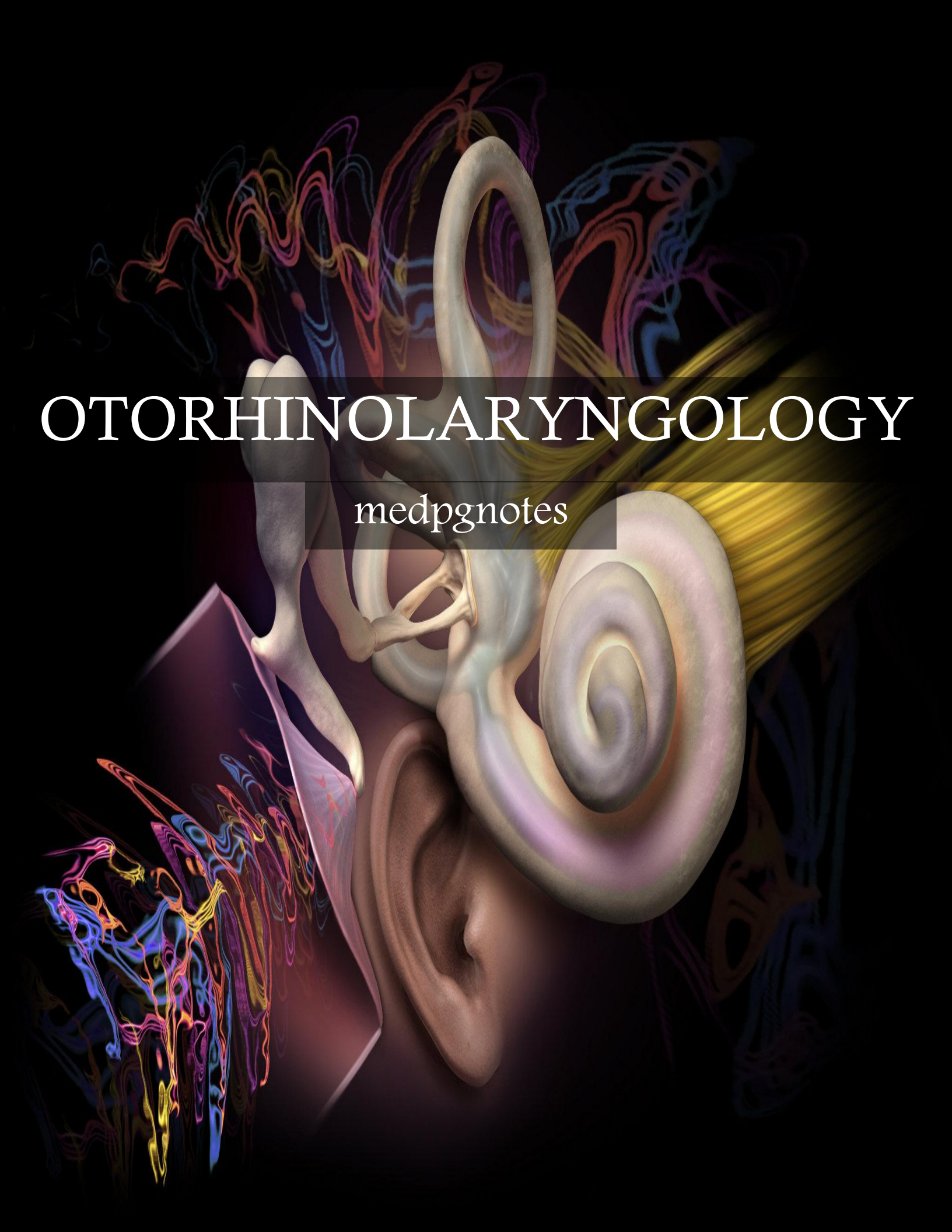

OTORHINOLARYNGOLOGY

medpgnotes

CONTENTS

OTORHINOLARYNGOLOGY

KEY TO THIS DOCUMENT

Text in normal font – Must read point. Asked in any previous medical entrance examinations

Text in bold font – Point from Harrison's text book of internal medicine 18th edition

Text in italic font – Can be read if you are thorough with above two.

