ENT DISEASE TREATMENTS

BY Fatima Haider

* Anotia / Microtia
  - Pinna plasty → Done by rib/ costal cartilage

* EAC Atresia
  - Canaloplasty

* Unilateral EAC Atresia + Anotia
  - Pinnaplasty first then Canaloplasty

* Bilateral EAC Atresia + Anotia
  - BAHA (Bone Achored Hearing Aid)
  - In children < 5 years → Soft band Hearing Aid

* Bat ear
  - Otoplasty → incision behind the ear is made to reshape the cartilage

* Pinna Hematoma (Cauliflower ear / Boxer's ear)
  - Needle aspiration followed by pressure dressing

* Peri chondritis of pinna
  - Ciprofloxacin (Antibiotic of choice)
  - NSAIDs
  - Incision and drainage

* Keratosis Obturans (Ear wax)
  - Wax is removed by microsuction after giving wax dissolvants

* Acute otitis Externa
  - Antibiotics
  - Analgesics
  - 10% ichthymol glycerine packing
    Ichthymol → Local antiseptic
    Glycerin → Hygroscopic

* Otomycosis
  - Aural toilet by microsuction
  - Topical antifungal ear drops
  - Keratolytic Agents → Salicylic / Acetic acid
  - Gentian Violet → prevent biofilm formation

* Myringitis bullosa hemorhagica
  - Topical antibiotics
  - Topical steroids ear drops

* Malignant otitis Externa
  - Ciprofloxacin → DOC
  - Anti-pseudomonal Antibiotic IV
    - 3rd Gen cephalosporins

* Patulous Eustachian Tube
  - Inject silicon paste

* Chronic obstruction of Eustachian Tube
  - Eustachian tube balloon dilatation

* Benign Paroxysmal positional Vertigo (BPPV)
  - Diagnosis → Dix Hallpike Manoeuvre
  - Tx
    - Epley's Manoevre → Treatment of choice
    - Semont's Maneuvre
    - Brandt-Daroff → can be done at home

- For lateral Canal BPPV
  - Lemperts Maneuver
  - Log Roll (Barbecue)

* Frey's Syndrome

- Anti perspirant → Aluminum chloride
- Botulinum toxin → injected into affected skin
- Fascia lata → b/w skin and underlying fat
- Tympanic Neurectomy → section of tympanic branch of CN9 will interrupt these fibers and give relief

* Acute Suppurative Otitis Media

Stage I and II → Pre Suppuration

↙ Tubal Occlusion

- Antibiotics
- Analgesics
- Nasal Decongestant Drops (Xylometazoline, Oxymetazoline)

- Stage III (stage of suppuration)
  - Myringotomy (performed in postero inferior quadrant)

- Stage IV
  - wait and watch for perforations to heal on its own

* Acute Mastoiditis

- Iv Antibiotics
- Analgesics
- Myringotomy → small incision in tympanic membrane to drain fluid and relieve pressure in middle ear

* Coalescent mastoiditis

- Iv antibiotics (3 weeks)

If not resolve

- Mastoidectomy (simple / cortical / schwartz)

we don't touch middle ear, just drill the mastoid

* Serous otitis media / Glue ear

- Treat the cause
- Remove fluid from middle ear by myringotomy in antero inferior quadrant and grommet insertion done

* Otitic Barotrauma (Airplane ear)

- Nasal decongestion
- Steam inhalation
- Chewing / swallowing exercises
- Myringotomy

* Tubotympanic Disease (safe CSOM)

- Active
  - Antibiotics (for discharge)

- Inactive
  - Tympanoplasty (Myringoplasty + Repair of ossicles)
    ↳ TOC
  - Myringoplasty (repair of TM)
    ↳ (closure of perforation of pars tensa of TM)

* Attico Antral Disease (Cholesteatoma)
  - Modified Radical Mastoidectomy → TOC
    ↳ also known as canal wall down mastoidectomy

