

2. Topical Mitomycin C is used for _____

a) Endoscopic treatment of angiofibroma

b) Treatment of skull base osteomyelitis

c) Sturge Weber syndrome

d) Treatment for laryngeal stenosis

Correct Answer - D

Topical application of Mitomycin C after endoscopic dilatation of laryngotracheal stenosis prevents restenosis.

Mitomycin-C (MMC) inhibits fibroblast proliferation and synthesis of extracellular matrix proteins, and thereby modulates wound healing and scarring.

- Mitomycin C is an antibiotic isolated from *Streptomyces caespitosus*.
- It is an alkylating agent that undergoes metabolic activation through an enzyme-mediated reduction to generate an alkylating agent that cross-links DNA.
- Hypoxic tumor stem cells of solid tumors are more sensitive to the cytotoxic actions of mitomycin than normal cells and oxygenated tumor cells.
- Its main clinical use is in the treatment of squamous cell cancer of the anus along with fluorouracil and radiation therapy.

Additional uses are in cancers of:

- cervix
- stomach
- pancreas
- lung
- bladder (intravesical treatment)

3. Which statement regarding electrocochleography is TRUE?

a) A method of recording auditory evoked response taken from cochlea and auditory nerve

b) Summation potential (SP) is a component of synchronised auditory nerve potentials

c) Cochlear microphonics is resting receptor potential of outer hair cells

d) Whole nerve AP represent direct current endocochlear AP produced by an acoustic stimulation

Correct Answer - A

Electrocochleography is a near-field technique that monitors the most peripheral components of the auditory system. **It measures electrical potentials arising in the cochlea and auditory nerve** in response to auditory stimuli within first 5 milliseconds.

Auditory stimuli are delivered to the cochlea commonly in the form of a wideband click, composed of many frequencies that stimulate the entire cochlea. **Cochlear potentials that can be recorded from humans include the cochlear microphonic potentials, the summing potential(SP) and the compound action potential(AP)** of the auditory nerve. The SP and AP are the most important components of electrocochleography.

EcoG is useful:

To find threshold of hearing in young infants and children to within 5-10 dB
To differentiate lesions of cochlea from those of the VIIIth nerve.

Normally the ratio between the amplitude of summing potential to the action potential is less than 30%. An increase in this ratio is indicative of Meniere's disease.

4. A fifty-year-old man presents to his practitioner complaining that he often feels as if the room is spinning when he gets up from a recumbent position or turns his head. He has not lost consciousness and has had no chest pain. He has no cardiac history and a recent treadmill test showed no abnormalities. On examination, the sensation can be produced by rapidly turning the head. It can be reproduced many times, but it eventually ceases. Nystagmus is elicited. Hearing is normal. Which of the following is the most likely diagnosis?

a) Benign paroxysmal positional vertigo

b) Brain stem tumor

c) Meniere's disease

d) Syncope

Correct Answer - A

Benign paroxysmal positional vertigo (BPPV) is vertigo that is precipitated by head position. It can be precipitated by trauma, but often no precipitating factor is identified. It generally abates after weeks to months. On exam, patients display nystagmus and the symptoms can be reproduced by head movement. In addition, the symptoms show latency, fatigability and habituation.

Brain stem tumor and vertebrobasilar TIA are causes of central causes of vertigo, but would often be associated with other neurologic findings.

Meniere disease displays the classic triad of unilateral tinnitus, unilateral deafness, and paroxysmal vertigo. Since the patient has normal hearing, this is unlikely to be Meniere syndrome, although hearing loss may not manifest until later stages of the disease.

Syncope is defined as transient loss of consciousness of cardiovascular origin. Thus since the patient has a lack of other cardiovascular symptoms and has not lost consciousness, this is not syncope.

5. Through which of the following route can infection of CNS spread?

a) Cochlear aqueduct

b) Endolymphatic sac

c) Vestibular aqueduct

d) Hyrtle fissure

Correct Answer - A

There are four routes for the spread of CNS infection into the inner ear:

- *Hematogenous* route (through blood supply to the labrynth)
- Through *direct extension* along the meninges and auditory nerve
- Through *fluid pathways* from the CNS either, from CSF to perilymphatic compartment along the cochlear duct or alternatively into the endolymphatic compartment through the endolymphatic duct
- Through the *oval or round window* afte establishing a middle ear infection.

6. MicroWick and Microcatheter sustained release devices are used in:

a) Drooling of saliva

b) Delivering drugs to Paranasal sinuses

c) Control of epistaxis

d) Delivering drug to the round window membrane

Correct Answer - D

MicroWick and Microcatheter are devices which allow to manipulate inner ear kinetic curves reliably by changing the rate and amount of dose delivered to the round window membrane.

7. A patient is suspected to have vestibular schwannoma the investigation of choice for its diagnosis is:

a) Contrast enhanced CT scan

b) Gadolinium enhanced MRI

c) SPECT

d) PET scan

Correct Answer - B

Ans. B (Gadolinium enhanced MRI)

1. Vestibular schwannoma (VS) - arise from inferior vestibular division of eight nerve as from the auditory division
 - a. MRI with gadolinium is the current standard for screening for suspected vestibular schwannomas because of the high false negative rate associated with BSERA Treatment
2. Under 65 years - small intracranial tumors (within the internal auditory canal) may be surgically removed through the transmastoid labyrinthine route
 - a. Large tumors (> 3 cm) are associated with increased incidence of hearing loss, dysequilibrium, headache facial numbness, and diplopia are removed via a suboccipital craniotomy
 - b. Huge ones can only be removed via combined suboccipital and translabyrinthine approach
3. Over age 65 with slowly growing tumors, observation is the proffered treatment.

8. First paranasal sinus to develop at birth is:

a) Maxillary

b) Ethmoidal

c) Frontal

d) Sphenoidal

Correct Answer - A

Development of Sinuses

Sinus	Gestational Month When Development Starts	Present in Clinically Significant Size	Fully Developed
Maxillary	2°	Birth°	12 years°
Ethmoid	30	Birth°	12 years°
Frontal	4°	3 years°	18-20 years°
Sphenoid	3°	8 years°	12-15 years°

9. Angio fibroma is classified as what stage if it extends to one or more paranasal sinuses

a) Stage I

b) Stage II

c) Stage III

d) Stage IV

Correct Answer - A

Staging of angiofibroma

Radkowski Classifications:

Limited to nose and/or

- I** **A** Nasopharyngeal vault
- B** Extension into 1 paranasal sinus
- II** **A** Minimal extension through sphenopalatine foramen into sphenopalatine/pterygomaxillary fossa
- B** Fills sphenopalatine fossa bowing the posterior wall of the maxillary antrum anteriorly or extending into the orbit via the inferior orbital fissure.
- C** Extends beyond sphenopalatine fossa into infratemporal fossa
- III** Erosion of skull base-minimal
- A** Intracranial extension
- B** Erosion of skull base-Extensive

intracranial extension with or
without cavernous sinus invasion.

10. An elderly male presents with T3NO laryngeal carcinoma. What would be the management?

a) Neoadjuvant chemotherapy followed by radiotherapy

b) Concurrent chemoradiotherapy

c) Radical radiotherapy followed by chemotherapy

d) Radical radiotherapy without chemotherapy

Correct Answer - B

11. The wave ' V ' in BERA represents activity in which of the following ?

a) Lateral lemniscus

b) Superior olivary complex

c) Cochlear nerve

d) Cochlear nucleus

Correct Answer - A

The wave 'V' in BERA represents activity in lateral lemniscus.

