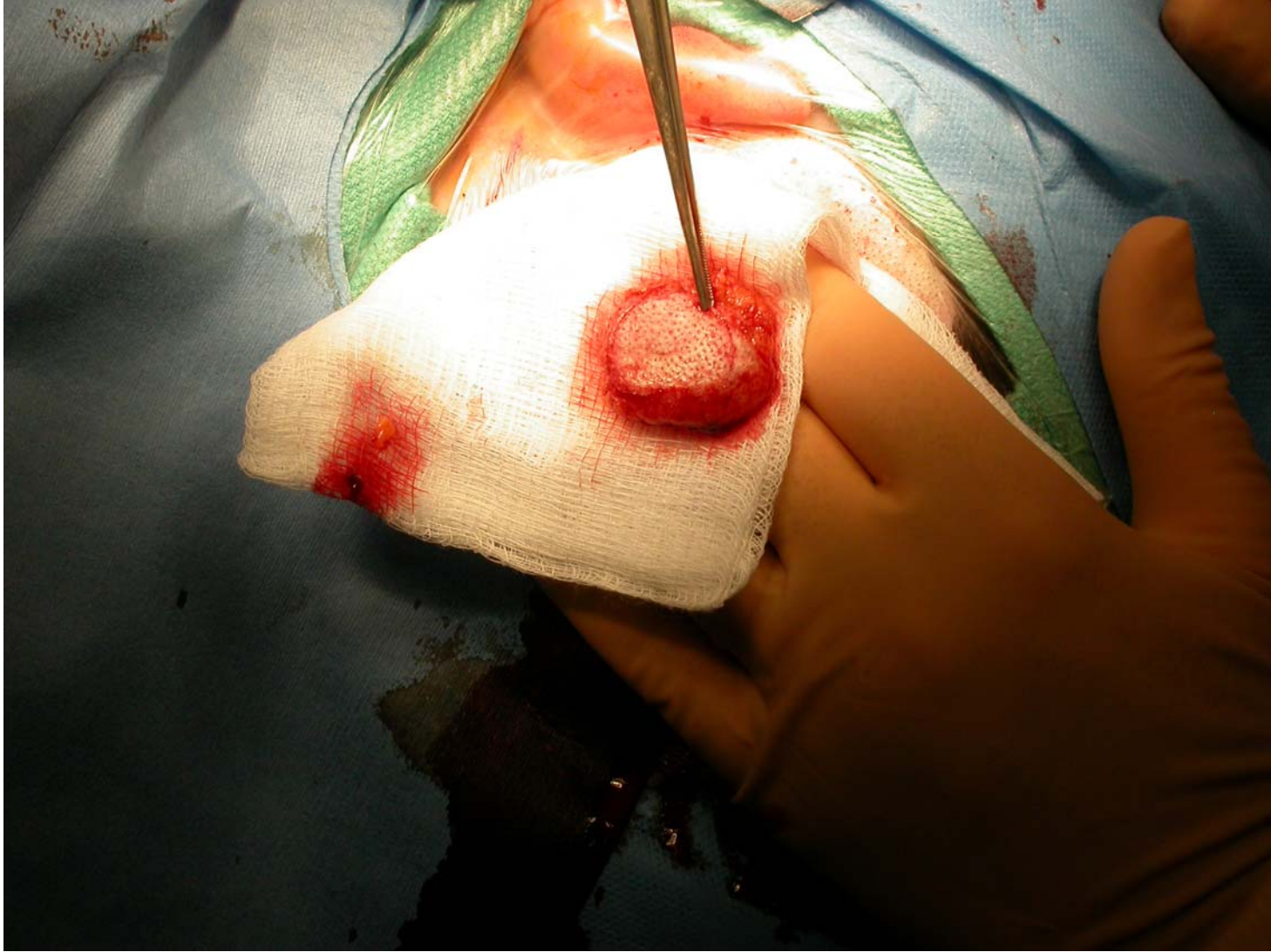


Wide under-mining of soft tissues

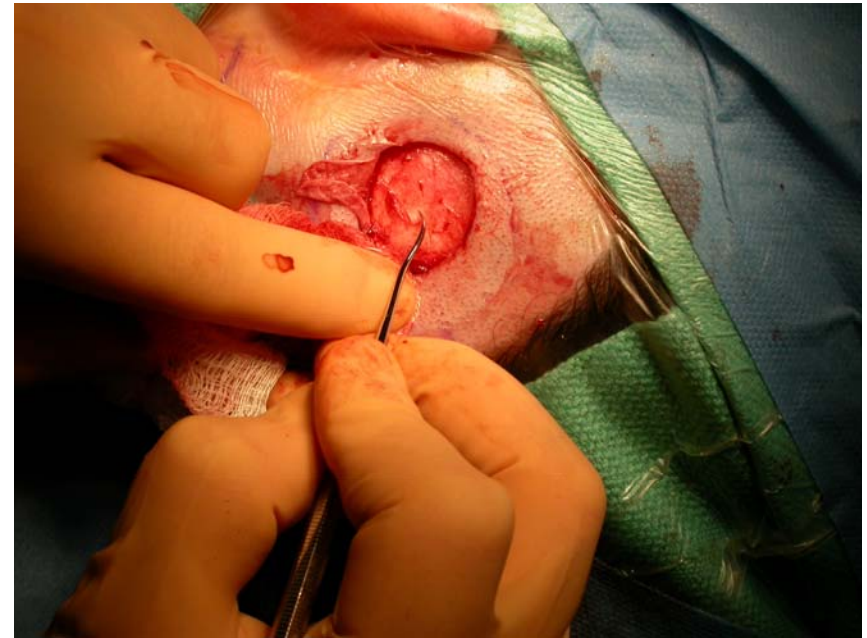
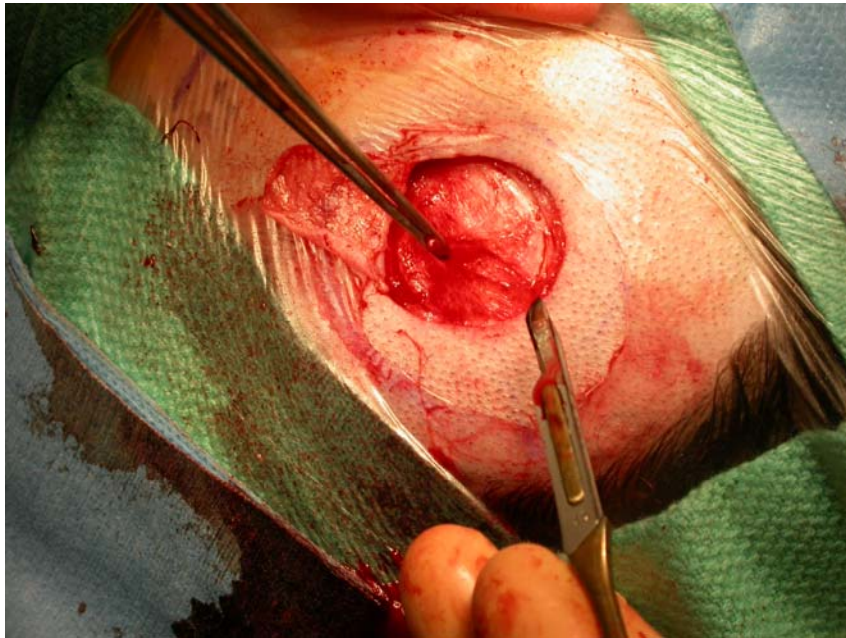