* Suppurative Labyrinthitis
  - IV Antibiotics

* Lateral / Sigmoid Sinus Thrombosis
  - Surgery
  - IV Antibiotics

* Glomus Tumor
  - Surgical excision

* Meniere's Disease
  - Acute Phase
    - Labyrinthine Sedatives
  - Maintenance Phase
    + Medical
      - Kt Sparing Diuretics
      - B-Blockers
      - Antihistamines
    * Surgical
      - Conservative
        - Endolymphatic sac decompression
        - Vestibular neurectomy
      - Radical
        - Surgical Labyrinthectomy (surgical Landmark Donaldson's line)

- Gold Stand Tx for intractable vertigo in patient of Menierels disease → Surgical Labyrinthectomy

* Vestibular Schwannoma

Tx of Large Tumor

.Surgical excision

Tx of Small Tumor

Old Patient, Slow growing tumor

.Wait and watch

.MRI done every 6th month and observation

Young Patient, Fast Growing Tumor

. Gamma knife excision / cyber knife excision
(Targeted Radiotherapy technique aka)
stereotactic Radiotherapy

★ Choanal Atresia

- Guedel's Oropharyngeal airway

↓ If not available

McGovern Technique → put a nipple with wide hole

- T_x → Endoscopic Excision of Atresia

★ Naso Alveolar / Naso labial / Klestadt's Cyst

- Surgical excision by sub labial approach

★ Dentigerous Cysts / Follicular Cyst

- Excision with extraction of tooth
- If not Complete → Marsupialization of cyst

★ Nasal Glioma

- Excision and Repair

★ Deviated Nose

- Rhinoplasty

★ DNS

- septal Surgery along with
  - Turbinectomy
  - Turbinoplasty

★ Nasal Hump

- Reduction Rhinoplasty

* Saddle Nose
  - Augmentation Rhinoplasty

* Rhinophyma / Potato Tumor
  - CO_2 laser dermabrasion → TOC

* Rodent Ulcer / Basal cell Carcinoma
  - Wide local excision

* Nasal Vestibulitis
  - Systemic Antibiotics (oral/IV) → to prevent risk of cavernous sinus thrombosis
  - Analgesics

* NLD Obstruction
  - Dacryocystorhinostomy
    - New NLD opening is made in middle meatus
    - Endoscopic DCR preferred
  - NLD syringing

* Anterior Epistaxis

- Chemical Cautery by using Silver nitrate, TCA, carbolic acid (phenol)
- Anterior Nasal packing by placing Ribbon gauze in anterior nasal cavity

* Posterior Epistaxis

- Endoscopic electrocautery / Ligation → TOC
- Posterior nasal packing is done with help of Foley's catheter

*Arteries Ligation For Epistaxis

- Spheno palatine Artery (SPA)
- Internal Maxillary Artery
- External carotid Artery
- Anterior Ethmoidal Artery

* Septal Hematoma
  - Incision and Drainage
  - B/L Anterior nasal packing to stop the bleeding

* Septal Abscess
  - Incision and Drainage
  - B/L Anterior nasal packing
  - IV Antibiotics initially, later oral

* DNS (Deviated Nasal Septum)
  - Septal Surgery along with
    - Turbinectomy (cut and remove turbinate)
    - Turbinoplasty (reduce size of turbinate)

* Acute Rhinosinusitis
  - Symptomatic Treatment

* Acute Bacterial Rhinosinusitis
  - Antibiotics
  - Symptomatic Tx

* Chronic Rhinosinusitis

- Antibiotics + Nasal Decongestant
  ↓ Not improving
- Antral puncture and Lavage
  ↓ Recurrence
- FESS (Functional Endoscopic Sinus Surgery)

* Allergic Rhinosinusitis

- Mild → 2nd Gen Non Sedative Anti histamines
- Steroids (Intra Nasal spray) → DOC
- Immunotherapy (only curative therapy)

* Vasomotor Rhinosinusitis

- Intranasal Anticholinergic (Ipratropium bromide)
- Viridian Nerve block (Viridian Nerve Cryotherapy)
- Viridian Neurectomy → Gold Standard

* Rhinitis Medicamentosa

- Stop decongestants
- Intranasal corticosteroid Spray → DOC

* Antro choanal polyp
  - FESS (Functional Endoscopic Sinus surgery)
  - Endoscopy polypectomy