Auditory brainstem response (ABR):

- Is used to elicit brainstem responses to auditory stimulation by clicks or tone bursts.
- It is a non-invasive technique to find the integrity of central auditory pathways through the **VIIIth** nerve, pons and midbrain.
- The first, third and fifth waves are most stable and are used in measurements.
- Wave V Generation of wave V reflects the activity of multiple anatomic auditory structures.
- The sharp positive peak of wave V arises mainly from the lateral lemniscus, following slow negative wave represents the dendritic potential in the inferior colliculus.

12. Which of the following is not resected in stapedotomy?

a) Anterior crus of stapes

b) Posterior crus of stapes

c) Stapedial ligament

d) Lenticular process of incus

Correct Answer - D

Lenticular process of incus is not resected in stapedotomy.

Type Site of origin

Wave I- Distal part of CN VIII

Wave II- Proximal part of CN VIII near the brainstem

Wave III- Cochlear nucleus

Wave IV- Superior olivary complex

Wave V Lateral lemniscus

Wave VI and VII Inferior colliculus

13. A 35 years old pregnant female complaining of hearing loss, which aggravated during pregnancy, was sent for tympanometry. Which of the following graph will be seen?

a) As

b) Ad

c) B

d) C

Correct Answer - A

A 35 years old pregnant female complained of hearing loss, which was aggravated during pregnancy. This patient is most probably suffering from otosclerosis, which is more common in females and aggravated during pregnancy. Type As tympanogram is seen in otosclerosis

14. What is placed during surgery for cochlear implant?

a) Microphone

b) Speech processor

c) Transmitting coil

d) Receiver stimulator

Correct Answer - D

Microphone, Speech-processor and Transmitter are the part of external component of cochlear implant, which remain outside the body. Receiver/Stimulator (Implanted under the skin) and Electrode array (implanted in the scala tympani of the cochlea) are the part of internal component of cochlear implant, which are fitted inside the body.

15. Patient following peanut consumption presented with laryngeal edema, stridor, hoarseness of voice and swelling of tongue. Most likely diagnosis is

a) Angioneurotic edema

b) Pharyngeal abscess

c) Foreign body larynx

d) Foreign body bronchus

Correct Answer - A

Allergic angioedema: Most common type and usually affects those with some kind of **food allergy**.

It can also be caused by insect bites, contact with latex, and some medications, such as penicillin or aspirin.

In severe cases the throat can swell, making it hard for the patient to breathe.

16. A 36 years old obese man was suffering from hypertension and snoring. Patient was a known smoker. In Sleep test, there were 5 apnea/hyperapneas episodes per hour. He was given antihypertensives and advised to quit smoking. Next line of management:

a) Uvulopalatopharyngeoplasty

b) Weight reduction and diet plan

c) Nasal CPAP

d) Mandibular repositioning sling

Correct Answer - B

The primary treatments of obstructive sleep apnea are: weight loss in those who are overweight, continuous positive airway pressure, and mandibular advancement devices. There is little evidence to support the use of medications or surgery.

Continuous positive airway pressure (CPAP) is effective for both moderate and severe disease. It is the most common treatment for obstructive sleep apnea.

Adherence to CPAP is generally better than that to an MRS, and there is evidence that CPAP improves driving, whereas there are no such data on MRSs. Thus, CPAP is the current treatment of choice (for both moderate and severe disease). However, MRSs are evidence-based second-line therapy in those who fail CPAP.-

Harrison 18/p2189

There is no proven evidence that pharyngeal surgery, including

uvulopalatopharyngoplasty (whether by scalpel, laser or thermal techniques) helps OSAHS patients.

17. Laser uvulopharyngopalatoplasty is the surgery done for which of the following

a) Snoring

b) Recurrent pharyngotonsillitis

c) Cleft palate

d) Stammering

Correct Answer - A

Ans. a. Snoring

ulopalatopharyngoplasty (also known by the abbreviations **UPPP** and **UP3**) is a surgical procedure or sleep surgery used to remove tissue and/or remodel tissue in the throat. This could be because of sleep issues. Tissues which may typically be removed include:

- The tonsils
- The adenoids

Tissues which may typically be remodeled include:

- The uvula (see uvulotomy)
- The soft palate
- The pharynx

18. Absolute indication for Cochlear implantation is:

a) Outer hair cell

b) Inner hair cell

c) Spiral ganglion cell

d) Auditory nerve

Correct Answer - D

Ans. d. Auditory nerve

- Cochlear Implants are used in cochlear type of sensorineural hearing loss where nerve fibers remain intact and functional
- **Cochlea and auditory nerve should be present° in the patients of sensorineural hearing loss planned for cochlear Implants**
- **Cochlear Implants**
- Electronic devices which convert sound signal to electrical impulses which directly stimulate the fibers of CN VIII
- Cochlear implants replace the nonfunctional transducer system of hair cells of cochlea.
- Used in cochlear type of sensorineural hearing loss where nerve fibers remain intact and functional
- Electrode array consists of multiple electrodes and is implanted in the scala tympani of the cochlea. It stimulates the fibers of CN VIII.
- **Cochlear Implants Selection criteria for Adults**
- Age: 18 years or more
- Bilateral severe to profound hearing loss
- Limited or no benefit from hearing aids
- No medical contraindication° to undergo surgery
- Cochlea and auditory nerve should be present
- Realistic expectation

- Good family and social support
- Adequate cognitive function to be able to use the device
- Post-lingually deafened adults are good candidates.
- Results are not so good in pre-lingually deaf adults unless they had been receiving aural-oral training for communication.

Selection criteria for children

- Bilateral profound or severe to profound hearing loss
- Minimal or no benefit from hearing aid
- No medical contraindication
- Cochlea and auditory nerve should be present
- Good family and social support
- Adequate cognitive function to be able to use the device
- Auditory deprivation in the early developmental period causes degenerative changes in central auditory pathway.
- Now implants can be used at an age as early as 12 months
- Implants can be used in both pre-lingually and post-lingually deafened infants and children

Hearing Aids

Contralateral routing of signals (CROS)

- In this type, microphone is fitted on the side of the deaf ear and the sound picked up is passed to the receiver placed in the better ear.
- Useful for the person with one ear severely impaired and helps in sound localization coming from the side of deaf ear

Auditory Brainstem Implant (ABI)

- This implant is designed to stimulate the cochlear nuclear complex in the brainstem directly by placing the implant in the lateral recess of fourth ventricle
- Such implants are needed when CN VIII has been severed in surgery of vestibular schwannoma°. In these cases, cochlear implants are of no use.
- In unilateral acoustic neuroma, ABI is not necessary as hearing is possible from the contralateral side but in bilateral acoustic neuromas as NF₂, rehabilitation is required by ABI

19. Third window effect is seen in

a) Perforated tympanum

b) Dehiscent superior semicircular canal

c) Round window

d) Oval window

Correct Answer - B

Ans. b. Dehiscent superior semicircular canal

- Dehiscence of bone overlying the **superior semicircular canal** can cause a constellation of vestibular and auditory symptoms and signs.
- These abnormalities can be understood in terms of the **effect** of the dehiscence in creating a **third mobile window** into the inner ear.

20. Pseudosulcus in larynx

a) Vocal abuse

b) Tuberculosis

c) Laryngopharyngeal reflux

d) Chronic steroid use

Correct Answer - C

Ans. c. Laryngopharyngeal reflux

- Pseudosulcus vocalic or laryngeal pseudosulcus is a variable finding in patients with laryngopharyngeal reflux. This sulcus is believed to arise from reflux induced swelling in the subglottic area and is located between the true vocal cords and the subglottic swelling.