Different way





Removal of peri-cranial tissues



Clean skin graft

Test drill & countersink

- High speed drill
 - 3 mm →
 - 4 mm
 - Countersink
- Constant irrigation
- Check for adequate bone thickness

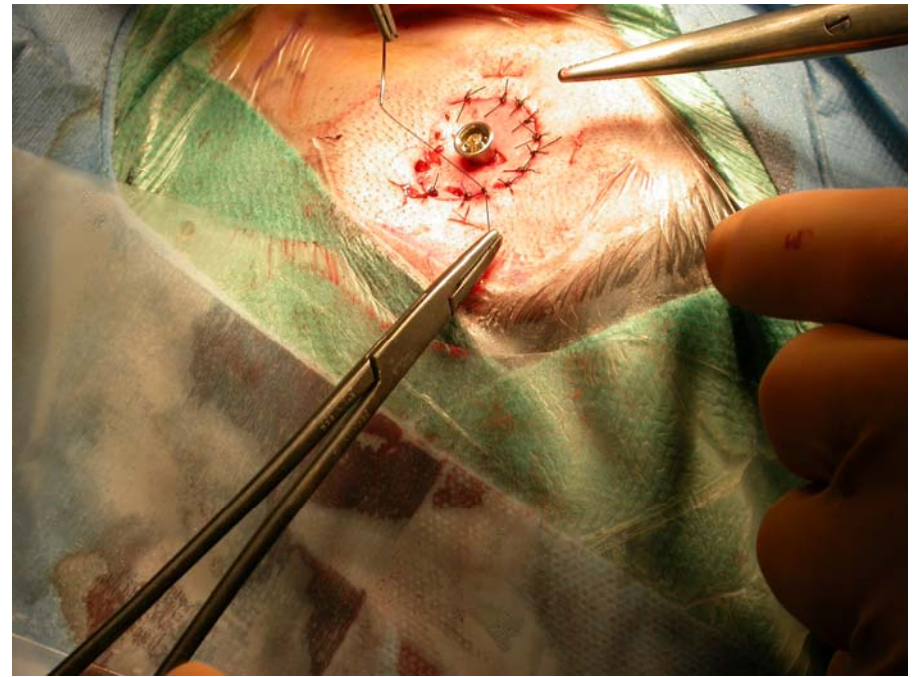
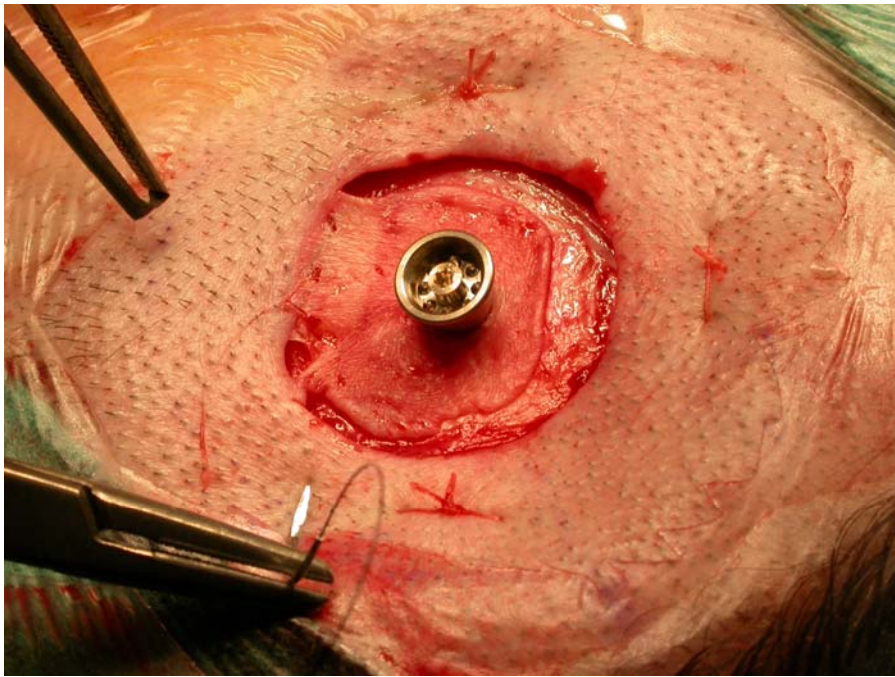


