Assignment: Head to Toe 2006

• Concerning the material that I will present on the Temporal Bone and Ear, I would recommend that everyone work the following questions from Head to Toe 2006: #7, #10, #65, #88, #97, #100, #104, #118, #121, #157, and #164. By working the questions, I mean that you should read and understand the hints and explanations, even if you get a question correct on your first attempt.
Lateral View of Temporal Bone \textit{in situ}

Grant’s Atlas, 12th Ed.
Fig. 7.3A, page 612

Temporomandibular Joint (TMJ)

Grant’s Atlas, 12th Ed.
Fig. 7.40A, page 664

Grant’s Atlas, 12th Ed.
Fig. 7.46A, page 675
Plane (coronal) of the cut through the temporal bone as seen on the next slide.

Mastoid process

Mastoid air cells within the mastoid process

Sigmoid sinus

Petrosal Sinuses
  - Superior
  - Inferior

Grant’s Atlas, 12th Ed.
Fig. 7.24B, page 642
Inferior View of Skull showing Temporal Bone (in dark pink)

- Carotid canal
- Petrous portion of temporal bone
- Jugular foramen

Inferior View

- Foramen ovale
- Foramen spinosum
- Spine of sphenoid
- Mandibular fossa
- Petrotympanic fissure
- Cartilaginous auditory tube
- External auditory meatus
- Internal carotid artery entering carotid canal
- Jugular foramen
- Stylomastoid foramen
- Mastoid process
The Cartilagenous Auditory Tube Opens into the Nasopharynx
(air can exchange between nasopharynx and the middle ear cavity)

Nasopharynx (space above the soft palate)

Grant’s Atlas, 12th Ed.
Fig. 7.61, page 694

Muscles of Pharynx: Median (Sagittal) Section

Tensor veli palatini muscle

Cartilagenous auditory tube

Levator veli palatini muscle

Salpingopharyngeus muscle

Palatopharyngeus muscle

Superior pharyngeal constrictor muscle

Pterygomandibular raphe

Torus tubarius
Superior View of Cranial Fossae shows Petrous Part of Temporal Bone

Grant’s Atlas, 12th Ed.
Fig. 7.6A, page 618

Hiatus of facial canal

Tegmen tympani

Arcuate eminence

Grant’s Atlas, 12th Ed.
Fig. 7.77A, page 714
Superior View of Petrous Pyramid
(drilled out)

Grant’s Atlas, 12th Ed.
Fig. 7.74, page 709

Hiatus of facial canal

Tegmen tympani

Arcuate eminence

Hiatus of facial canal

Grant’s Atlas, 12th Ed.
Fig. 7.77A, page 714
Anterior (superior) semicircular canal raises arcuate eminence.

Tegmen tympani

Arcuate eminence

Hiatus of facial canal

Grant’s Atlas, 11th Ed.
Fig. 7.77A, page 714
Posterior View of Petrous Parts of Temporal Bones

Grant's Atlas, 12th Ed.
Fig. 7.4C, page 615

Structures seen on Posterior Face of Petrous Pyramid

Grant's Atlas, 11th Ed.
Fig. 7.85B, page 706
Cutaneous Innervation of Auricle

Concha (green area)-
**Auricular branch of vagus**
(Arnold’s nerve)

Lateral surface of blue area-
**Great auricular nerve**

Medial surface of blue area-
**Great auricular nerve**

Lateral surface of red area-
**Auriculotemporal nerve**

Free medial surface of red area-
**Lesser occipital nerve**

Grant’s Atlas, 12th Ed.
Fig. 7.68A, page 703

Syllabus, page 466, topic e
Middle Ear Cavity
Horizontal section

Similar to: Grant’s Atlas, 12th ed.
Figure 7.72A, p. 707
External view of Tympanic Membrane (Eardrum)

- Pars flaccida
- Lateral process of malleus
- Posterior mallear fold
- Anterior mallear fold
- Handle of malleus
- Pars tensa
- Cone of light
- Umbo

Inferior

Middle Ear Cavity
Horizontal section

- Incus
- Facial nerve (in facial canal)
- Malleus
- Chorda tympani
- Middle ear cavity (Tympanic cavity)
- Tympanic membrane (Eardrum)

Similar to: Grant's Atlas, 12th ed.
Figure 7.72A, p. 707
Diagram of Middle Ear Cavity
Anterior wall removed

Chorda tympani
Lesser petrosal nerve
Facial nerve in facial canal
Tympanic membrane
Tympanic plexus
Facial nerve beyond stylomastoid foramen

Simplified Diagram of Lateral Wall of Middle Ear Cavity
(Inside the cavity looking out)
Detailed Diagram of Lateral Wall of Middle Ear Cavity
(Inside the cavity looking out)

- Tensor tympani
- Attic
- Bony auditory tube
- Tympanic canaliculus
- Internal carotid artery
- Internal jugular vein
- Tegmen tympani
- Aditus ad antrum
- Mastoid air cells
- Chorda tympani
- Facial nerve

Grant’s Atlas, 12th Ed.
Figure 7.75D, page 711

Lateral Wall of Middle Ear Cavity
(Inside the cavity looking out)

- Attic (or epitympanum)
- Tensor tympani muscle
- Bony auditory tube
- Chorda tympani nerve
- Eardrum
- Facial nerve
Epitympanic recess (attic)
Malleus
Incus
Stapes
Vestibule

External auditory meatus and tympanic membrane

Medial Wall of Middle Ear Cavity
(Inside the cavity looking in)

Tensor tympani muscle
Greater petrosal nerve
Tendon of stapedius muscle
Round window
Stapes in oval window
Promontory of cochlea
Bony auditory tube
Parts of the Bony Labyrinth (in inner ear) that form the Medial Wall of the Middle Ear

- Horizontal or lateral semicircular canal
- Oval window (stapes fits here)
- Facial canal (for facial nerve)
- Promontory of cochlea
- Round window

Tympanic Plexus is on the Medial Wall of Middle Ear

- Tympanic plexus lies on the medial wall of the middle ear (i.e. on the promontory)
- Jugular foramen
- Carotid canal
- Inferior tympanic canaliculus (tympanic nerve runs through it)

Grant's Atlas, 12th Ed.
Figure 7.77C, page 714

Grant's Atlas, 12th Ed.
Figure 7.75B, page 710
Diagrammatic Review of Glossopharyngeal Nerve (CN IX)

- Glossopharyngeal nerve
- Tympanic nerve (branch of glossopharyngeal)
- Lesser petrosal nerve
- Otic ganglion
- Parotid gland
- Auriculotemporal nerve
- Tympanic nerve (branch of glossopharyngeal)

Superior View of Petrous Pyramid (drilled out)

- Internal auditory meatus
- Greater petrosal nerve
- Lesser petrosal nerve
- Geniculate ganglion
- Malleus
- Incus
- Middle ear cavity

Facial nerve (before genu)
Facial nerve (after genu)
End of Part 1

Radiologic Anatomy Practice Questions
Head and Neck
2008

Here are the practice questions.
You can look up the answers in the Radiologic Anatomy Program.

For confirmation of the answers, come to Dr. Sholley’s Review.
A. Identify the black area indicated by the arrow.

B. The bony structures indicated by the yellow arrows are the _______.

A. Identify the black area indicated by the red arrow.

B. Identify the bony structure indicated by the red arrow.
A. The yellow arrows indicate the _________.

B. Identify the black area indicated by the red arrow.

A. The yellow arrows indicate the _________.

B. Identify the structure indicated by the red arrow.
A. Identify the soft tissue structure indicated by the red arrow.

B. The yellow arrow indicates the ________.