Laryngeal sulcus

Laryngeal Pseudosulcus (Pseudosulcus Vocalis)

- This sulcus is believed to arise from reflux induced swelling in the subglottic area secondary to laryngotracheal reflux
- Located between the true vocal cords and the subglottic swelling

Laryngeal True sulcus (Sulcus Vergeture)

- True sulcus is related to scarring of the vocal folds in the phonatory striking zone
- Located within the true vocal folds at the site of the adherence of vocal fold epithelium to the vocal ligament

21. High frequency audiometry is used in

a) Otosclerosis

b) Ototoxicity

c) Non-organic hearing loss

d) Meniere's disease

Correct Answer - B

Ans. b. Ototoxicity

As ototoxicity appears to be most pronounced in the higher frequencies, it can be assessed at an earlier stage by using high-frequency audiometry from 8 to 20 kHz.

22. Initial mechanism of action of intra-tympanic gentamicin microwick catheter inserted into inner ear in treatment of Menier's disease

- a) Damage outer hair cell
- b) Binds to hair cell $\text{Na}^{\text{-}}\text{-K}^{\text{+}}$ ATPase channel
- c) Acts on melanoreceptors of outer hair cell
- d) Bind to $\text{Mg}^{\text{++}}$ channel

Correct Answer - C

Ans. c. Acts on melanoreceptors of outer hair cell

- Intra-tympanic Gentamicin is used in Menier's Disease, it is Predominantly vestibulotoxic, and acts by destroying the dark cells (melanoreceptors) of the secretory epithelium, thus decreasing the endolymph production
- Intra-tympanic Gentamicin in Menier's Disease**
- Mechanism of Action:**
- Predominantly vestibulotoxic, and acts by destroying the dark cells (melanoreceptors) of the secretory epithelium,thus decreasing the endolymph production
 - Gentamicin destroys the endolymph secreting dark cells before destroying the sensory vestibular epithelium
 - **This treatment has high efficacy in controlling the vertigo upto 90%.**
 - Regarding Gentamicin mechanism: "The main alternative to the mechanism being destruction of dark cells is the hypothesis that there is a partial damage to the vestibular hair cells. Recent studies in animals suggest that the type-I hair cells are the most sensitive, and the type-II hair cells are more resilient."

- <http://www.dizziness-and-balance.com/treatmentittg.html>

23. A patient of head injury was brought to the hospital. Patient was conscious having clear nasal discharge through right nostril. NCCT head was done which revealed non-operable injury to frontobasal area. What is the most appropriate management?

a) Wait and watch for 4-5 days to allow spontaneous healing

b) Do an MRI to localize the leak and control the discharge endoscopically

c) Put a dural catheter to control CSF leak

d) Approach transcranially to repair the damaged frontobasal region

Correct Answer - A

Ans. a. Wait and watch for 4-5 days to allow spontaneous healing
The most appropriate management of a conscious patient of head injury with clear nasal discharge through right nostril with non-operable injury to frontobasal area on NCCT head is wait and watch for 4-5 days to allow spontaneous healing.

Early cases of post-traumatic CSF rhinorrhea are managed conservatively by placing the patient in the semi-sitting position, avoiding blowing of nose, sneezing and straining. Prophylactic antibiotics are also administered to prevent meningitis. Persistent cases of CSF rhinorrhea are treated surgically by nasal endoscopic or intracranial approach. Nasal endoscopic approach is useful for leaks from the frontal sinus, cribriform plate, ethmoid or sphenoid

sinuses.']

CSF Rhinorrhea

- The underlying defect responsible for CSF leaks, regardless of the etiology: disruption in the arachnoid and dura
- mater coupled with an osseous defect and a CSF pressure gradient that is continuously or intermittently greater than the tensile strength of the disrupted tissue.

Etiology:

- Penetrating and closed-head trauma are responsible for 90% of all cases of CSF leaks^Q

Clinical features:

- CSF rhinorrhea following a traumatic injury is classified as immediate (within 48 hours) or delayed^Q
- The majority of patients with a CSF leak due to accidental trauma (e.g., motor vehicle accident) present
- Most of the patients (95%) with a delayed CSF leak present within 3 months after the injury^Q
- The typical history of a CSF leak is that of clear, watery discharge, usually unilateral^Q
- Diagnosis is made more easily in patients with recent trauma or surgery than in others

Treatment

- Early cases of post-traumatic CSF rhinorrhoea are managed conservatively by placing the patient in the semi-sitting position, avoiding blowing of nose, sneezing and straining.
- Prophylactic antibiotics are also administered to prevent meningitis.
- Persistent cases of CSF rhinorrhoea are treated surgically by nasal endoscopic or intracranial approach.
- Nasal endoscopic approach is useful for leaks from the frontal sinus, cribriform plate, ethmoid or sphenoid sinuses

24. All of the following are true about malignant otitis externa except:

a) ESR is used for follow up after treatment

b) Granulation tissues are seen on superior wall of the external auditory canal

c) Severe hearing loss is the chief presenting complaint

d) Pseudomonas is the most common cause

Correct Answer - C

Ans. c. Severe hearing loss is the chief presenting complaint

Severe hearing loss is not the chief presenting complaint malignant otitis externa.

Malignant Otitis Externa:

Characterized by granulation tissue in external auditory canal at the junction of bone and cartilage.

MC organismz Pseudomonas aeruginosa

ESR is raised, used for follow up of treatment

25. A child has retained disc battery in the nose. What is the most important consideration in the management?

a) Battery substance leaks and cause tissue damage

b) It can lead to tetanus

c) Refer the child to a specialist for removal of battery

d) Instill nasal drops

Correct Answer - A

Ans. a. Battery substance leaks and cause tissue damage

Most important consideration in the management of retained disc battery in the nose of a child is the leakage of battery substance leading to tissue damage.

`If the FB is a small button battery, moisture within the cavity may lead to tissue damage. Irrigation or nasal wash should not be used. If the battery leaks, there may be liquefactive necrosis and organ injury. It should be removed immediately.'-

[http://www.patient.co.uk/doctor/nasal-injury- and-nasal-foreign-bodies](http://www.patient.co.uk/doctor/nasal-injury-and-nasal-foreign-bodies) Professional Reference

`Examine for signs of other FB e.g., nasal, ear, inhaled, etc. Refer to ENT specialist if unsuccessful after two attempts.'

Management of Nasal Foreign Body

- Before you start, make sure you have the correct equipment and that the child is being adequately held, in an accommodating position. Fewer attempts will reduce the anxiety of the parent and child.
- Use topical anaesthetic and vasoconstrictor (reduces swelling) spray in the affected nostril.

- Blow positive pressure through the nose - preferably by the parent blowing sharply through the child's mouth whilst obstructing the unaffected nostril. This has been shown to be relatively non-traumatic, with success rates of 79%
- Use a nasal speculum and a hook or thin forceps, to hold object. Be careful not to push the FB further back
- Application of strong suction is sometimes sufficient to draw the object out.
- Pass a narrow balloon catheter past the FB, inflate and remove the catheter, pulling the FB with it. The Fogarty is preferred (compared to a Foley), as it is stiffer and stronger.
- Examine for signs of other FB e.g. nasal, ear, inhaled, etc. Refer to ENT specialist if unsuccessful after two attempts
- If the FB is a small button battery, moisture within the cavity may lead to tissue damage. Irrigation or nasal wash should not be used. If the battery leaks, there may be liquefactive necrosis and organ injury
- It should be removed immediately.
- After successful removal of a nasal FB, careful examination of the involved nasal cavity as well as the other body
- Particular attention must be paid to the examination of the ear and sinuses on the involved side, as acute otitis media

26. Which of the following is not a complication of adenoidectomy?

a) Hyponasality of speech

b) Retro pharyngeal abscess

c) Velopharyngeal insufficiency

d) Grisel syndrome

Correct Answer - A

Ans. a. Hyponasality of speech

Causes of Hyponasality (Rhinolalia clausa)

- Common cold^Q
- Nasal allergy^Q
- Nasal polyp^Q
- Nasal growth^Q
- Adenoids^Q
- Nasopharyngeal mass^Q
- Familial speech pattern^Q
- Habitua^Q

