Headmirror's ENT in a Nutshell
Meniere's Disease
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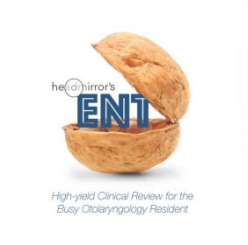

Presentation (0:27)

- Symptoms: vertigo, hearing loss, tinnitus, ear fullness
    - Dizziness: Description of "*vertigo*?": sensation of environmental movement when still.
        - Spontaneous vertigo, non-positional
        - Rule out lightheadedness, pre-syncope
        - Nausea, vomiting associated
        - What provokes (triggers)? How long does it last?
    - Hearing loss
        - Timing doesn't always correlate with vertigo
    - Tinnitus
    - Ear fullness
        - Ear specific
    - Rule out vestibular migraine
        - Photophobia, osmophobia, headache
    - Rule out vertebrobasilar stroke
        - Confusion, dysphagia, diplopia, dysphonia
        - Focal or sensory weakness

- Risk Factors (7:45)
    - Genetic disposition: 10% of patients family history
    - Co-morbid: history of migraine

- Differential diagnosis (3:50)
    - Vestibular migraine (can have both!)
    - BPPV
    - Benign recurrent vertigo
    - Persistent Perceptual Postural Dizziness (no vertigo)
    - Vestibular neuritis
    - Panic attack
    - Labyrinthitis
    - Autoimmune disease (inner ear or systemic)
    - Cogan's syndrome
    - Stroke: vertibrobasilar insufficiency, posterior fossa infarcts
    - Vestibular schwannoma
    - Tertiary syphilis

Pathophysiology (6:00)

- Post-mortem histologic finding of endolymphatic hydrops

- Overproduction of endolymph with stretching of the membranes of the endolymph compartment
- Note: Many people have endolymphatic hydrops without Meniere's Disease
- Two Theories: poorly understood
  - Channelopathy (K+/Ca2+)
  - Repetitive vascular insult (migraine or systemic vasculitis)

Workup (8:35)

- Audiogram
  - 1995 AAO criteria: Low frequency sensorineural hearing loss in symptomatic ear
    - Decrease in speech discrimination score often seen
    - Bilateral disease: incidence goes up the longer the disease is followed

- Imaging
  - Typically normal
    - Research looking into hydrops, not clinically relevant
  - MRI –rule out: vestibular schwannoma in asymmetric hearing, multiple sclerosis lesion, idiopathic intracranial HTN (empty sella), chronic meningitis (thickening of dura)

- Vestibular Testing
  - Confirmatory
  - VNG (videonystagmography), rotary chair, cVEMP/oVEMP testing

- Labs
  - Not relevant to Meniere's
  - Could consider if evaluating for other systemic causes of dizziness

Diagnosis (13:48)

- Criteria (definitive):
  - Two or more episodes of spontaneous vertigo >20 minutes and < 24 hours (typically hours).
  - Documented audiometric change in suspected ear
  - Tinnitus and ear fullness in suspected ear

  Note: *Probable* disease is same criteria with 1 episode of vertigo. This is a clinical diagnosis based on symptoms and audiogram.

Treatment (16:12)

- Lifestyle
  - Low salt diet
  - Avoid: caffeine, smoking, nicotine, alcohol, stress, increase exercise

- Medical Therapy
  - First Line (US): K+ sparing diuretic (hydrochlorothiazide, triamterene)

        - Combined with low Na+ diet (1500 mg/day)
    - First Line (Europe): Betahistine – antihistamine (8mg TID)
        - May improve cochlear blood flow
        - Cochrane review with no benefit
    - Symptom Treatment
        - Anti-vertigo: benzodiazepines (low dose, short half-life, i.e. Ativan)
        - Anti-nausea: Compazine, Phenergan

- <u>Procedural</u>
    - Trans-tympanic
        - Non-ablative: steroid injection (dexamethasone 24 mg/1 cc, 0.5 mL)
        - Ablative: gentamycin
            - Variable, but may be given until complete ablation, 0% function on ice water caloric testing OR every 6-8 weeks
            - Can induce more symptoms

- <u>Surgical</u>
    - Non-ablative – endolymphatic sac decompression
        - Low side effect
        - 70% effective, preserve balance and hearing
    - Ablative – vestibular nerve section
        - Restrosigmoid craniotomy, section CN VIII at cerebellopontine angle
        - Patients best served: good hearing, but continued vertigo
    - Labyrinthectomy
        - Gold standard
        - Sacrifices remaining hearing
        - Can be combined with cochlear implant

- <u>Course of Disease</u>
    - Chronic disease
        - Relapses common
        - Success is decrease frequency and duration of episodes
        - Post treatment vestibular rehabilitation needed, especially after ablative procedures