EAR

DEVELOPMENT OF EAR

Development of ear	Eustachian tube opens at the level of inferior turbinate, Pinna develops from cleft of first arch, Growth of inner ear completed by 4th months
Inner ear is completely formed by	*25 weeks*
Periauricular sinus	Improper fusion of auricular tubercles
Pinna develops from	1st and 2nd pharyngeal arch
External auditory canal develops from	*First branchial cleft*
Contains all 3 components of embryonic disc	Tympanic membrane
Germ layers in Tympanic membrane	All the three
Malleus and incus are derived from	First arch
Handle of malleus is derived from	Meckel's cartilage
Foot plate of stapes derived from	Reichet cartilage
Foot plate of stapes from	*Otic capsule*
Neuroectodermal origin	*Annular ligament of stapes, foot plate of stapes*
Only bone developing from neural ectoderm	*Foot plate of stapes*
Skeletal element of second brachial arch	Stapes
Third window effect	Dehiscent semicircular canal
Eustachian tube develops from	1st and 2nd pharyngeal pouch
Korner septum is the remnant of	*Petrosquamous fissure*
MC congenital dysplasia	*Schielbe's dysplasia*
Bone NOT present at birth	Petrosquamous
NOT formed at birth	Mastoid Process
Mastoid process starts developing in	2nd year
Attains adult size before birth	Ear ossicles
NOT attain adult size at birth	Maxillary antrum, mastoid antrum, mastoid process, orbit
NOT a pneumatic bone	Mandible, Parietal

ANATOMY OF EAR

Ear lobule is made up of	Elastic cartilage
Skin over Pinna is fixed loosely on	Medial side
Cartilage is absent in pinna	*Above tragus*
Calcification of Pinna	Addison disease, Ochronosis, Frost bite, Gout
Ceruminous glands in the ear are	Modified apocrine glands
Major part of skin of pinna is supplied by	Greater auricular
Sensory supply of external auditory meatus	Auriculotemporal nerve
Nerve arising by two roots that surround middle meningeal artery	*Auriculotemporal nerve*
Nerve supply of pinna	Vagus, Auriculotemporal nerve, Greater auricular nerve,

	lesser occipital nerve
Sensory supply of pinna by	Mandibular nerve
Does NOT give sensory supply to pinna	Tympanic branch of glossopharyngeal nerve
Dehiscence of anterior wall of EACC cause infection in parotid gland via	Fissure of santorini
Fissure of Santorini	*Seen in cartilaginous part, associated with parotid and superior mastoid infection*
Foramen of Huschke	*Anteroinferior part of bony canal*
Tympanomeningeal fissure	*Hyrtl's fissure*
Ear cough is due to irritation of	Arnold's nerve
Arnold nerve	Auricular branch of vagus nerve
Alderman nerve is a branch of	Auricular branch of vagus nerve
Nerve supply to auricle and external canal	Arnold's nerve, Auriculotemporal nerve, Lesser Occipital nerve
Sensory supply of external auditory meatus by	Auriculotemporal nerve
External ear is NOT supplied by	Glossopharyngeal nerve, greater occipital nerve, auditory nerve
Pars flaccida of tympanic membrane is called as	Shrapnell's membrane
Pars flaccida lies between	Two malleolar folds
Cone of light is due to	Handle of malleus
Cone of light	Anteroinferior
Nerve supply of tympanic membrane	Auriculotemporal
Inner and Medial surface of tympanic membrane	Tympanic branch of glossopharyngeal nerve (Jacobson nerve)
Nerve supply of tympanic membrane	Auriculotemporal nerve, auricular branch of vagus, glossopharyngeal nerve
NOT true about tympanic membrane	Healed perforation has three layers
Tympanic cavity	Malleus, Stapedius, Chorda tympani
Distance between tympanic membrane and medial wall of middle ear at the level of center is	2mm
Distance of promontry from tympanic membrane	2 mm
Aditus is closely related to	*Lateral semicircular canal, short process of incus, facial nerve*
Prussak space situated in	Epitympanum
NOT a component of epitympanum	Foot plate of stapes
Narrowest part of middle ear	Mesotympanum
Middle ear communicates anteriorly with	Pharynx
Tegmen seperates middle ear from middle cranial fossa by	Roof of middle ear
Roof of middle ear is formed by	Tegmen tympani
Tegmen tympani is formed by	*Both petrous and squamous part*
Floor of middle ear cavity is related to	Jugular bulb
Floor of middle ear is related to	Internal jugular vein
Promontry seen in middle ear is	Basal turn of cochlea
Medial wall of middle ear	Round window, Oval window, Promontry
NOT a content of tympanic cavity	Posterior auricular nerve
Tympanic plexus is formed by	Tympanic branch of glossopharyngeal nerve
Tympanic plexus is present in	Medial projection of middle ear cavity >> petrous part of temporal bone
Tympanic plexus is present in	Promontory of middle ear