Causes of Hypernasality (Rhinolalia aperta)

- Velopharyngeal insufficiency^Q
- Congenitally short soft palate^Q
- Submucous palate^Q
- Large nasopharynx^Q
- Cleft of soft palate^Q
- Paralysis of soft palate^Q
- Post-adenoidectomy^Q
- Oronasal fistula^Q

- Familial speech pattern^Q
- Habitual^Q

Complications of Adenoidectomy

Hemorrhage	Grisel syndrome
Injury to eustachian tube opening	Velopharyngeal insufficiency
Injury to pharyngeal musculature and vertebrae	Nasopharyngeal stenosis
	Recurrence

27. Which of the following is true about Meniere's disease?

a) Surgery is the mainstay of treatment

b) Electrocochleography is the gold standard investigation for diagnosis

c) Semont's maneuver is used for treatment

d) In initial stages, inverted 'V' shaped audiogram is seen

Correct Answer - B

Ans. b. Electrocochleography is the gold standard investigation for diagnosis

28. Which of the following is the most common cause of vocal cord palsy?

a) Trauma

b) Malignancy

c) Inflammatory

d) Surgical

Correct Answer - D

Ans. d. Surgical

Surgical trauma is the most common cause of vocal cord palsy. 'Vocal cord paralysis is most commonly iatrogenic in nature following surgery to thyroid, parathyroid, carotid or cardiothoracic structures.'

Vocal Cord Palsy

Vocal cord palsy can be attributed to the following causes:

- Surgical trauma (44%)^Q
- Malignancies (17%)^Q: Bronchial >Esophageal >Nasopharyngeal >thyroid
- Endotracheal intubation (15%)^Q
- Neurologic disease (12%)^Q
- Idiopathic causes (12%)^Q

29. Topical steroids are not recommended post-surgery for:

a) Allergic fungal sinusitis

b) Chronic rhinosinusitis

c) Antrochoanal polyp

d) Ethmoidal polyps

Correct Answer - C

Ans. c. Antrochoanal polyp

For antrochoanal polyps, cause is infection and not the allergy. Antrochoanal polyps are single, unilateral and rarely recur. Topical steroids are rarely recommended.'

`Corticosteroid nasal sprays have been shown to delay the recurrence of polyps after surgery however, the benefit for nonpolypoid chronic rhinosinusitis has been harder to demonstrate

Chronic Rhinosinusitis:

- Corticosteroid nasal sprays have been shown to delay the recurrence of polyps after surgery however, the benefit for nonpolypoid CRS has been harder to demonstrate.

Multiple ethmoidal polyps:

- Antihistaminic, low dose steroids, local steroid sprays, help to regress the ethmoidal polyps to a certain extent.
- However, the above treatment rarely eliminates well-formed polyps and is often combined with surgery.

Post antrochoanal surgery:

- Most patients with antrochoanal polyps have a history of chronic sinusitis and/or allergy (rarely).
- The dominating symptoms are nasal obstruction and chronic rhinorrhea. Other common symptoms of ACPs in children are

snoring, nocturnal sleep apnea and recurrent upper respiratory tract infections.

- Computed tomography is an important radiological examination of choice for evaluation of antrochoanal polyps.
- The treatment of choice is always surgical.
- Functional endoscopic sinus surgery (FESS) with polypectomy has been the dominating surgical approach.
- Antrochoanal polyps are single, unilateral and rarely recur. Topical steroids are rarely recommended.

Allergic Fungal Sinusitis:

- The treatment of choice is generally surgery.
- Systemic steroids may be indicated once surgery is performed and the diagnosis is confirmed.
- Topical nasal steroids are helpful postoperatively.
- Aggressive nasal salt-water washes are recommended.
- Systemic antifungals are not indicated in the absence of invasion.

30. An elderly male presents with T3N0 laryngeal carcinoma. What would be the management?

a) Neoadjuvant chemotherapy followed by radiotherapy

b) Concurrent chemoradiotherapy

c) Radical radiotherapy followed by chemotherapy

d) Radical radiotherapy without chemotherapy

Correct Answer - B

Ans. b. Concurrent chemoradiotherapy

An elderly male presents with T3N0 laryngeal carcinoma. Treatment is concurrent chemoradiotherapy.

'Advanced laryngeal cancers are often treated by combining radiation with concurrent chemotherapy for larynx preservation and total laryngectomy for bulky T4 disease or salvage.'

'Concurrent radiation therapy plus Cisplatin resulted in a statistically higher percentage of patients with an intact larynx at 10 years.'

31. All of the following are true about obstructive sleep apnea syndrome except:

a) Females affected more than males

b) Commonly associated with hypertension

c) Day time sleepiness is seen

d) >5 episodes of apnea per hour

Correct Answer - A

Ans. a. Females affected more than males

Males are affected more commonly than females in obstructive sleep apnea syndrome.

'OSAHS occurs in around 1-4% of middle-aged males and is about half as common in women

32. Which of the following does not show negative Rinne test in the right ear?

- a) Sensorineural hearing loss of 45 dB in left ear and normal right ear
- b) Profound hearing loss
- c) Conductive hearing loss of 40 dB in both ears
- d) Conductive hearing loss of 40 dB in right ear and left ear normal

Correct Answer - A

Ans. a. Sensorineural hearing loss of 45 dB in left ear and normal right ear

Sensorineural hearing loss of 45 dB in left ear and normal right ear - will show a positive Rinne's test in both the ears.

Conductive hearing loss of 40 dB in both ears will show negative Rinne's test in both the ears.

Conductive hearing loss of 40 dB in right ear and left ear normal will show a positive Rinne's test in left ear and negative in right ear.

Profound hearing loss may show a false negative Rinne's test in the right ear

33. A 75-year old diabetic patient presents with severe ear pain and granulation tissue at external auditory canal with facial nerve involvement. -The most likely diagnosis is:

a) Malignant otitis externa

b) Nasopharyngeal carcinoma

c) Acute suppurative otitis media

d) Chronic suppurative otitis media

Correct Answer - A

Ans. a. Malignant otitis externa

Presence of a painful lesion in the external ear with the evidence of granulation tissue and associated cranial nerve palsies (VII nerve) in a diabetic (or immunocompromised) patient suggest a diagnosis of malignant otitis externa

34. A 14-year old boy presents with hist°. of frequent nasal bleeding. His Hb was found to be 6.4 g/dL and peripheral smear showed normocytic hypochromic anemia. The most probable diagnosis is:

a) Juvenile nasopharyngeal angiofibroma

b) Hemangioma

c) Antrochonal polyp

d) Carcinoma of nasopharynx

Correct Answer - A

Ans. a. Juvenile nasopharyngeal angiofibroma

A 14-year-old boy presents with history of frequent nasal bleeding. His Hb was found to be 6.4 g/dL and peripheral smear showed normocytic hypochromic anemia. The most probable diagnosis is juvenile nasopharyngeal angiofibroma

35. Olymptian brown and rhagades are seen in-

a) CMV inclusion disease

b) Ectodermal dysplasia

c) Congenital syphilis

d) Hyper IgE syndrome

Correct Answer - C

Ans. c. Congenital syphilis

Clinical Presentation of Syphilis

Early Congenital Syphilis:

- Snuffles (rhinitis)^Q is earliest feature.
- Lesions are vesicobullous^Q, and snail track ulcers on mucosa

Clinical Presentation of Syphilis

Late Congenital Syphilis:

- Characterized by Hutchinson's triad (interstitial keratitis + 8th nerve deafness + Hutchinson's teeth i.e. pegged central upper incisors)^Q
- Saddle nose, sabre tibia, mulberry molars^Q
- Bull dog's jaw (protrusion of jaw)
- Rhagades^o (linear fissure at mouth, nares)
- Frontal bossing, hot cross bun deformity of skull
- Clutton's joint^o (painless swelling of joints, most commonly both knee)
- Palatal perforation^o
- Higaumenakis sign (periostitis leads to unilateral enlargement of sterna end of clavicle)

