New updates in diagnosis and management of Menier’s disease

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Introduction

- Meniere’s disease is characterized by episodic vertigo, low frequency fluctuating sensorineural hearing loss, tinnitus, and fullness on the affected side.

- Gait problems, postural instability, and drop attacks may accompany.

TYPS:

Definite MD

- Two or more spontaneous attacks of vertigo, each lasting 20 minutes to 12 hours
- Audiometrically documented fluctuating low- to midfrequency sensorineural hearing loss in the affected ear on at least 1 occasion before, during, or after 1 of the episodes of vertigo
- Fluctuating aural symptoms (hearing loss, tinnitus, or fullness) in the affected ear
- Other causes excluded by other tests

Probable MD:

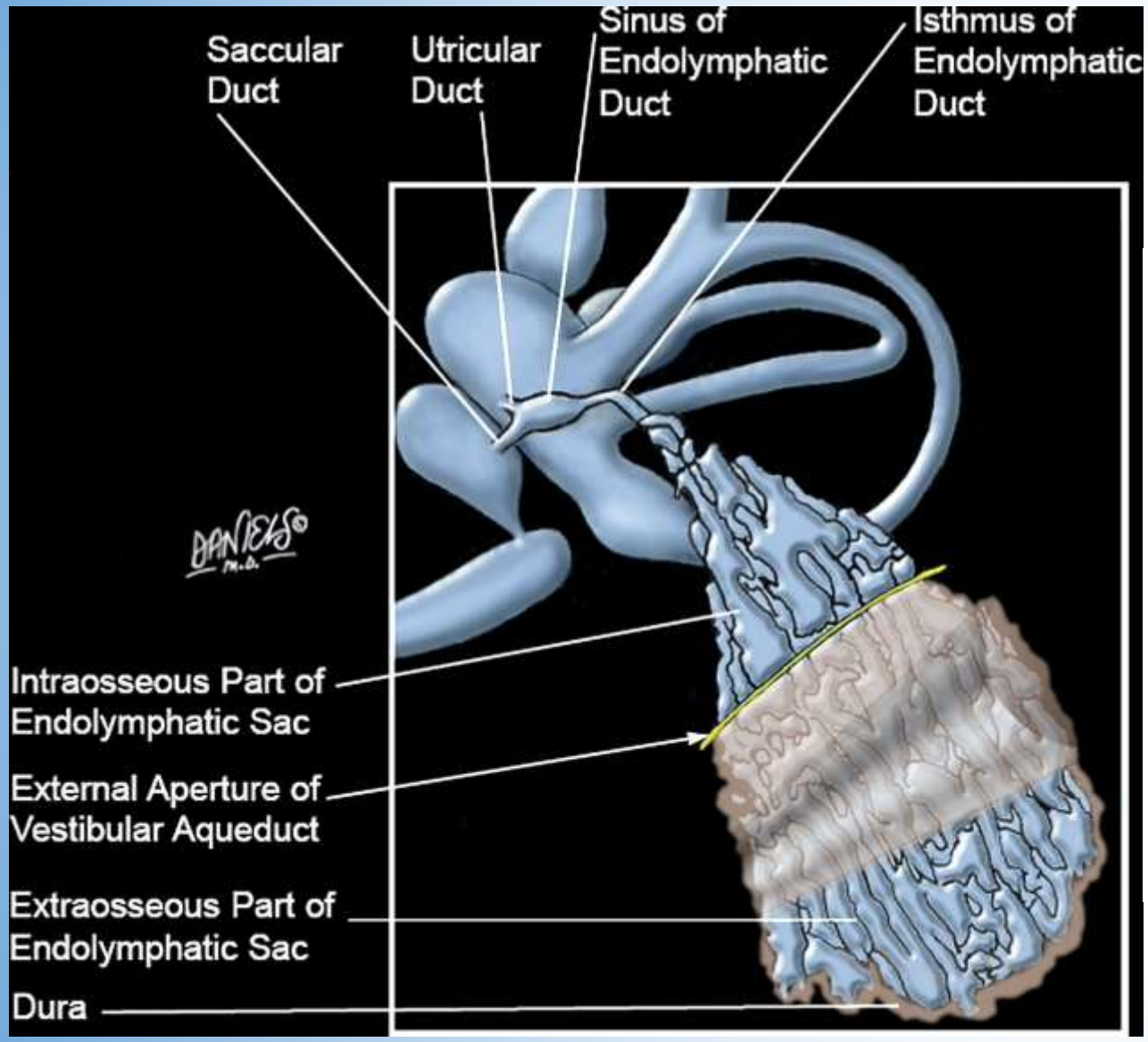
- At least 2 episodes of vertigo or dizziness lasting 20 minutes to 24 hours
- Fluctuating aural symptoms (hearing loss, tinnitus, or fullness) in the affected ear
- Other causes excluded by other tests