Fixture placement

- Slow speed drill
- Constant irrigation



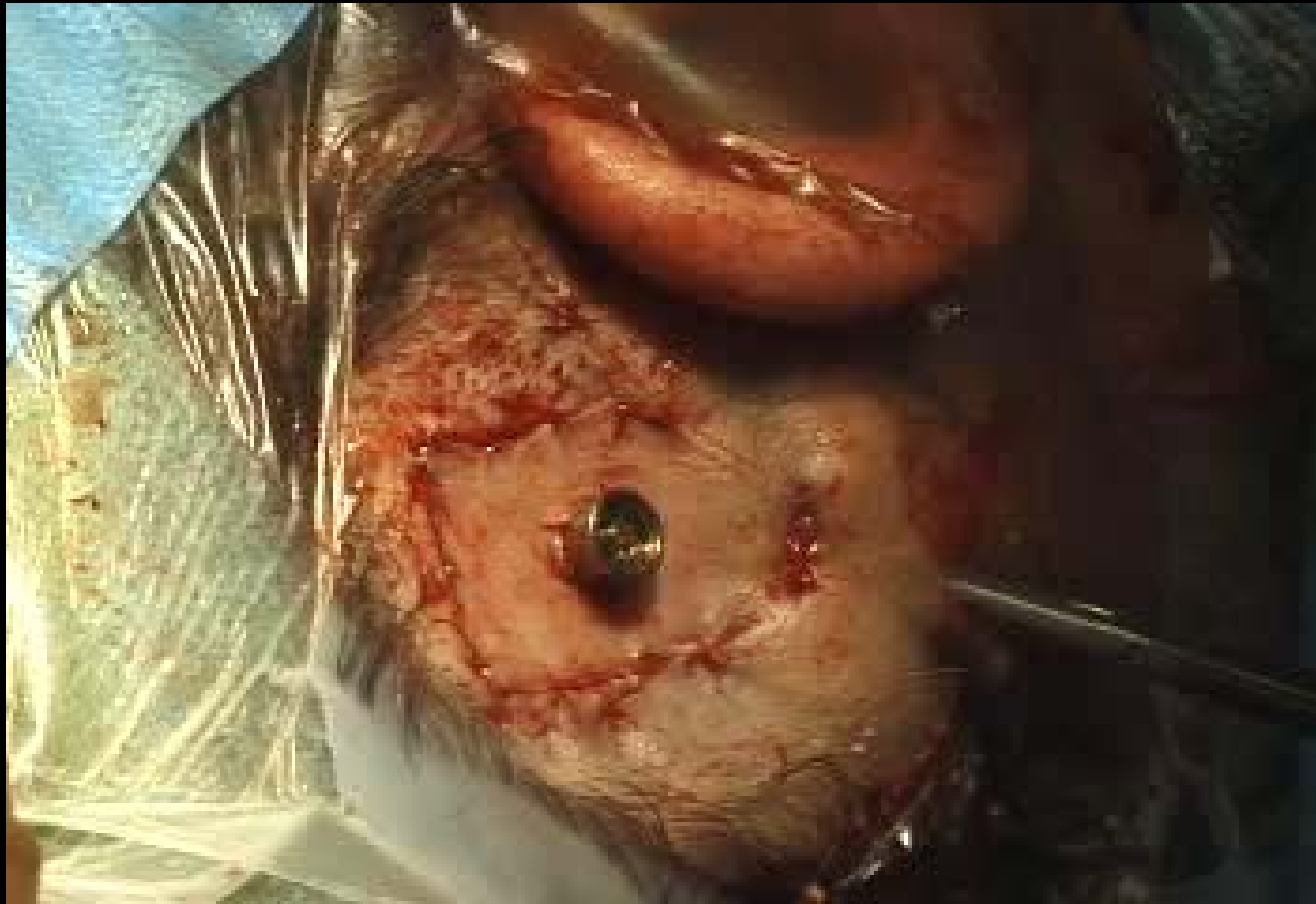
Replace graft and suture



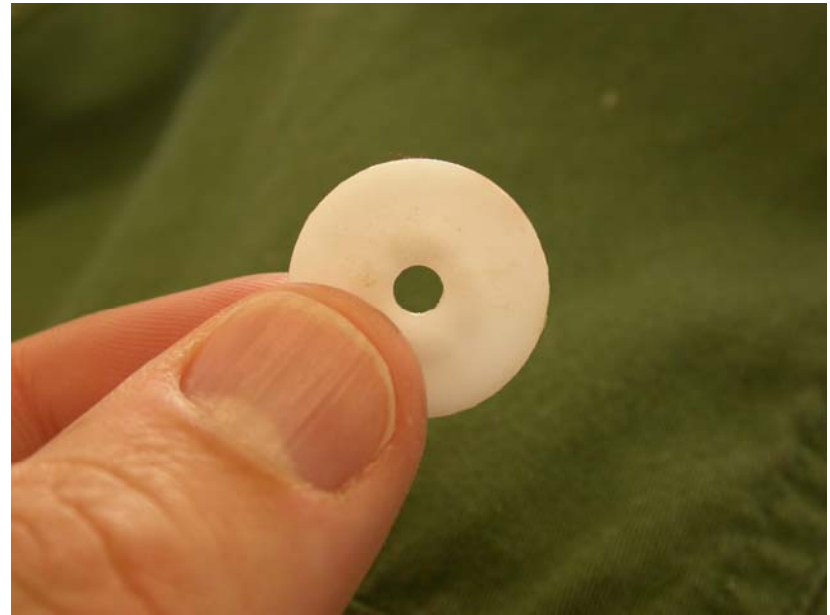
Graft



Suture



Layered sponge dressing & healing cap



Layered sponge dressing



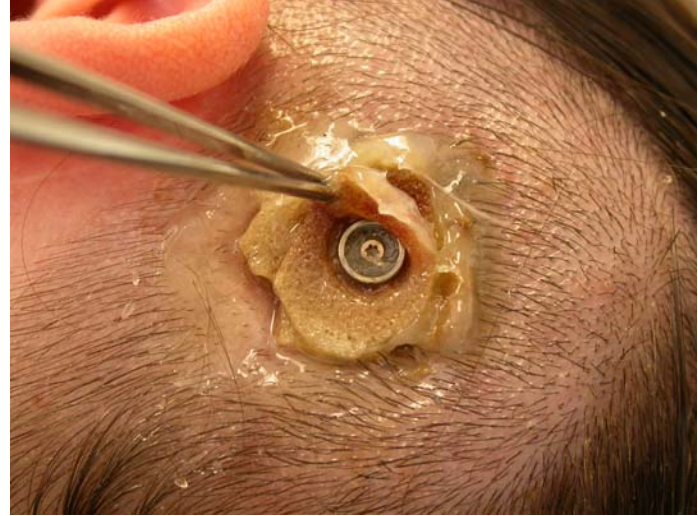
Healing cap



Essential steps

- Take the split-skin graft as thin as possible
- Widely undermine the edges
- Over-excise soft tissue esp. superiorly
- Remove peri-cranial tissues down to periosteum
- Drill with correct speed and always with cooling