Primary Syphilis:

- Painless, indurated, nonbleeding, usually single punched out ulcer

(hard chancre)^Q

- Painless, rubbery shotty lymphadenopathy

Secondary Syphilis:

- Bilateral symmetrical asymptomatic localized or diffuse mucocutaneous lesion^o (macule, papule, paucosquamous and rarely pustule)
- Non-tender generalized lymphadenopathy^Q
- Highly infectious condylomata late, in warm moist intertriginous areas
- Moth eaten alopecia, arthritis, proteinuria^Q

Tertiary Syphilis:

- Gumma, neurosyphilis/tabs dorsalis^Q
- Ostitis, periostitis
- Aortitis, aortic insufficiency, coronary stenosis and nocturnal angina^Q

36. A 60-year old male presents with painful, grouped vesicles over erythematous plaques in T3 dermatome region of trunk. Which of the following would be the most likely causative organism?

a) Varicella zoster

b) Herpes simplex

c) Pox virus

d) Papilloma virus

Correct Answer - A

Ans. a. Varicella zoster

A 60-year-old male presents with painful, grouped vesicles over erythematous plaques in T dermatome region of trunk. Varicella zoster is the most likely causative organism.

37. A 19-year old male presents with several comedones, papules and pustules on face and trunk. The appropriate drug, choice for the patient would be

a) Topical retinoic acid

b) Topical retinoic acid + Oral doxycycline

c) Topical clindamycin

d) Topical azithromycin

Correct Answer - B

Ans. b. Topical retinoic acid + Oral doxycycline

A 19-year-old male presents with several comedones, papules and pustules on face and trunk. This is a case of inflammatory acne with comedones and appropriate drug of choice for this patient is topical retinoic acid with oral doxycycline.

38. A 37-year female presents with multiple, linear, itchy wheals, with itching for 30 minutes at the site. The most probable diagnosis is:

a) Dermatographic urticaria

b) Pressure urticaria

c) Acute urticaria

d) Chronic urticaria

Correct Answer - A

Ans. a. Dermatographic urticaria

The term dermographism (or dermatographism) literally means writing on the skin.

Firm stroking of the skin produces an initial red line (capillary dilatation), followed by an axon-reflex flare with broadening erythema (arteriolar dilatation) and the formation of a linear wheal (transudation of fluid/edema); these events are collectively termed the triple response of Lewis. An exaggerated response to this constitutional whealing tendency is seen in approximately 2-5% of the population and is referred to as dermographism⁹

39. A young 8-year old boy presents with multiple discrete, shiny, pin-head papules on dorsal aspect of hand, forearms and shaft of penis. The diagnosis is:

a) Molluscum contagiosum

b) Scabies

c) Lichen planus

d) Lichen nitidus

Correct Answer - D
Ans. d. Lichen nitidus

40. 30-year old male presents with flaccid bullae on an erythematous base and erosions over the oral mucous membrane. The blisters developed painful erosions rupture. What would be the most likely finding on an immunofluorescent examination of the sl biopsy of this patient?

a) Linear IgA deposition in dermoepidermal junction

b) Linear IgG deposition in dermoepidermal junction

c) Fish net IgG deposition in epidermis

d) Granular deposits of IgA in dermal papillae

Correct Answer - C

Ans. c. Fish net IgG deposition in epidermis

41. A patient presented with flat topped violaceous papules, thinning of nails and onycholysis. What is the microscopic finding observed in this patient?

a) Prominent necrotic cell

b) Suprabasal split

c) Basal cell degeneration

d) Acantholysis

Correct Answer - C
Ans. c. Basal degeneration

42. At supra MAC concentrations, anesthetics lead to shift of EEC wave from-

a) α to β waves

b) β to δ waves

c) δ to θ waves

d) θ to α waves

Correct Answer - D

Ans. d. θ to α waves

In the anaesthetized subject, depression of thalamic gates together with diminished activation of the cortex by the ascending reticular activating system (ARAS) will be indicated by a progressive slowing of the EEG, in which the underlying electrical signal will change from low-voltage fast-wave to high-voltage slow-wave pattern. When quantitative EEG (QEEG) variables are applied, anaesthetic-related EEG slowing is associated with an increase in total power, an increase in relative power in the δ and frequency bands concomitant with a decrease in α and β power. and a decrease in both median frequency (ME) and spectral edge frequency (SEF). Changes from deeper to lighter levels of anaesthetic depth will be indicated by a shift in EEG power from the lower (δ , θ) to the higher (α , β) frequency range and by a numerical increase in MF and SEF"- Otto. K. EEG power spectrum

Effects of Anesthetics on EEG

- In the anaesthetized subject, depression of thalamic gates together with diminished activation of the cortex by the ascending reticular activating system (ARAS) will be indicated by a progressive slowing of the EEG, in which the underlying electrical signal will change from low-voltage fast-wave to high-voltage slow-wave pattern.

- When quantitative EEG (QEEG) variables are applied, anaesthetic-related EEG slowing is associated with an increase in total power, an increase in relative power in the δ and θ frequency bands concomitant with a decrease in α and β power, and a decrease in both median frequency (MF) and spectral edge frequency (SEF).
- Changes from deeper to lighter levels of anaesthetic depth will be indicated by a shift in EEG power from the lower (δ , θ) to the higher (α , β) frequency range and by a numerical increase in MF and SEF

43. A 68-year-old diabetic male presents with persistent ear discharge with fever and headache. He complained of pain out of proportion. On examination, granulations and tenderness are observed on the floor of the external auditory canal along with facial nerve palsy. He is not responding to antibiotics. What is the most probable diagnosis?

a) Malignant otitis externa

b) Malignant disease of middle ear

c) Malignant disease of nasopharynx

d) Chronic otitis externa

Correct Answer - A

Ans. a. Malignant otitis externa

Presence of a painful lesion in the external ear with the evidence of granulation tissue and associated cranial nerve palsies (VII nerve) in a diabetic (or immunocompromised) patient suggest a diagnosis of malignant otitis externa.

44. A 58-year-old male presents with persistent fullness of left ear for 3 months and hearing loss. On examination, there is fluid behind the tympanic membrane. Impedance audiometry shows a type B audiogram. The next step for the management of the patient would be:

a) Myringotomy with grommet insertion

b) Endoscopic examination for any nasopharyngeal pathology

c) Valsalva manoeuvre

d) Antihistaminics

Correct Answer - B

Ans. b. Endoscopic examination for any nasopharyngeal pathology

45. Bone anchored hearing aid (BAHA) can be used in which of the following:

a) A 40 years old male with bilateral profound hearing loss

b) A 6 years old male with bilateral hearing loss

c) A 7 years old male with bilateral microtia, canal atresia and congenital hearing loss

d) A 50 years old male with bilateral acoustic neuroma, planned for surgery

Correct Answer - C

Ans. c. A 7 years old male with bilateral microtia, canal atresia and congenital hearing loss

46. Who among the following has contributed to the development of neuro-otology and is considered as the father of 'nen ro-otology'?

a) Julius Lampart

b) John J. Shea Jr

c) William F. House

d) Hales Martin

Correct Answer - C

Ans. c. William F. House (Ref www.audiology.org)

For the pioneering work in the field of neuro-otology, William F. House considered as 'Father of Neuro-otology'.

William F. House considered as 'Father of Neuro-otology' because of his pioneering development approaches for the removal of acoustic tumors and the management of patients with disabling vertigo.

