

# SURGICAL MANAGEMENT OF THE DIZZY PATIENT

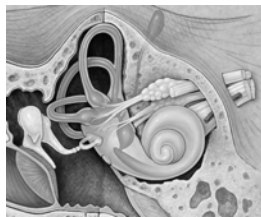
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Chicago Dizziness and Hearing

Very few dizzy conditions have a surgical treatment

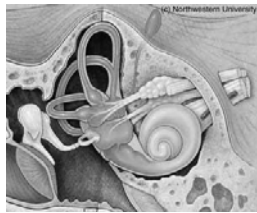
- Meniere's Disease
- Perilymphatic Fistula (PLF)
- Superior Canal Dehiscence (SSD)
- Benign Paroxysmal Positional Vertigo (BPPV)
- Acoustic Neuroma

## Meniere's Disease



Normal

Hydrops



## Surgical Treatments for Meniere's Disease

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

Chicago Dizziness and Hearing

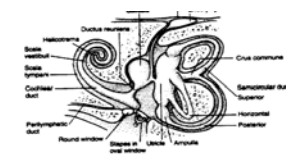
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Meniere's Procedures ordered by amount of damage done to ear

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

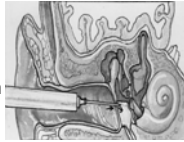
## Shunts and Sac Surgery

- 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



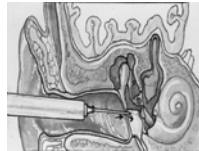
### Intratympanic Gentamicin: Frequency of Delivery

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



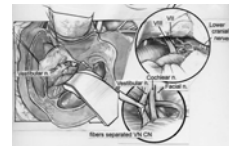
### Intratympanic Gentamicin: Goals/Endpoint

- 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

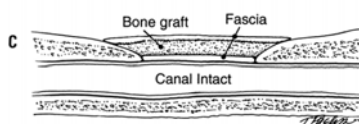


## SSCD: Symptoms

- 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.

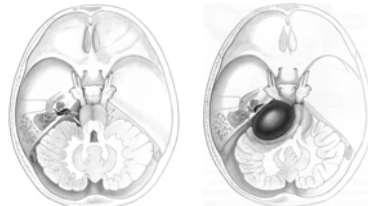
## Benign Positional Vertigo: Surgery

- 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

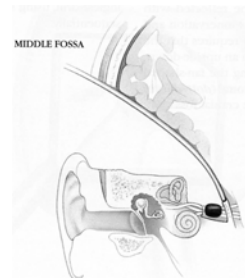


## Acoustic Neuroma: Surgical Removal

- 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