* Ethmoidal polyp
  - Steroid Nasal Spray
    or
  - FESS

* Atrophic Rhinosinustis (Ozaena)
  - Alkaline Nasal Douching
  - 25% glucose in glycerin
  - Antibiotics
  - Iron and Vit D Supplements
  - Estrogen Spray

If patient not Responding
  - Young's operation → alternative closure of nasal cavity for 6 months
  - Modified Young's operation → partial closure of both nasal cavity

* Rhinoscleroma / Woody Nose
  - Rifampicin → DOC
  - Laser Excision + Base Electrocautery → TOC

* Rhinosporidiosis / Strawberry Granuloma
  - Dapsone Amphotericin B → DOC
  - Laser Excision + Base Electrocautery → TOC

* Fungal Ball / Mycetoma / Aspergilloma
  - Evacuation by FESS
  - No Role of Anti Fungal

* Allergic Fungal Rhinosinusitis
  - FESS and removal of Fungus
  - Steroids oral → Short Course
    Nasal Steroids → prolonged
  - Immunotherapy

* Rhinocerebral Mucormycosis
  - Amphoterecin B
  - Surgical Debribement
  - Diabetes Control

* Mucocele / Pyocele
  - Endoscopic Drainage
    (known as Draft procedure in case of Frontal sinus)

* Pott's Putty Tumor
  - Drainage of abscess
    +
    Removal of sequestrum of bone
    +
    High Dose Antibiotics

* Osteoma
  - Endoscopic Excision

* Inverted Papilloma / Ringertz Tumor
  - Transnasal endoscopic excision

* Esthesio. Neuroblastoma
  - Endonasal Endoscopic Sinus Surgery

* Midline Lethal Granuloma
  - Chemotherapy

* Foreign Body in Nose
  - Removal by probe/eustachian tube catheter
  - Posterior Foreign body → Endoscopic removal under general anesthesia

* Thornwaldts' Disease
  - Incision and Drainage

* Chronic Adenoid Hypertrophy
  - Adenoidectomy

* Juvenile Nasopharyngeal Carcinoma
  - Endoscopic excision

* Nasopharyngeal Carcinoma
  - Chemoradiation

* Quinsy / Peritonsillar Abscess
  - Intra oral Incision and Drainage
  - IV Antibiotics
  - Interval Tonsillectomy → done 6 weeks after episode of Quinsy

* Vincent's Angina (Trench Mouth)
  - Metronidazole
  - Antiseptic
  - Mouth wash

* Faucial Diphtheria
  - Diphtheria Anti toxin

* Chronic Tonsillitis
  - IV Antibiotics
  - If not Responding → Tonsillectomy

* Stylalgia / Eagle's Syndrome
  - Styloidectomy
  - Tonsillectomy

* Zenker's Diverticulum
  - Excision Arial for large pouch
  - Conservative → Cricopharyngeal Myotomy
  - Dohlman's operation / Endoscopic Diathermy → TOC
    (Endoscopic Stapling of septum)

* CA Hypopharynx
  - Early/ small tumor → Radiotherapy
  - CCRT → TOC
    (CCRT - Combined chemo and Radiation Thurapy)
  - surgery generally not done
  - If Done → Total Laryngectomy with partial pharyngectomy

* Ludwig's Angina
  - Tracheotomy (can't intubate bc of tongue)
  - External Drainage
  - IV Antibiotics

* Laryngocele
  * External Laryngocele
    - Surgical Excision
  * Internal Laryngocele
    - Micro Laryngeal Surgery
  * Combined
    - Surgical excision

* Phonasthesia
  - Voice Rest followed by speech therapy

* Laryngomalacia
  - Conservative Tx
  - Disappears on its own by 2 yrs of age
  - Surgery → Supraglottoplasty

* Sub Glottic Hemangioma
  - Tracheostomy → to secure airway (incise b/w 2nd and 3rd tracheal rings
  - CO_2 laser excision
  - Sclerotherapy
  - Injection of steroids