First visit



First visit





The ideal implant site



- *Thin*



- *Hairless*



- *Immobile*

Post-op guidelines

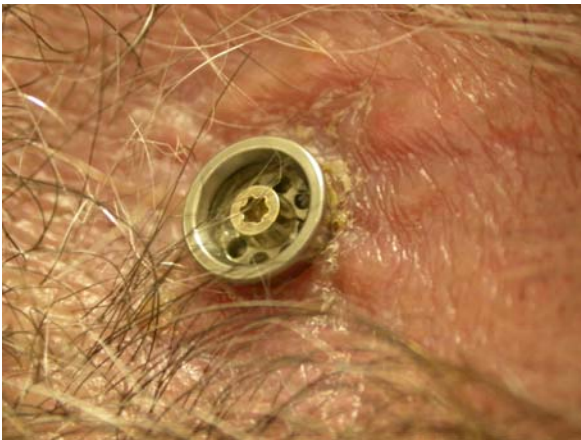
- OPA. 1 week post-op.
 - Remove healing cap
 - Change dressing (possibly reapply)
 - Clean wound (polysporin)
- OPA. 2 weeks later
 - Clean wound
- OPA 1 month later
 - Baby's tooth brush
- Fitting @ 3 months post-op



Cleaning with brush



Hygiene



Fitting



Complications

Complications

- Wound complications
 - Infection/granulation
 - Overgrowth of soft tissue
 - Skin graft non-take
- Operative complications
 - Unable to find bone thick enough
 - Sigmoid sinus injury
 - Dural Injury
 - Facial nerve injury
- Bone complications
 - Non-osseointegration
 - Bone fracture

In reality: most common problems

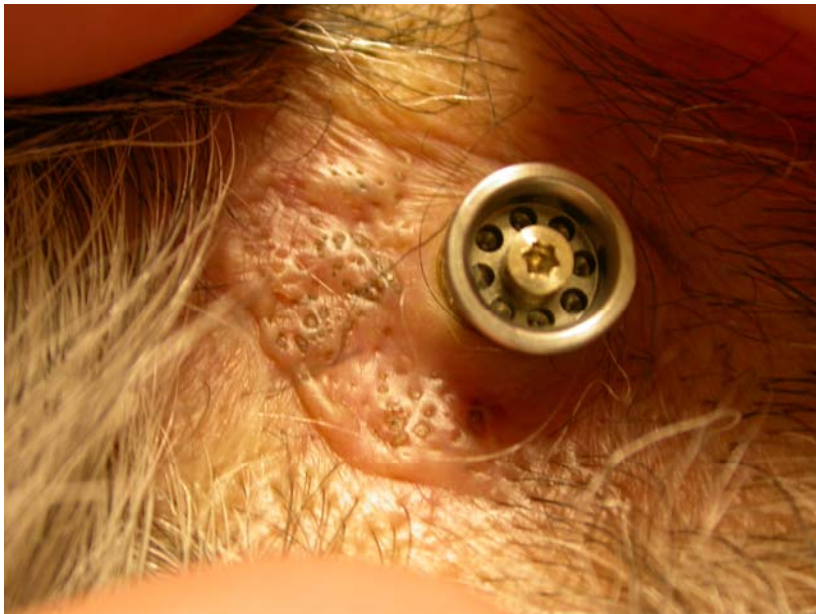
- Skin site granulation
- Sagging and drooping of superior skin
- Thickening of subcutaneous tissues
- Whistling and feedback
- Insufficient power
- Skull numbness or pain
- Placed too far back

The 'drifter'





