

SURGICAL MANAGEMENT OF THE DIZZY PATIENT

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Chicago Dizziness and Hearing

Very few dizzy conditions have a surgical treatment

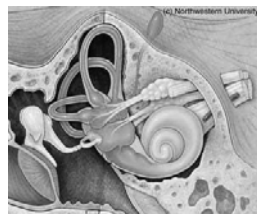
- Meniere's Disease
- Perilymphatic Fistula (PLF)
- Superior Canal Dehiscence (SSD)
- Benign Paroxysmal Positional Vertigo (BPPV)
- Acoustic Neuroma

Meniere's Disease



Normal

Hydrops



Surgical Treatments for Meniere's Disease

- Indications
 - Definite Meniere's Disease
 - Vertigo: Intractable, handicapping

Chicago Dizziness and Hearing

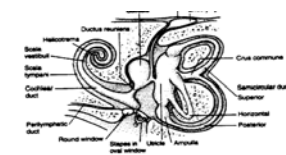
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Meniere's Procedures ordered by amount of damage done to ear

- Shunts and Sac decompressions
- Steroid injection
- Gentamicin injection
- Labyrinthectomy
- Vestibular Nerve Section

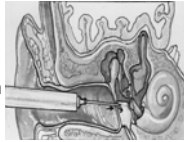
Shunts and Sac Surgery

- Popular operation
- No substantial morbidity
- Controversial whether surgery is better than placebo (author's view – little or none)



Intratympanic steroids: Dexamethasone injection

- Rapidly growing use
- No major morbidity
 - Sometimes hole in ear drum
- Helps for about 3 months
- Issue – not a durable fix



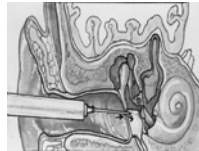
Intratympanic Gentamicin: Frequency of Delivery

- Multiple daily dosing -- unsafe
- Weekly – unsafe
- Low-dose – once/month
- Titration – stop when response



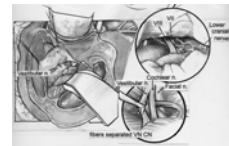
Intratympanic Gentamicin: Goals/Endpoint

- Vertigo control
- Not vestibular ablation
- Minimal morbidity -- durable
- Very good procedure
- Changes vestibular testing results
 - Spontaneous nystagmus
 - Canal paresis
 - Vibration induced nystagmus



Ablative Rx of Meniere's Disease RARE procedures in 2008

- Labyrinthectomy – lose hearing
 - Transmastoid
 - Transcanal
- Vestibular neurectomy
 - Retrosigmoid
 - Retrolabyrinthine
 - Middle fossa



Ablation works -- Complete/Substantial Vertigo Control Results

- Labyrinthectomy
 - Transcanal: 70 – 95%
 - Transmastoid: 90 – 95%
- Vestibular nerve section: 90 – 98%
 - SNHL: 1 – 25%

Surgical/Ablative Treatments for Meniere's Disease: Summary

- Ineffective treatments – Shunts
- Effective treatments -- Gentamicin
- Last resort treatments -- Ablation

PLF: Symptoms – resemble Menieres’s disease

- Chronic disequilibrium
- Sound-induced dizziness
- ?Recurrent vertigo
- Unilateral otologic symptoms
 - Tinnitus
 - Aural fullness
 - Sensorineural hearing loss



PLF Surgery: Results

- > 90%: total or near-total relief
- < 2%: mild sensorineural hearing loss

- PLF surgery is sometimes considered “controversial” due to history of high surgical volume in certain areas of the country

Superior Canal Dehiscence

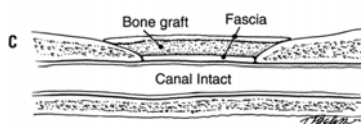


SSCD: Symptoms

- Sound-induced dizziness
- Pressure-induced dizziness
- Chronic disequilibrium
- “Conductive” hearing loss
- Autophony

SSCD: Roofing and Plugging

- Only about 1 in 5 patients with SCD elect to have surgery.
- > 90%: dizziness gone
- 1 – 4 weeks unsteadiness
- < 1%: sensorineural hearing loss



Benign Positional Vertigo: Surgery – very Rare

- Indications for surgery
 - Clear diagnosis
 - Vertigo: > 6 – 12 months
 - Failed non-surgical treatments (PT maneuvers)
- Practically, only about 1/100 patients meet these criteria, and less than 1/500 per year have surgery.

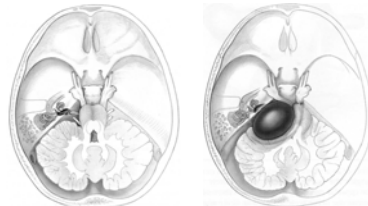
Benign Positional Vertigo: Surgery

- Surgical Options
 - PC canal occlusion – 4% risk to hearing
 - Singular neurectomy (cut nerve to PC)
 - Few surgeons can do this procedure (it's hard)



Acoustic Neuroma: Symptoms

- Slowly progressive unilateral sensorineural hearing loss
- Unilateral tinnitus
- Dizziness



Acoustic Neuroma: Treatments

- Watchful waiting
 - Reasonable approach – scan every year
 - All other alternatives are destructive
 - Patient may die of old age before tumor gets too big
- Radiation
- Surgical removal

Acoustic Neuroma: Treatments

- Radiation
 - Gamma Knife
 - Linear accelerator
- Reasonable treatment
 - Stops tumor from growing
 - No cutting – no anesthesia
 - Hearing eventually goes anyway

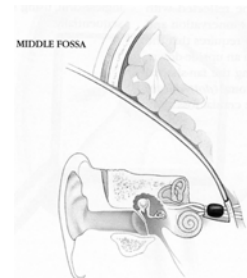


Acoustic Neuroma: Surgical Removal

- Useful Hearing – attempt to spare
 - Middle fossa approach
 - Retrosigmoid approach
- Non-serviceable Hearing
 - Translabyrinthine approach

Middle Fossa Approach

- Lift up brain to do surgery
- Hearing temporarily spared but eventually is lost over time
- Similar results to radiation



Summary: There are very few conditions where surgery is helpful for dizziness

- Repairs – of fistulae and SCD
- Injections of steroids - -Meniere's
- Destruction of "bad ears"
 - Gentamicin treatment for Meniere's – main improvement in recent years
 - BPPV "canal plugging"
- Removal of acoustic neuroma
 - Some risk to this surgery, especially middle fossa
 - Being supplanted by gamma knife