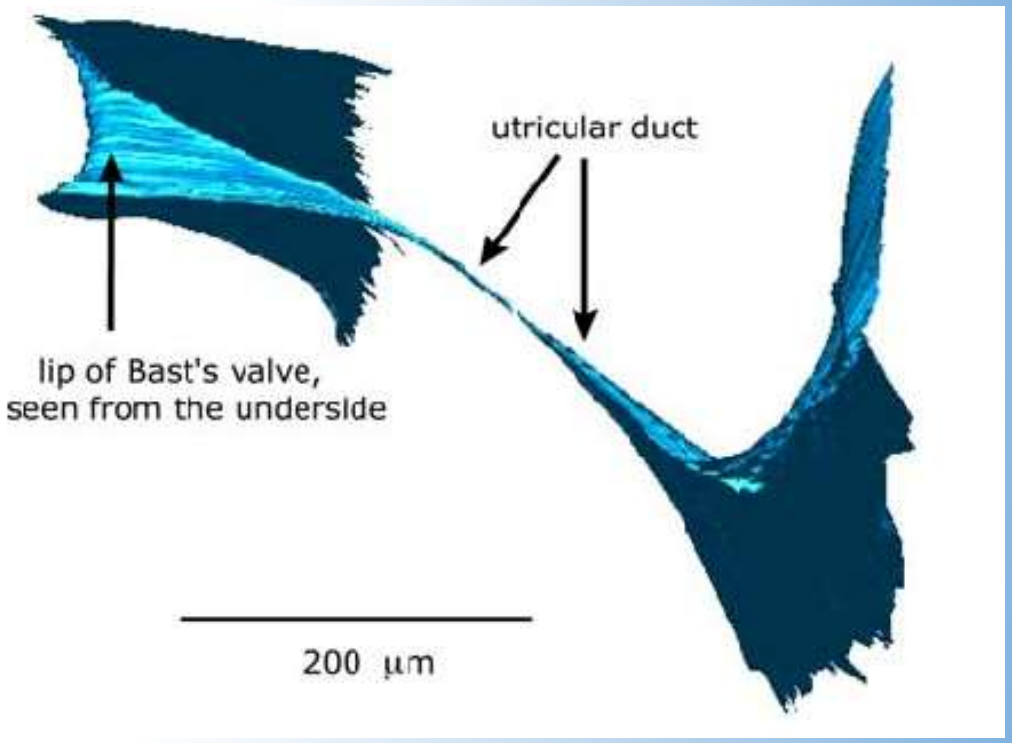
Pathophysiology

- A sudden increase in endolymph volume may cause a shift of fluid from the pars inferior (cochlea) to the pars superior (utricle and semicircular canals) stretching the vestibular hair cells within the cristae of the semicircular canals

Support:

- Audiological, electrophysiological
- Animal experiments


Saccular Duct
Utricular Duct
Sinus of Endolymphatic Duct
Isthmus of Endolymphatic Duct
Intraosseous Part of Endolymphatic Sac
External Aperture of Vestibular Aqueduct
Extraosseous Part of Endolymphatic Sac
Dura


utricular duct
lip of Bast's valve,
seen from the underside
200 µm

Assessment

- **Audiologic**

- Audiologic evaluation following a relevant history taking is mandatory for diagnosis of MD

- **Vestibular**

- Videonystagmography (VNG)
- Caloric tests
- Video head impulse tests
- Vestibular evoked myogenic potentials (VEMPs)
- Electrocochleography

