

MIDDLE EAR.

- * Also called tympanic cavity/tympanum
- * Narrow air filled space
- * Situated in the petrous part of temporal bone.

Contents of Middle Ear

1. Inside mucous lining.

— Air

2. Outside mucous lining.

— three small ear ossicles
malleus, incus, stapes.

— Two nerves: chorda tympani and
tympanic plexus.

— Two muscles: tensor tympani
stapedius.

— Vessels supplying & draining middle ear

— Ligaments of middle ear

Subdivisions of Middle Ear.

epitympanum
above tympanic
membrane.

mesotympanum.
tympanic
membrane

hypotympanum.
below tympanic
membrane

Boundaries of Middle Ear

1. Roof

- formed by thin plate of bone - tegmen tympani.
- separates tym. cavity from middle cranial fossa

2. Floor

- formed by thin plate of bone. ~~sep~~
- separates me. tympan. cavity from jugular bulb.
- tympanic branch of glossopharyngeal (IX) nerve. — (1)

3. Anterior wall

- two upper holes.
 - ↳ tensor tympani
 - ↳ tubal opening
- ↳ bone $\frac{5}{10}$ mm extends medially to form process cochlearis
- centers anterior wall
- bounded by ICA.

4. Posterior wall - Mastoid wall.

~~tympanic membrane.~~
* Superiorly, aditus is an opening through which epitympanic recess communicates with mastoid / tympanic antrum.

• Fossa Incus : small depression close to aditus leading short process of malleus.

* Pyramid : conical bump projected by malleus

- opening at its apex for passage of tendon of stapedius.

* Posterior canaliculus for chorda tympani: for emergence of this nerve.

* Vertical part of facial canal; just behind pyramid
- descends upto stylomastoid foramen.

5. Lateral Wall.

- separates middle ear from ext. acoustic meatus

- membranous wall

- formed by  tympanic membrane (main)
squamous temporal bone (lessing)

- Near tympanic notch there are 2 small apertures

① petrotympanic fissure

② An. canaliculus for chorda tympani

6 Medial Wall.

- separates middle ear from internal ear

(i) Promontory : round bulging formed by first turn of cochlea.

- grooved by tympanic plexus

(i) Foveola Vestibuli / Oval window

- oval opening posterolateral to the promontory
- leads into vestibule of internal ear & is closed by foot plate of stapes

(ii) Foveola Cochlear / Round Window

- Round opening @ bottom of below & behind promontory
- opens into scala tympani of cochlea.
- closed by ~~the~~ 2° tympanic membrane.