Sebaceous skin at graft site



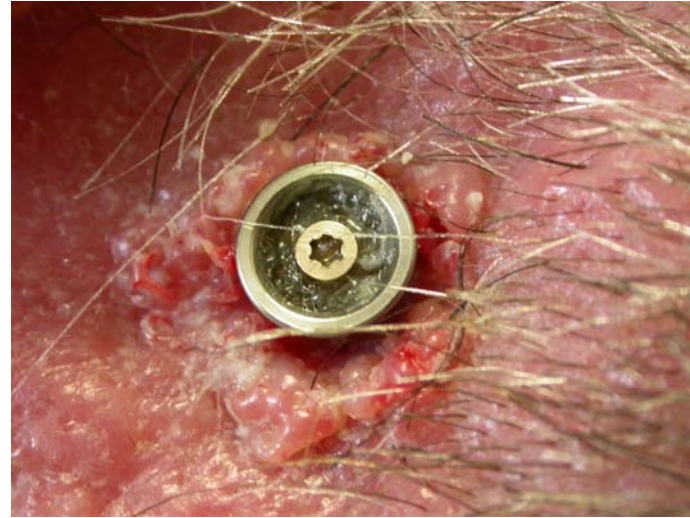
Poor hygiene



Hygiene



Complications - granulation

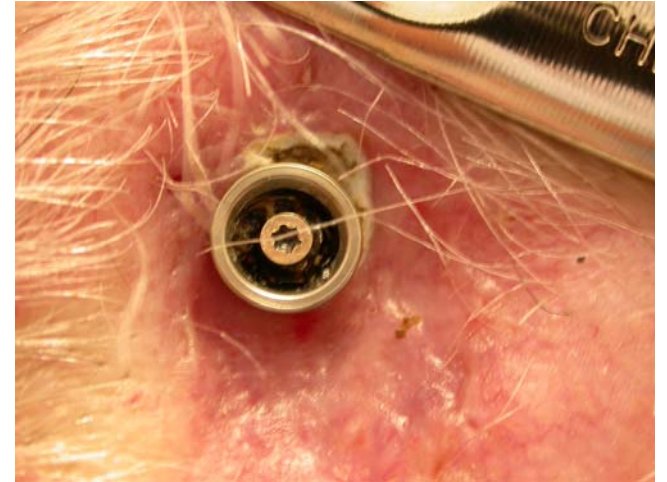
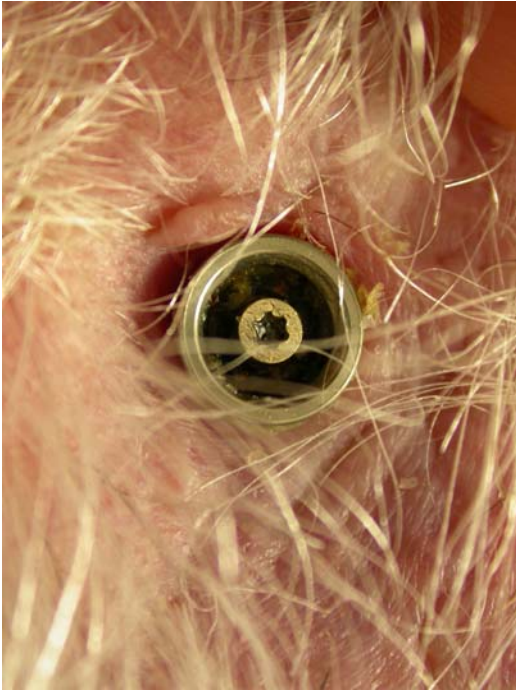




Infected sebaceous cyst



The 'overhang'



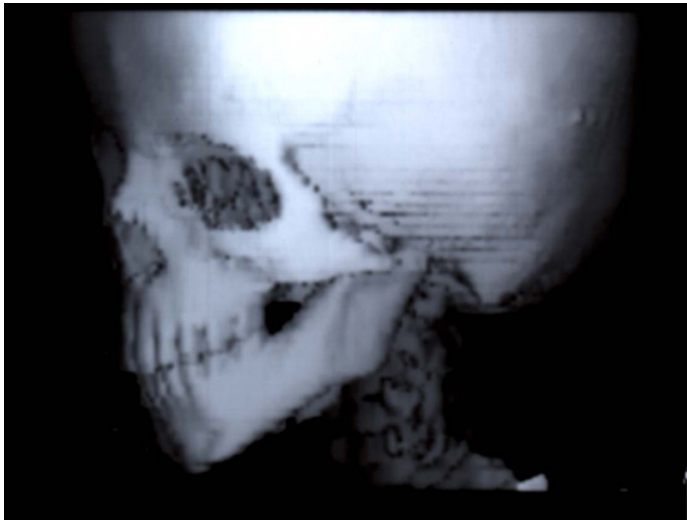
Cases

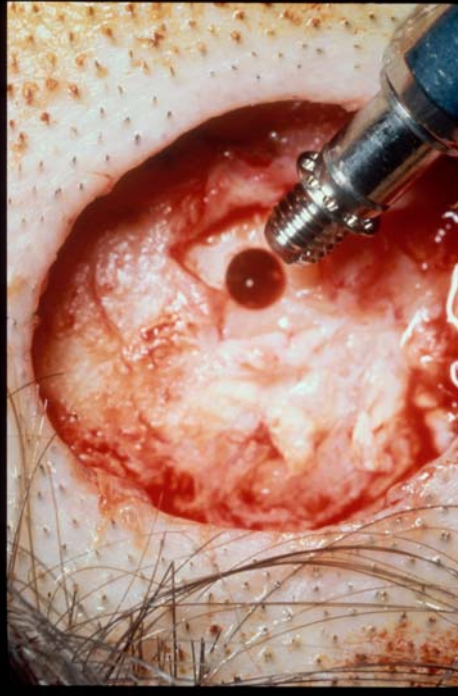
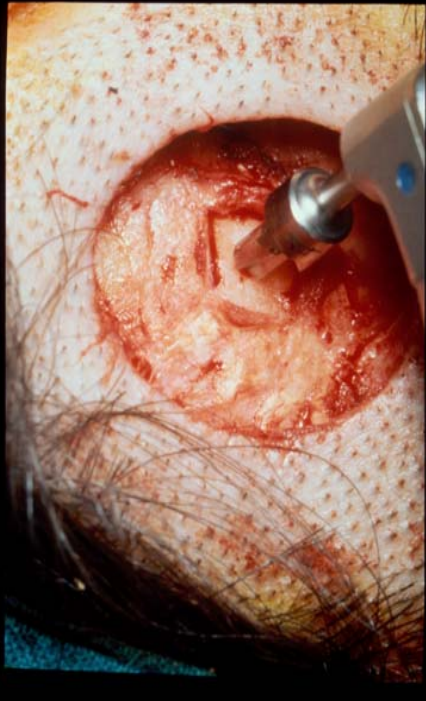
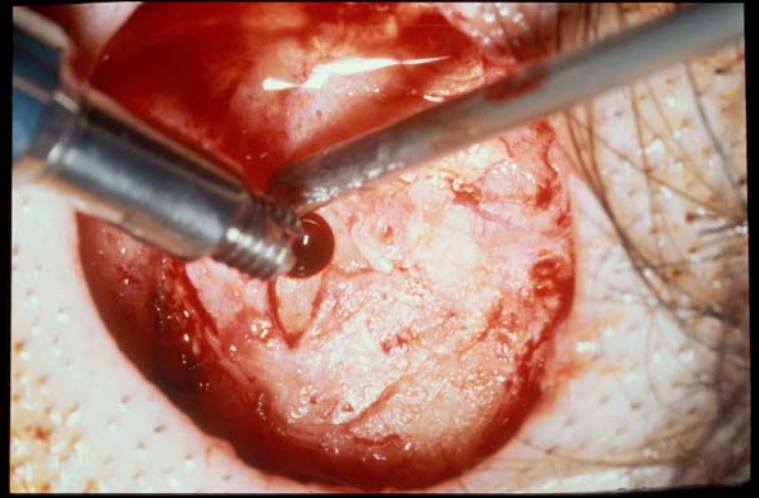