* Laryngeal Web
  - CO_2 laser excision + silicon keel

To prevent adhesions of vocal cord, both vocal cords surgery is not done at the same time

* Acute Epiglottitis / Supra glottitis
  - Iv Ceftriaxone → DOC
  - Steroids Nebulization
  - Tracheostomy → if stridor is present
  - Laryngoscope is Contraindicated

* Croup
  - Symptomatic Treatment

* Reinke's edema
  - cessation of smoking
  - Stripping of epithelium from vocal folds (Decortication)

* Vocal Nodule / Singer's Nodule
  - Speech Therapy → TOC
  - PPI
  - Late Hard Nodule → surgery, along with Speech therapy and PPI

* Vocal Polyp
  - Micro Laryngeal surgery

* Laryngeal papilloma
  - Micro Laryngeal surgery

* Vocal Cyst
  - Micro laryngeal surgery

Juvenile Onset Recurrent Respiratory Papilloma (JORRP)

- Surgical excision → CO_2 laser excision
- Medical Adjunctive Therapy
  - Anti viral
  - Anti proliferative
  - Immuno modulatory
- Photodynamic Therapy
- Zinc Therapy → to prevent recurrence

CA Larynx

T_1/T_2 → Radiotherapy

T_3/T_4 → Total Laryngectomy
followed by Radiotherapy (to prevent Recurrence)
with or without Radical neck dissection

* U/L External Laryngeal Nerve Palsy
  - Conservative

* U/L Recurrent Laryngeal nerve palsy
  - Conservative

* U/L Vagus Nerve Palsy
  - Type 1 Thyroplasty → medialization of vocal cords

* B/L Recurrent Laryngeal Nerve Palsy
  - Tracheostomy → to save airway
  - Type 2 Thyroplasty → Lateralization of vocal cords

* B/L Superior Laryngeal Nerve Palsy
  - Tracheal Separation and Permanent Tracheostomy under local anesthecia → Gold standard
  - Total Laryngectomy + permanent Tracheostomy

DIAGNOSTIC TESTS IN ENT

By Fatima Haider

Diagnostic Tests

* Screening test for neonatal deafness
  - Oto Acoustic Emissions (OAE)
  - BERA (Brainstem Evoked Response Audiometry) → Confirmatory test

* Meniere's Disease
  - Electrocochleography

* BPPV
  - Dix Hallpike Maneuver

* Coalescent mastoiditis
  - CT Scan

* Serous otitis media / Mucoid OM / Glue Ear
  - Pure Tone Audiometry → AB Gap Conductive hearing loss 25-30 dB
  - Impedence Audiometry → B Type curve

* Labyrinthine Fistula
  - Fistula Test +ve
    Pressing on tragus with finger → Vertigo or nystagmus occurs

* True +ve Fistula Test
  - Labyrinthine Fistula

* False -ve Fistula Test
  - Dead ear
  - Cholesteatoma sac covering fistula

* False +ve Fistula Test → known as Hennebert's Sign
  - Congenital Syphilis
  - Meniere's disease
  - seen in hypermobile stapes and after stapedectomy

* Sigmoid / Lateral Sinus Thrombosis

- Tobey Ayer / Queckenstedt test
- Crow beck test
- CECT / MRI → IOC
  (Empty Delta sign)

Venous Sinus Thrombosis

- CT Scan with contrast → Filling Defect
- MRI
- Blood Cultures

* Otosclerosis

- Laser Stapedectomy → hole made in stapes footplate and anchored with piston

* Bleeding Aural polyp

- CT Scan
- Biobsy is absolutely contraindicated in bleeding aural polyp

✯ Glomus Tumor

- CECT → IOC
  (Phelp sign seen on CT)

✯ Meniere's Disease

- Pure tone audiometry → to confirm SNHL
  ↳ Low frequency SNHL (Rising Audiogram)
- Electro cochleography → confirmatory test

✯ Vestibular Schwannoma

- Contrast enhanced MRI (Gadolinium Contrast)
  ↳ ice cream cone appearance
  → Gold Standard