(v) Sinus Tympani

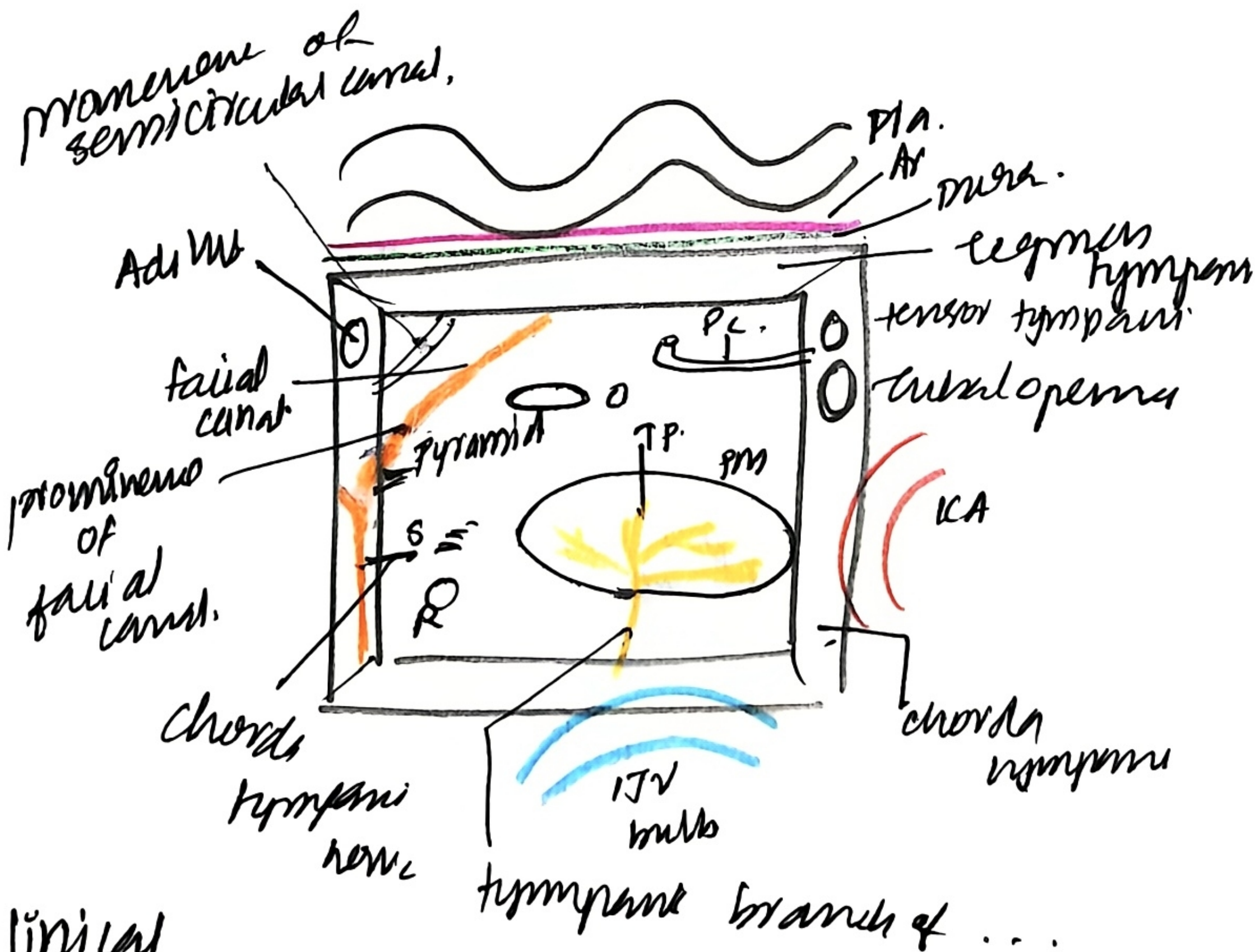
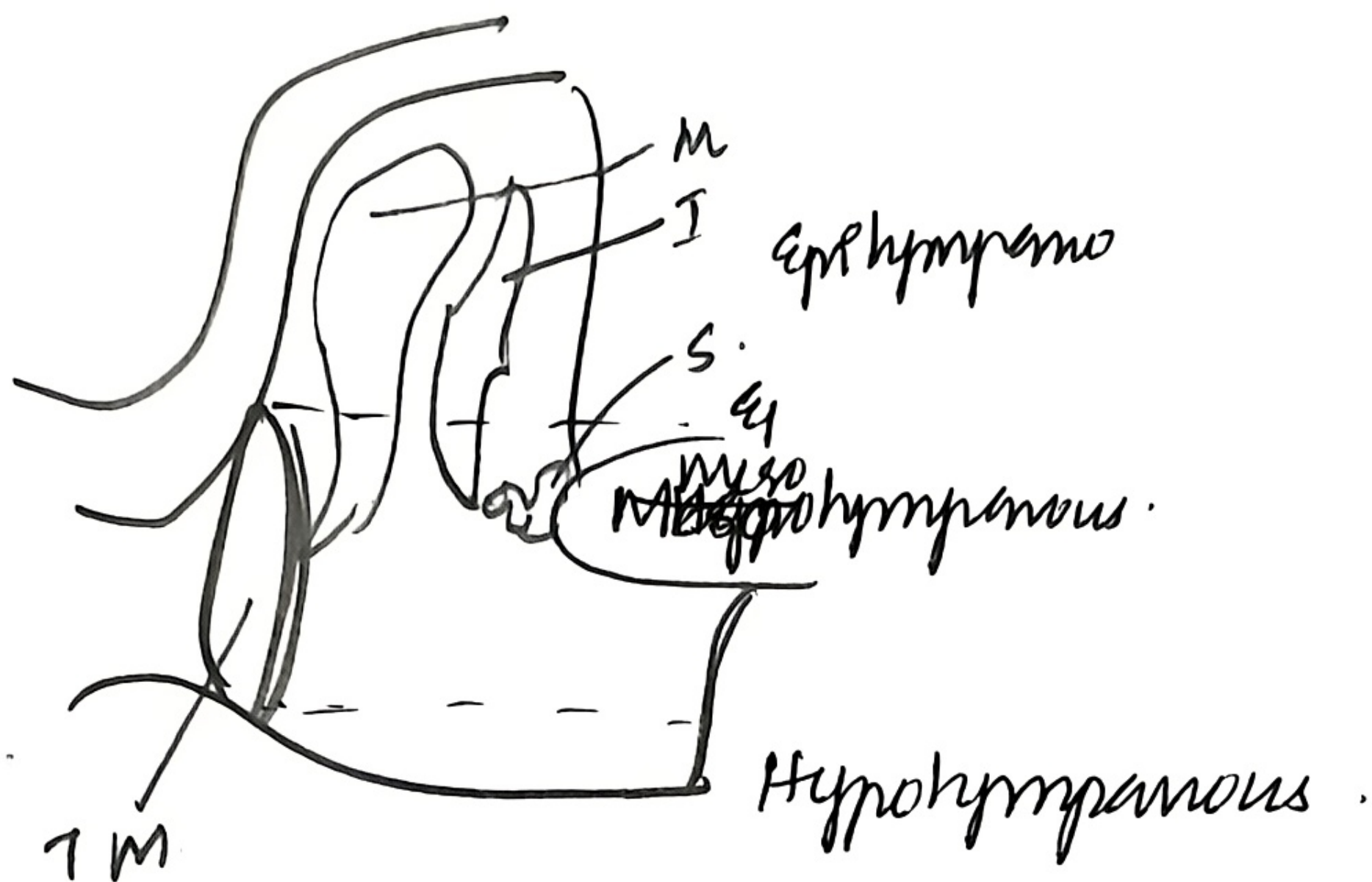
- depression behind promontory. •
above the ampulla of posterior semicircular canal.

(vi) Prominence of oblique part of facial canal

- Runs backward & downward above oval window to reach lower margin of aditus.
- Descends behind post wall to end @ stylomastoid foramen.

(vii) Prominence of lateral semicircular canal of internal ear:

- above the facial canal



Clinical
Otitis Media.

Upper resp tract → middle ear
pharyngotympanic tube