Case

- 4 Y Girl
- Congenital Aural Atresia
- For atresia repair consult

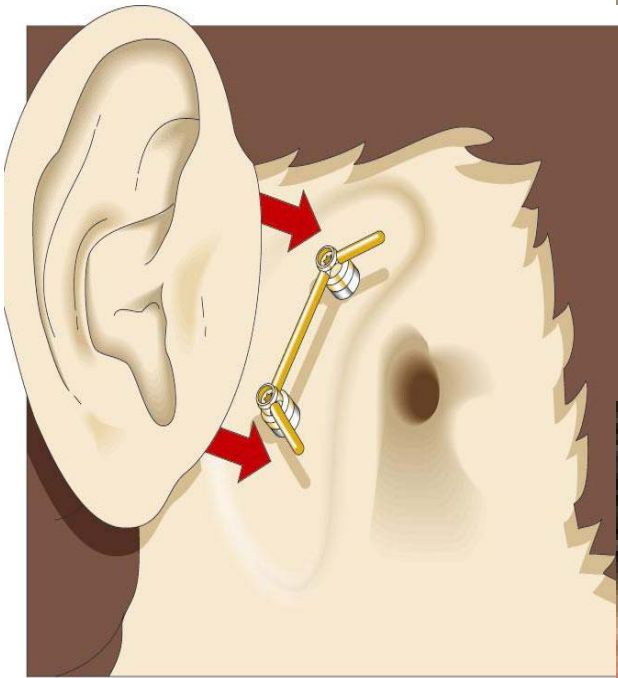




Microtia / atresia

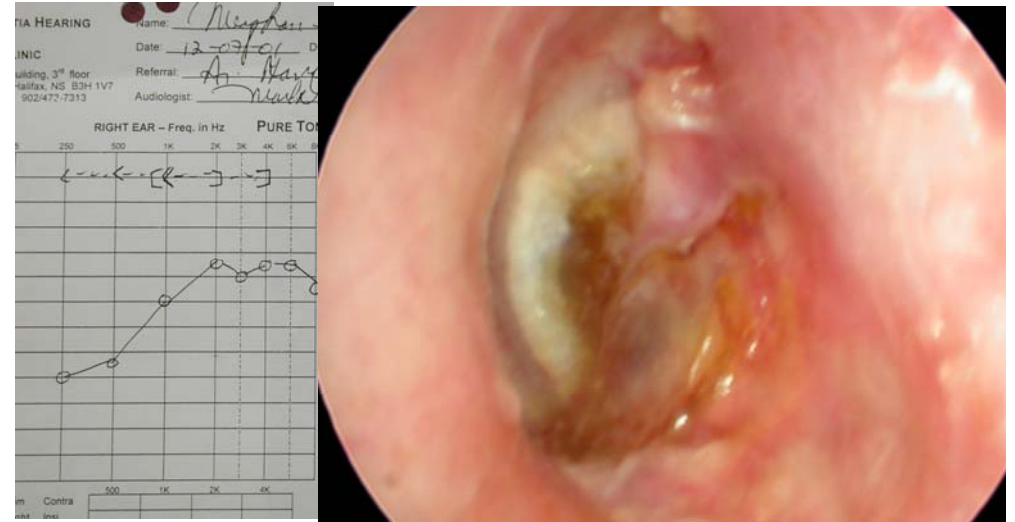


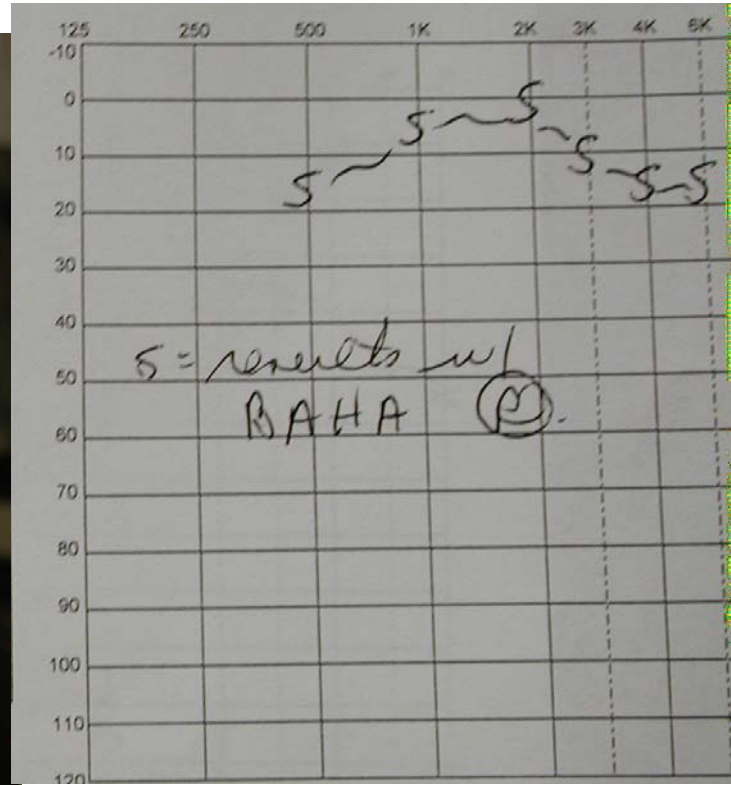
Microtia



Case

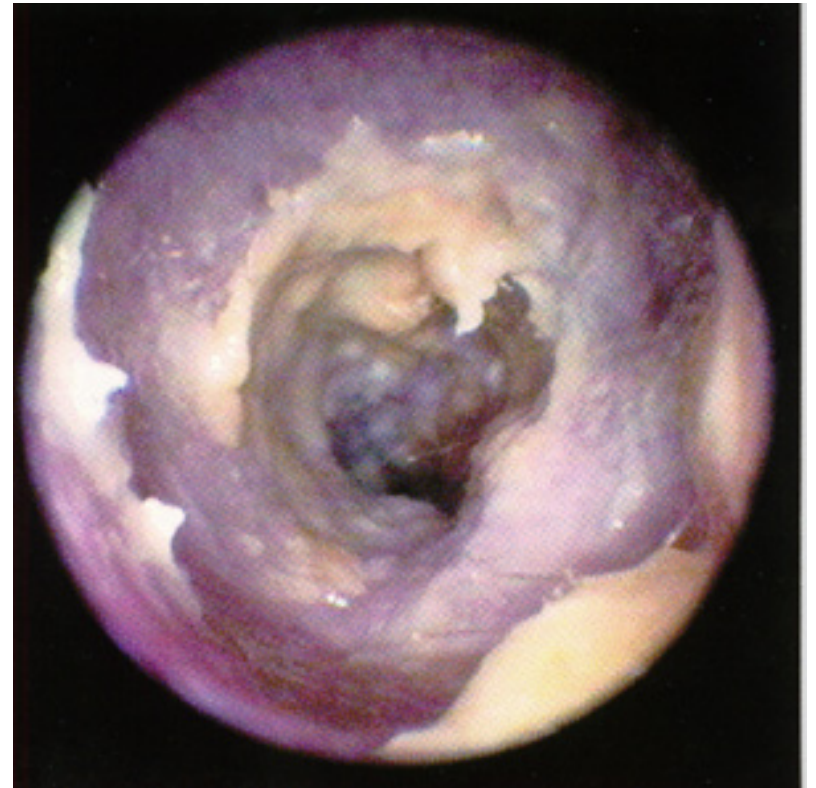