47. A 40-year-old male presents with left ear discharge and mild ear pain for the past 7 years. There is no history of deafness. On examination, the tympanic membrane is intact and discharge is seen coming from the posterior superior wall. The left ear canal and tympanic membrane is normal. Which of the following is the most likely diagnosis?

a) Chronic suppurative otitis media

b) Chronic otitis externa

c) Keratosis obturans

d) Carcinoma of the external auditory canal

Correct Answer - B

Ans. b. Chronic otitis externa

Chronic Otitis Externa

- Chronic otitis externa is a chronic infection/inflammation involving the skin lining of the external canal.
- There is thickening of skin lining of the external canal due to persistent low grade infection/inflammation

Etiology:

- Caused primarily by repeated local irritation, most commonly arising from persistent drainage from a chronic middle ear infection.
- Other causes of repeated irritation, such as insertion of cotton swabs or other foreign objects into the ear canal, can lead to this condition,

as can rare chronic infections such as syphilis, tuberculosis, and leprosy

Clinical Features:

- Unrelenting pruritus, mild pain
- Presence of dry skin in the external canal
- Asteatosis (lack of cerumen), hypertrophic external canal skin, presence of dry flaky skin in the external canal
- Mild tenderness on ear manipulation
- Rarely mucopurulent otorrhea

Chronic Otitis Externa

Management:

- Treatment: Extensive use of acetic acid ear drops helps to reduce the pH of skin lining the external canal making it more resistant to bacterial infections.
- Surgery is indicated in extreme cases. A canaloplasty is performed to widen the external canal. The involved skin may be removed to be replaced by a split thickness graft.

Carcinoma External Auditory Canal

- Most commonly squamous cell carcinoma
- Most commonly seen in cases of long standing ear discharge
- May arise primarily from the meatus or a secondary extension from the middle ear carcinoma

Clinical Features:

- Blood staining of hitherto mucopurulent or purulent discharge and severe headache
- Examination:
- Ulcerated area in the meatus or a bleeding polypoidal mass or granulations
- Facial nerve may be paralysed because of local extension of disease through posterior meatal wall or its spread into middle ear
- Regional lymph nodes (preauricular, postauricular, infra-auricular and upper deep cervical)

Treatment:

- En-bloc wide surgical excision with post-operative radiation.

Keratosis Obturans

- Collection of pearly white mass of desquamated epithelial cells in the deep meatus is called keratosis obturans.

- By its pressure effects causes absorption of bone leading to widening of meatus so much so that facial nerve may be exposed and paralysed.
- Commonly seen between 5-20 years of age
- May affect one or both ears

Etiology:

- Sometimes associated with bronchiectasis and chronic sinusitis
- Normally epithelium from surface of tympanic membrane migrates onto the posterior meatal wall. Failure of this migration or obstruction to the migration caused by wax may lead to accumulation of epithelial plug in the deep meatus.

Clinical Features:

- Pain in the ear, hearing loss, tinnitus, sometimes ear discharge

Examination:

- Ear canal may be full of pearly white mass of keratin material disposed in several layers.
- Removal of this mass may show widening of bony meatus with ulceration and granuloma formation

Treatment:

- Keratotic mass is removed either by syringing or instrumentation.

48. All of the following are true regarding Bells palsy is all except:

a) Herpes simplex virus is commonly implicated

b) Steroids are the treatment of choice

c) Unilateral facial weakness

d) Immediate nerve decompression is required

Correct Answer - D

Ans. d. Immediate nerve decompression is required

49. A girl for chronic ear discharge, pain on ocular movements and vertigo underwent mastoidectomy. There was no relief post-operatively and continuous purulent ear discharge was seen. Patient also had sensorineural hearing loss. The most probable diagnosis would be:

a) Suppurative labyrinthitis

b) Apical petrositis

c) Serous labyrinthitis

d) Lateral sinus thrombophlebitis

Correct Answer - B

Ans. b. Apical petrositis

50. Submandibular nodes are classified as ?

a) Level IA neck nodes

b) Level IB neck nodes

c) Level II neck nodes

d) Level III neck nodes

Correct Answer - B

Ans. is 'b' i.e., Level 1B neck nodes

- Division of neck nodes according to levels

Level I Submental (IA) **Submandibular (IB)**

Level II Upper jugular

Level III Mid jugular

Level IV Lower jugular

Level V Posterior triangle group (Spinal accessory and transverse cervical chains)

Level VI Prelaryngeal Pretracheal Paratracheal

Level VII Nodes of upper mediastinum

51. The main vessel involved in bleeding from Juvenile nasopharyngeal angiofibroma:

a) Facial artery

b) Ascending pharyngeal artery

c) Internal maxillary artery

d) Anterior ethmoidal artery

Correct Answer - C

Ans: C. Internal maxillary artery

(Ref Dhingra 7/e p281-282, 5/261-263)

Juvenile Nasopharyngeal Angiofibroma:

- MC benign tumor of nasopharynx (but overall angiofibroma rare).
- **MC site:**
- Posterior part of nasal cavity close to the margin of sphenopalatine foramen.
- Seen exclusively in males of 10-20 years.
- Testosterone dependent tumor - Seen in pre-pubertal to adolescent males.
- **Features:**
- Locally invasive vasoformative tumor consisting of endothelium lined vessels with no muscle coat.
- Main feeding vessel in most cases = Internal maxillary artery.
- Internal maxillary artery - External carotid artery branch.

52. Topical treatment for recurrent respiratory papillomatosis includes:

a) Acyclovir

b) Cidofovir

c) Ranitidine

d) Zinc

Correct Answer - B

Ans: B. Cidofovir

(Ref Dhingra 74, p346, 6/c, p305).

Cidofovir:

- Topical treatment for recurrent respiratory papillomatosis (Incomplete in stopping tumor growth).
- Mostly injected to control frequency of tumor growth.

53. Eustachian tube function is best assessed by:

a) Tympanometry

b) VEMP

c) Rhinomanometry

d) Politzer test

Correct Answer - A

Ans: A. Tympanometry

(Ref Dhingra 7/e p62-63, 6/e p59)

Assessment of eustachian tube function:

- Tympanometry & Politzer test.
- Tympanometry better than Politzer test.

Tympanometry:

- Positive & negative pressures created in external ear canal.
- Patient swallows repeatedly.
- Normal tubal function:
 - Ability of tube to equilibrate positive & negative pressures to ambient pressure.
- Done both in patients with perforated or intact tympanic membrane.

54. Kashima operation is done for:

a) Recurrent cholesteatoma

b) Bilateral vocal cord palsy

c) Atrophic rhinitis

d) Choanal atresia

Correct Answer - B

Ans: B. Bilateral vocal cord palsy

(Ref Dhingra 7/e p339, 6/e p300).

Transverse cordotomy or Kashima operation:

Done for bilateral vocal cord palsy.

Less Invasive Techniques for Bilateral RLN Paralysis

1. Transverse cordotomy(Kashima operation)

- **Soft tissue at the junction of membranous cord and vocal process of arytenoid is excised laterally with laser**
- This provides good airway. In case airway is still insufficient more tissue can be removed at subsequent operation.

2. Partial arytenoidectomy

- **Medial part of arytenoid is excised with laser**
- Sometimes only the vocal process of arytenoids is ablated.

3.

Reinnervation procedures muscle with its nerve supply from ansa hypoglossi.

4. Thyroplasty type II

- These procedures have not been very successful.
- It creates **lateral expansion of larynx** and is similar to vocal cord lateralization. Quality of voice may not be good.

55. Which is the most common type of congenital ossicular dysfunction?

a) Isolated stapes defect

b) Stapes defect with fixation of footplate and lenticular process involvement.

c) Defective lenticular process of incus

d) None of the above.

Correct Answer - B

Ans: B. Stapes defect with fixation of footplate and lenticular process involvement.