- PTA → SNHL

* Choanal Atresia
  - Suction Cannula
  - CT Scan → Confirmatory

* Encephalocele and Meningocele → Compressible swelling
  - Trans illumination Test → Positive
  - CT + MRI
    Furstenberg Test → Positive in encephalocele

* Nasal Glioma → non compressible
  - Trans illumination Test → Negative
  - Furstenberg Test → Negative
  - CT + MRI

* Chronic Rhinosinusitis
  - Antral puncture → Gold standard

Gold Standard Investigation befor FESS is:
  - CT scan

* Allergic Rhinosinusitis
  - Skin prick test → IOC
  - Nasal Allergen Challenge Test → Gold Standard
    (Provocation test)

* AC Polyp and Ethmoidal Polyp
  - Non Contrast CT Scan of nose and PNS

* Rhinoscleroma / Woody Nose
  - Biopsy + HPE for confirmation → IOC
    (Miculicz cell and Russell bodies are seen)

* Rhinosporidiosis / Strawberry Granuloma
  - Biopsy + HPE for confirmation
    (multiple thick walled sporangia)

* Allergic Fungal Rhinosinusitis
  - CT scan → Double Dense appearance
    (Hyper densities)
  - Bone erosion w/o invasion
  - Positive Fungal Culture

* Rhino Cerebral Mucormycosis
  - MRI Head

* Inverted Papilloma / Ringertz Tumor
  - Biopsy → Diagnosis
  - CECT Scan → To find extent of papilloma

* Foreign Body Nose

. Endoscopy → For Confirmation

. X-Ray

* CSF Rhinorrhea

. β-transferrin positive → Gold Standard

. HRCT of Nose and PNS → to find sites of leak

. MRI T_2 weighted Images

. CT Cisternogram (can see both fracture and CSF)

↳ most specific investigation

Indications of FESS

- Chronic sinusitis
- Complicated sinusitis
- recurrent acute sinusitis, Failed medical management of acute sinusitis, fungal sinusitis, Obstructive nasal polyposis, Sinus mucoceles, Remove foreign bodies, Tumor excision, Transsphenoidal hypophysectomy, Orbital decompression, Dacryocystorhinostomy, Septoplasty, Orbital nerve decompression, Grave's ophthalmopathy, Choanal atresia repair, CSF leak repair, Control epistaxis, Turbinectomy.

* Chronic Adenoidectomy
  - X-Ray STN Lateral View
    (STN - Soft Tissue Neck)

* Juvenile Nasopharyngeal Angiofibroma (JNA)
  - CECT → IOC

Biopsy is contraindicated due to high vascularity

* Zenker's Diverticulum
  - Barium Swallow
  - Video Fluoroscopy

* Quinsy / Peritonsillar Abscess
  - Culture

* Para pharyngeal Abscess
  - Lab and bacteriology
  - CT (Best modality)
  - MRI

* Retro pharyngeal Abscess
  - Lateral Neck X-Ray
  - CECT scan
  - Ultrasound

* Laryngocele
  - CT Scan in Valsalva procedure

* Laryngomalacia
  - Laryngoscopy

* Subglottic Hemangioma
  - Laryngoscopy → Reddish blue mass seen

* Acute Epiglottitis / Supra Glottitis
  - X-Ray STN → IOC
    - ↳ Thumb Sign : epiglottis swollen like a thumb
  - Fiberoptic Laryngoscope → Gold standard

* Croup (Acute Laryngo Tracheo Bronchitis)
  - Chest X-Ray → Steeple sign (pencil tip narrowing)

✡ TNM staging For CA Larynx

T_1 → one structure is involved

T_{1a} → 1 vocal cord > mobile

T_{1b} → 2 vocal cords

T_2 → >1 structure involved

T_3 → Vocal cord Fixed / Immobile

T_4 → Extra Laryngeal extension

- Superior mediastinum
- Prevertebral Space
- Encases carotid Artery

✡ CA Larynx

- Indirect Laryngoscopy → For Detection and extent
- Chest X-Ray
- CT → First line for staging
- Direct Laryngoscope
- Micro laryngoscope