- 17 Y
- Left FD → SNHL
- Right CSOM
- HA not good
- ? Right / Left BAHA





Case

- 19 Y old Female
- Hemifacial microsomia
- Bilateral CSOM
- Can not use HA
- Bilateral CHL 45 db

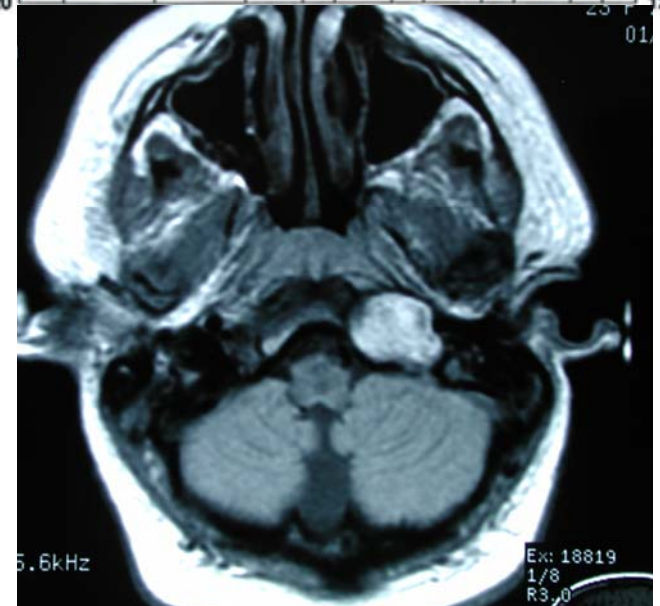
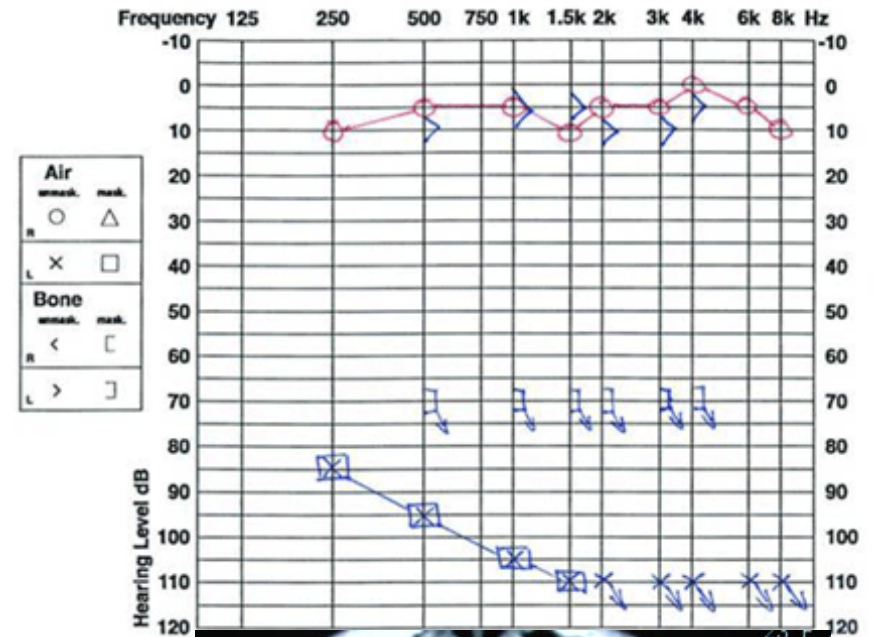