Assessment

- Imaging

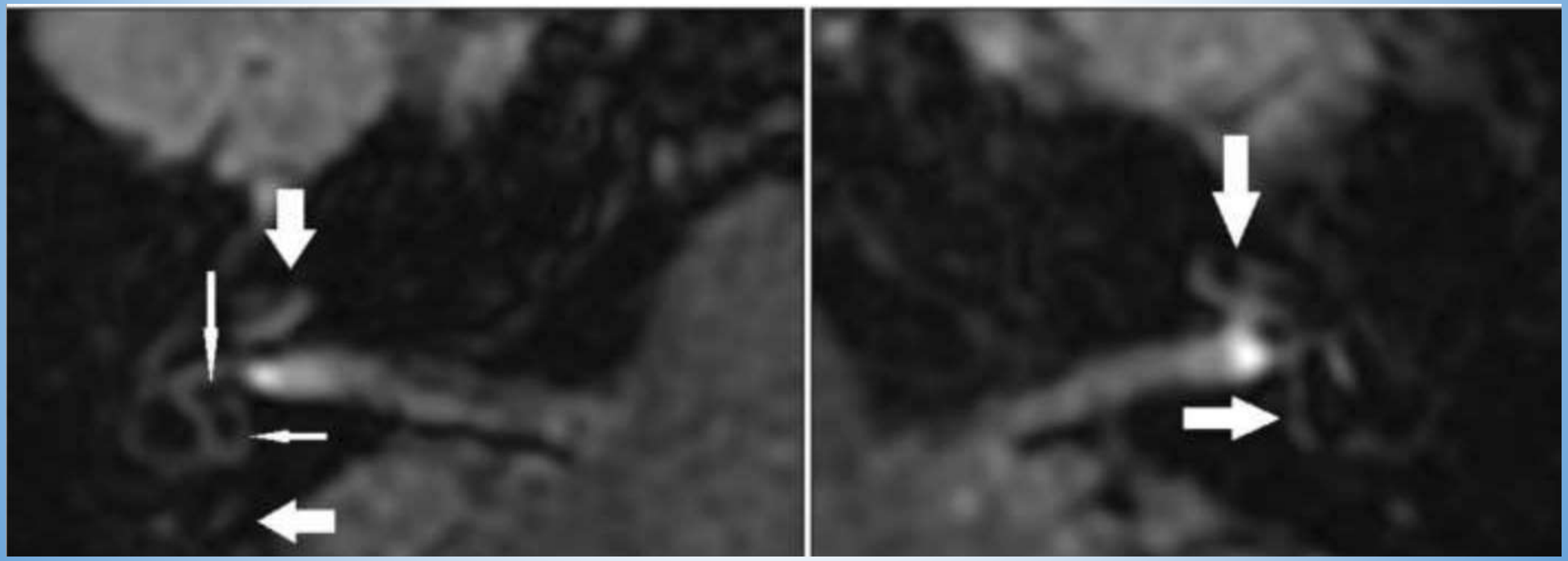
- MRI

  Better to do

JOURNAL OF OTOLOGY

Correlation of semi-quantitative findings of endolymphatic hydrops in MRI with the audiometric findings in patients with Meniere's disease

Mohammad Ali Kazemi, MD ,Ali Ghasemi, M.D. Jan Casselman, MD, PhD Mohammad Shafiei, MD ,Masoud Motasaddi Zarandy, MD



First line management(preventive)

- First line:
- if a patient presents a comorbid condition such as allergy, migraine or autoimmune arthritis, they should be treated
- **Diet**
- caffeine and salt. Low sodium diet and high water intake may help to maintain inner ear homeostasis
- **Betahistine**
- Betahistine is a weak histamine H1 agonist and a stronger H3 antag-onist.
- **Diuretics**(The thiazide group)

During attack

Second line Management (Preventive)

- Second line
- Intratympanic treatment

Among the two available steroids derivatives, dexamethasone is practical to use due to better tolerance by the patients, as methylprednisolone creates burning sensation in the middle ear mucosa. The challenge with dexamethasone is its availability with low concentrations, such as 4 mg/mL.

Third line Management

- Third line

- Endolymphatic sac surgery

Fourth line Management

- Forth line
- **Intratympanic Gentamicin Injection**

Gentamicin is an aminoglycoside antibiotic having more vestibulotoxic than cochleotoxic effect. Its effect is mainly causing atrophy on type 1 vestibular cells as well as the neuroepithelium

The recommended application of gentamicin is one injection of 26.7 mg/mL concentration and scanning the vestibular physiological responses by the number of vertigo spells, a bedside evaluation, VEMPs, and video head impulse tests.