(Ref Nelson 20/e p3071)

- Most common type of congenital ossicular dysfunction is stapes defect with fixation of footplate and lenticular process involvement.

56. Auditory neurotherapy is an effective modality of treatment for which of the following abnormalities of hearing?

a) CSOM

b) Meniere's disease

c) Malignant otitis externa

d) Otosclerosis

Correct Answer - B

Ans: B. Meniere's disease

(Ref: Dhingra 7/e p115, 6/100-104, 5/e pg 112-113; Logan-Turner 10th/335, Scott-Brown 7/e p3570)

- Among the given options, only Meniere's disease involves the vestibular system of inner ear.
- Hence, a neurotherapy (direct nerve stimulation) is going to be useful only in Meniere's disease.

57. Which of the following tests is recommended for neonatal screening of hearing?

a) Automated auditory brainstem response

b) Spontaneous OAE

c) Evoked OAE

d) Distorted product OAE

Correct Answer - C

Ans: C. Evoked OAE

(Ref: Diungra 7/e p29-30. 5/e p116)

- Evoked otoacoustic emission (OAE) is recommended for neonatal screening of hearing.

Types of Otoacoustic Emissions (OAE)

Spontaneous OAE (SOAEs)	Sounds emitted without an acoustic stimulus (i.e, spontaneously).	SOAE are seen in 25-80% of neonates with normal hearing & absence of SOAEs is not necessarily abnormal
Transient evoked OAE (TEOAEs)	Sounds emitted in response to an acoustic stimuli of very short duration; usually clicks but can be tone-bursts	TOAEs commonly are used to screen infant hearing, to validate behavioural or electrophysiologic auditory thresholds & to assess cochlear function
Distortion	Sounds emitted in response to	Particularly useful for early detection of

product OAE
(DPOAEs)

2 simultaneous
tones of
different frequencies

cochlear damage as they
are for ototoxicity &
noise-induced damage

Sustained- frequency
OAE (SFOASEs)

Sounds emitted in
response to
a continuous tone

SPOAEs are responses
recorded to a continuous
tone.

58. A patient presents to your clinic for evaluation of defective hearing. Rinne's test shows air conduction greater than the bone conduction on both sides with Weber test lateralized to right ear. What is the next logical step?

a) Normal test

b) Schwabach's test

c) Repeat Rinne's test on right side

d) Wax removal

Correct Answer - B

Ans: B. Schwabach's test

(Ref Dhingra 7/e p23, 5/e p25-27)

- Lateralization of Weber's test to right implies either right-sided conductive deafness or left sided sensorineural deafness.
- Now in conductive deafness bone conduction is better than air conduction in Rinnie's test, hence the patient probably has sensorineural deafness involving the left ear, as per the findings of Rinnie's and Weber tests.
- In such a case, Schwabach's test should be performed to see the absolute bone.

59. All of the following are true regarding tonsillectomy in children except:

- a) Extracapsular approach is best for cold approach
- b) Sleep apnea is an indication
- c) Adenoids should also be removed if significantly involved
- d) Cricothyroid region is high and anterior in children than adults

Correct Answer - A

Answer- A. Extracapsular approach is best for cold approach

Intracapsular approach is preferred over extracapsular approach in tonsillectomy for cold approach.

'Intracapsular tonsillectomy with bipolar scissors results in less postoperative pain than extracapsular tonsillectomy with bipolar scissors in children age 5 to 19 years.

Obstructive sleep apnea is the most common indication for T and A.'
The most common indication for Tonsillectomy and Adenoidectomy (T and A) was for infectious etiology.

60. Target sign is seen in:

a) Spontaneous CSF rhinorrhea

b) Traumatic CSF rhinorrhea

c) Traumatic epistaxis

d) Petrositis

Correct Answer - B

Ans. b. Traumatic CSF rhinorrhea

Target sign is seen in traumatic CSF rhinorrhea.

"CSF rhinorrhoea: There is history of clear watery discharge from the nose on bending the head or straining. It may be seen on rising in the morning when patient bends his head (reservoir sign fluid which had collected in the sinuses, particularly sphenoid, empties into the nose)."

"CSF rhinorrhoea after head trauma is mixed with blood and shows double target sign when collected on a piece of filter paper. It shows central red spot (blood) and peripheral lighter halo.

61. Noise induced hearing loss mostly affects:

a) Inner hair cell

b) Outer hair cell

c) Macula

d) Cupula

Correct Answer - B

Ans. b. Outer hair cell

Noise induced hearing loss mostly affects outer hair cell.

- "Noise induced hearing loss (NIHL) causes damage to hair cells, starting in the basal turn of cochlea. Outer hair cells are affected before the inner hair cells."
- "Noise-induced hearing loss damages hair cells, which begin at the basal turn of cochlea. Outer hair cells are affected earlier than the inner hair cells."

62. According to the WHO definition of hearing loss, what is the value to classify as profound hearing loss?

a) 61-71 dB

b) >81 dB

c) >91 dB

d) >101 dB

Correct Answer - B

Ans: B. >81 dB

(Ref:

http://www.wlio.intipbaideulne.ssilieuring_impairment_gracies/en/)

- According to the WHO (2008) definition of hearing loss, hearing threshold in better ear >81 dB is classified as profound hearing loss.

WHO (2008) Classification of Degree of Hearing Loss

Hearing threshold in better ear (average of 500, 1000, 2000 Hz)	Grade of Impairment
0-25	No impairment
26-40	Mild° impairment
41-60	Moderate° impairment
61-80	Severe° impairment
>81	Profound impairment including

63. All the following instruments are required for tonsillectomy except:

a) Coblation wand

b) Bipolar cautery

c) Microdebrider

d) Harmonic scalpel

Correct Answer - C

Ans: C. Microdebrider

(Ref: Scott-Brown's 7/e p3576; Cummings Pediatric Otolaryngology By Marci M. Lesperance, Paul W. Flint/p51; Dhingra 6/e p430)

- All these four instruments are used in different techniques of tonsillectomy.
- Microdebrider is less commonly used than others as it leaves behind a small amount of tissue covering the
- constrictor muscle.
- Hence, preferred answer would be microdebrider.

64. Which of the following vessel is not ligated in case of epistaxis control?

a) Maxillary artery

b) Anterior ethmoidal artery

c) Internal carotid artery

d) External carotid artery

Correct Answer - C

Answer- C. Internal carotid artery

- Surgical ligation of vessels or embolization is the last resort to control epistaxis when all other methods fail. Internal carotid artery is not ligated in case of epistaxis control, as it is the main vessel supplying the central nervous system.
- "Endoscopy identifies the source of posterior epistaxis in over 80 percent of the cases. Ligation should be performed as close as possible to the likely bleeding point. Thus the hierarchy of ligation is: Sphenopalatine artery; internal maxillary artery; external carotid artery; anterior/posterior ethmoidal artery.

65. Gelles test is done in?

a) Otosclerosis

b) Serous otitis media

c) Traumatic hearing loss

d) Age related hearing loss

Correct Answer - A

Ans: A. Otosclerosis

Ref Dhingra Text book of ENT, 6" ed., ch-4

Gelle's test:

- Test of bone conduction and examines the effect of increased air pressure in ear canal on the hearing.
- It was a popular test to find out stapes fixation in otosclerosis but has now been superceded by tympanometry.

66. Best Surgery to relieve intractable Vertigo in a menieres disease patient is?

a) Labyrinthectomy

b) Cochlear Neurectomy

c) Endolymphatic sac decompression

d) Cochleosacculotomy

Correct Answer - A

Ans: A. Labyrinthectomy

(Ref Glasscock-Shambaugh Surgery of the Ear 6' ed., pg. 573).

- Labyrinthectomy is the most destructive procedure in the treatment of Meniere's as it destroys both hearing and vestibular function.