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Sensory nerve supply of middle ear cavity is produced by	Glossopharyngeal nerve
Stapes foot plate cover	Oval window
Smallest muscle in the body	Stapedius
Stapedius	*Asymmetric bipennate muscle*
Smallest bone	Stapes
Processus cochleariformis is attached to	Tendon of Tensor tympani
Toynbee muscle	Tensor tympani
Tensor tympani is attached to	*Neck of malleus*
Tensor tympani is supplied by	Trigeminal nerve
Innervations of tensor tympani muscle	Mandibular nerve
Anterior wall of tympanic cavity contain	Tensor tympani muscle
Muscle originating from pyramid of middle ear	Stapedius
Stapedius is supplied by	Facial nerve
Superior Malleolar ligament connects	Head of Malleus to roof of Epitympanum
Anterior malleolar fold	Longer than posterior
Structure inferior to Sphenopetrosal Synchondrosis	Cartilaginous part of Auditory tube
Length of adult Eustachian tube	36 mm
Elastic cartilage found in	Auditory tube
Eustachian tube	Inner 2/3rd cartilaginous, opens during swallowing, tensor palati opens it, higher elastin content in adults
Eustachian tube opens into middle ear cavity at	Anterior wall
Eustachian tube opens into nasopharynx	*1 cm behind posterior end of inferior turbinate*
Pharyngeal opening of Eustachian tube in infant is at the same level of	*Tympanic opening*
Pressure difference between Middle ear and Eustachian tube producing Tympanic membrane rupture	100 mm Hg
Swallowing movements open to Eustachian tube	*Tensor palate*
Toynbee test is for	*Eustachian tube dysfunction*
Facial recess	*Posterior wall of middle ear*
Boundaries of facial recess	*Vertical portion of facial nerve, fossa incudis, chorda tympani branch of facial nerve*
Facial recess is bounded medially by	Vertical part of facial nerve
Spine of henle	Cancellous bone
Suprameatal triangle is the external marker of	Mastoid antrum
Mac Ewan triangle is land mark for	Mastoid antrum
Anatomical landmark for facial nerve	Mastoid antrum
NOT a boundary of Mac Ewan triangle	Promontry
Inner ear anatomy	Vestibule is the central chamber
Inner ear is present in	Petrous part of temporal bone
Number of ossification centres in bony labyrinth	*14*
Stereocilia & Kinocilium are seen in	Inner ear
Arcurate eminence of petrous temporal bone is caused by	Superior semicircular canal
Horizontal semicircular canal	Lateral

Lateral semicircular canal is related to	*Medial and posterior semicircular canal*
Singular nerve	Inferior vestibular nerve supplying posterior semicircular canal
Crus commune	Cochlea
Crus communae is formed by	*Non ampullated parts of posterior and superior semicircular canal*
Modiolus (apex) is directed	Anterolateral – inferior
Organ of corti situated in	Scala media, basilar membrane
Organ of corti is situated on	Basilar membrane
Reissner's membrane	Scala vestibuli
Cochlear aqueduct connects	Internal ear with subarachnoid space
Infection of CNS spreads in inner ear through	Cochlear aqueduct
More potential route for transmission of meningitis	Cochlear aqueduct
NOT a route of spread of infection from middle ear	Lymphatics
Ductus reunions connect	*Cochlear duct with saccule*
Blood supply to inner ear derived from	Anterior inferior cerebellar artery
Labyrinthine artery is a branch of	Anterior inferior cerebellar artery
Base of skull fracture causes rupture of	Anterior inferior cerebellar artery
NOT a feature of basal skull fracture	*Severe epistaxis*
Length of internal auditory canal	*1 cm*
Vertical crest in internal auditory canal	Bill's bar
VIII cranial nerve	Balance, Equilibrium
Nerve of pterygoid canal	Vidian nerve
Endolymph is secreted by	Stria vascularis
Endolymph is secreted by	Secretory cells of stria vascularis of cochlea
Volume of endolymph	*150 ml*
High in Endolymph	K+
Increase in K+ levels in ECF (ECF resembling ICF)	Endolymph
Extracellular fluid having high potassium and low sodium	Endolymph
Endolymph is absorbed by	Endolymphatic sac in subdural space
Endolymph is seen in	Scala media
Endolymphatic duct connects	Scala media to subdural space
Endolymphatic duct drains in to	Sacculus
Membranous labyrinth floats in	*Perilymph*
Perilymph is	*Ultrafiltrate of blood*
Perilymph contains	Na+
Perilymph around Organ of Corti drains into	Subarachnoid space
Perilymph communicates with Subarachnoid space through	Aqueduct of Cochlea

PHYSIOLOGY OF EAR

Father of Otoneurology	William House
Unit of frequency of sound	Hertz
Speech frequencies	*500 Hz, 1000 Hz, 2000 Hz*
Area of Adult Tympanic Membrane	90 mm2 (17:1), 55 mm2 (14:1 – Functional)