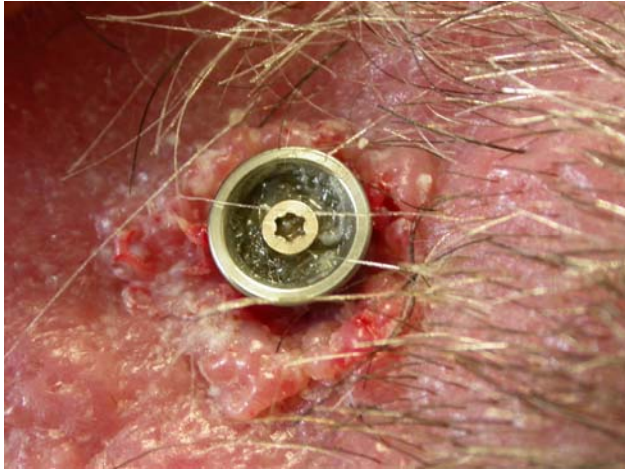
Hemifacial microsomia



Case

- 75 Y old Male
- Left Lipoma



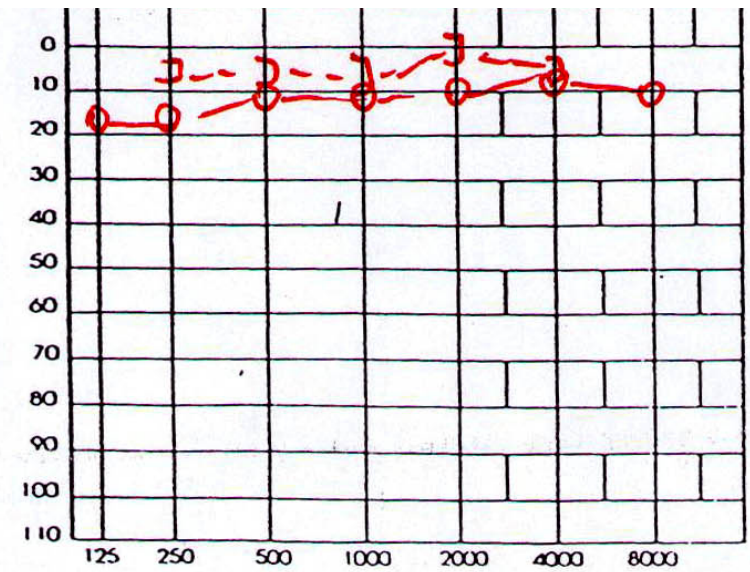
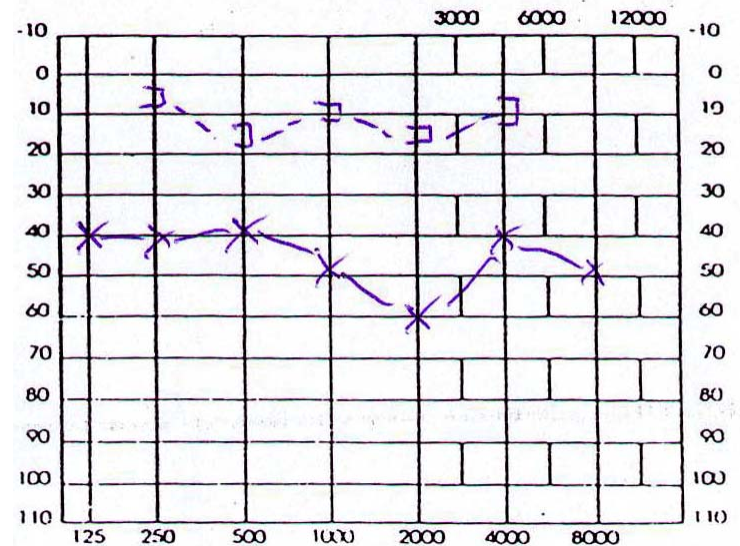


- Florid granulation tissue
- Debridement
- Topical cautery



Case

- 44 Y Old Female
- Left severe retraction
- Fail surgeries post-Stapedectomy
- No more ear surgery
- Policewoman
- [Video-1](#)
- [Video-2](#)

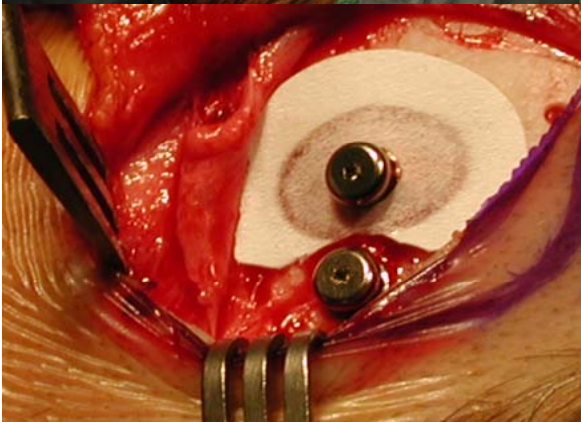
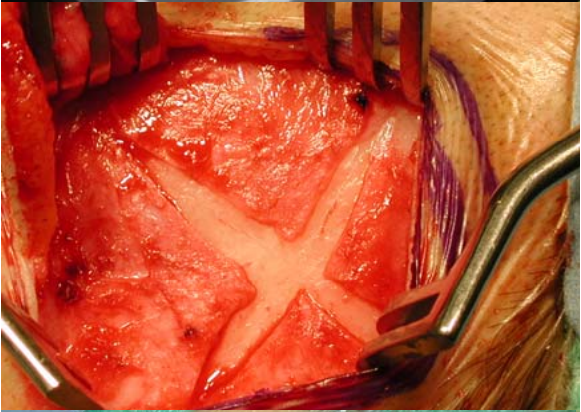


Nonsurgical Treatment





Paediatrics



Add Speech presentation

Summary

- BAHA is excellent for bilateral conductive hearing loss with good bone curve
- Less benefit for unilateral conductive loss
- Better than CROS aids
- Problems are relatively minor
- Skin graft site is the biggest early and long term challenge
- Easy operation, but lots of little “tips”

النتائج 21 - 40 من حوالي 334 لـ AL-BAHA مع تشغيل ميزة البحث الآمن Safesearch. (الوقت المستغرق 0,18)

صور عرض كل الأحجام



Sheep.gif
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msas2004.tripod.com



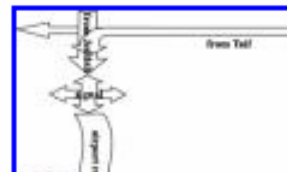
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destinia.com



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33 كيلوبايت x 331 بكسل
www.binzagr.com.sa



Arabian Leopard.jpg
17 كيلوبايت x 238 بكسل
www.ncwcd.gov.sa







المنازل القديمة في الباحة

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***THANK
YOU***