67. A 12 year adolescent male presents with unilateral mass in nose with recurrent spontaneous bleeding. On examination a pink mass covered with mucosa is found in the nasopharynx. Which of the following is not to be done?

a) Biopsy is done for diagnosis

b) CECT is done

c) Endoscopy surgery can be done

d) Angioembolization can be performed

Correct Answer - A

Ans: A. Biopsy is done for diagnosis

Ref: *Scotl Brown, Vt' ed., pg. 2438*

- Nowadays, the diagnosis is based on the CT and MR appearances that are sometimes confirmed by angiography.
- A trans-nasal biopsy is not necessary and can provoke brisk haemorrhage.

68. Caloric test was done on right side with cold water. Eyes moved to the opposite side. Which of the following corresponds to correct interpretation of nystagmus in this test?

a) Eyes move slowly to right

b) Eyes move rapidly to left

c) Eyes move slowly to left

d) Eyes move rapidly to right

Correct Answer - C

Ans: C. Eyes move slowly to left

Ref: Glasscock-Shambaugh Surgery of the Ear 6'h ed., pg. 124

- Endolymph will flow toward the ampulla of the horizontal canal (resulting in an increase in afferent discharge rate) for warm irrigations and away from the ampulla (resulting in a decrease in afferent discharge rate) for cold irrigations.

69. A 55 year old male presents with a lesion of 2.5*3.5 cm on lateral border of tongue with induration. There is no associated lymphadenopathy. What is the staging according to the 8th AJCC guidelines?

a) T2N0M0

b) T3N2M0

c) T4N3M0

d) T3N2M0

Correct Answer - A

Ans: A. T2N0M0

Ref: AJCC Cancer staging manual 1st ed., ch-7, pg. 79,90

- Cancer of the lip and oral cavity TNM staging AJCC UICC 2017

70. female patient came with right side hearing loss, better heard in a noisy environment, Audiogram shown with about 30-40 dB gap between AC-BC of right & left ear. Rinne's test negative, Weber's test centralised. Which of the following condition shown?

a) Ménière's disease

b) stapedial otosclerosis

c) Presbycusis

d) Vestibular schwannoma

Correct Answer - B

Answer-B- stapedial otosclerosis

- In otosclerosis the normal dense endochondral layer of the bony otic capsule gets replaced by irregularly laid spongy bone. Most common site is fissula ante fenestram (anterior to the oval window)
- Age group affected is 20-45 years (maximum between 20-30 years). Male:female ratio is 1:2.
- meniere's disease i.e Endolymphatic hydrops leads to SNHL and not conductive hearing loss.
- Tuning Fork Tests in Otosclerosis: Rinnes test-negative ,Weber's test-lateralized to ear with greater conductive loss.

71. All are characteristic features of superior semicircular canal dehiscence except?

a) Third window phenomenon

b) SNHL

c) Tullio's phenomenon

d) Vestibular evoked myogenic potential is useful investigation.

Correct Answer - B

Ans. B. SNHL

symptoms of SSCD include

* Tullio phenomenon – identifiable symptoms leading to a positive SCD diagnosis is sound-induced loss of balance. Patients showing this symptom may experience a loss of equilibrium, a feeling of motion sickness or even actual nausea, triggered by normal everyday sounds.

* Vestibular evoked myogenic potentials (VEMP): In SSCD, loud tones evoke a short-latency relaxation potential in the ipsilateral sternocleidomastoid muscle. Patients with SSCD typically have a lower-than-normal threshold for the VEMP response, and the amplitude of the VEMP waveform in an SSCD ear is greater for comparable stimulus intensities than in an ear without dehiscence. The VEMP test plays an important role in the evaluation of patients with suspected SSCD

* Low-frequency conductive hearing loss is present in many patients with SSCD and is explained by the dehiscence acting as a "third window phenomenon"

72.

Patient underwent surgery at the lateral part of the skull. Postoperatively patient had aspirations without voice change

a) Vagus

b) RLN

c) Glossopharyngeal

d) SLN

Correct Answer - D

Ans. D (Superior Laryngeal nerve)

* Vagus, RLN involvement leads to hoarseness of the voice

* SLN divide into internal and external laryngeal

* External laryngeal nerve supplies only one muscle- cricothyroid - tensor

* Internal laryngeal nerve- safety nerve of larynx- prevents aspiration and supplies supraglottic part of larynx.

73. The arterial blood supply to the palatine tonsil is derived from branches of the external carotid artery. The principal artery is the tonsillar artery, which is a branch of the?

a) Facial artery

b) Lingual artery

c) Superficial temporal artery

d) Maxillary artery

Correct Answer - A

Ans: A. Facial artery

Palatine tonsil

* These are located between the palatoglossal arch anteriorly and the palatopharyngeal arch posteriorly. They are located in the isthmus of the fauces (a cavity bound laterally by the palatoglossal arches, superiorly by the soft palate and by the tongue underneath).

* Laterally they are attached to the wall by a fibrous capsule, and are covered in stratified squamous epithelium on the pharyngeal side.

* The tonsil is penetrated by 15-20 crypts.

* The lumen of the crypts contain lymphocytes, bacteria and desquamated epithelial cells.

* The palatine tonsils receive their blood supply from the tonsillar branches of five arteries:

- ascending palatine branch of the facial artery
- tonsillar branch of the facial artery
- ascending pharyngeal branch of the external carotid

- dorsal lingual branch of the lingual artery
 - lesser palatine branch of the descending palatine artery
 - Venous drainage is to the internal jugular vein via the peritonsillar plexus of lingual and pharyngeal veins.
- * The nerve supply to the palatine tonsils arises from the maxillary division (V2 division) of the trigeminal nerve (cranial nerve V) as well as the tonsillar branches of the glossopharyngeal nerve (cranial nerve IX).
- * The glossopharyngeal nerve will also continue on to supply taste to the posterior one third of the tongue as well as sensation.

74. Which of the following technique is used to move tongue away from post pharyngeal wall

a) Jaw thrust maneuver

b) Triple maneuver

c) Head maneuver

d) Neck maneuver

Correct Answer - A

Ans. A. Jaw thrust maneuver

* The jaw-thrust maneuver is a first aid and medical procedure used to prevent the tongue from obstructing the upper airways

75. Systemic causes of epistaxis are all except:

a) Hypertension

b) Anticoagulant treatment

c) Hereditary telangiectasia

d) Hemophilia

Correct Answer - D

Ans. D Hemophilia

Ref. Scott Brown 7th/ed Vol 2 p 1605

Epistaxis in Adult

* Primary

* Secondary

No cause is identified but may be due to,

* Use of NSAIDs

* Use of Alcohol

* Hypertension

Cause is identified and it is due to:

* Coagulopathy secondary to liver disease/kidney disease/leukemia or myelosuppression

* Trauma

* Post surgery like inferior turbinectomy, Endoscopic sinus surgery

* Warfarin intake (anticoagulant treatment)

* Hereditary hemorrhagic telangiectasia

* Hemophilia is a Secondary Cause of Epistaxis in Children.

* Hence the answer is d . hemophilia which is not a cause of secondary epistaxis but is implicated in the etiology of primary epistaxis though its role is doubted there also.

76. Which is the most common site for congenital cholesteatoma

a) Anterior superior quadrant of tympanic membrane

b) Posterior superior quadrant of tympanic membrane

c) Anterior inferior quadrant of tympanic membrane.

d) posterior inferior quadrant of tympanic membrane

Correct Answer - A

Ans: A .Anterior superior quadrant of tympanic membrane followed by posterior superior quadrant.

Congenital cholesteatoma was defined as a white, pearly lesion behind an intact tympanic membrane, which after removal was identified on pathological examination as a cholesteatoma. It is the more common causes for onset of childhood conductive hearing loss unrelated to middle ear effusion.