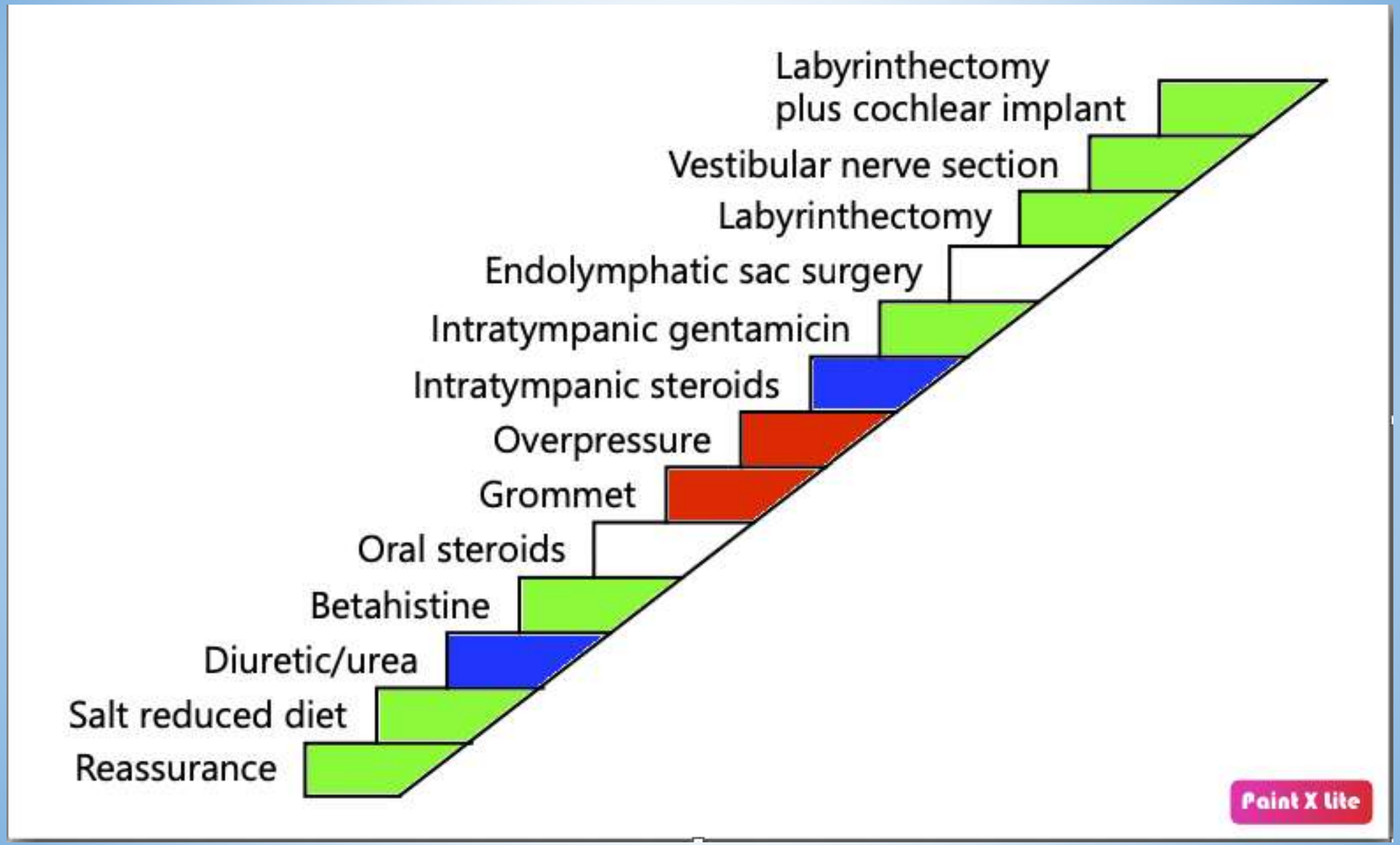
Fifth line Management

- Fifth line
- Advanced Surgery

labyrinthectomy and vestibular neurectomy

Vestibular neurectomy is believed to be the most efficient technique for drop attacks (Tumarkin‘s disorder) and for incapacitating Ménière’ disease.

Labyrinthectomy is the oldest surgical method to treat MD, and today is limited to older patients. The technique can be associated with **cochlear implantation** within the same stage in case of profound bilateral hearing loss.


Labyrinthectomy
plus cochlear implant
Vestibular nerve section
Labyrinthectomy
Endolymphatic sac surgery
Intratympanic gentamicin
Intratympanic steroids
Overpressure
Grommet
Oral steroids
Betahistine
Diuretic/urea
Salt reduced diet
Reassurance
Paint X lite

THANK YOU FOR YOUR ATTENTION