

BOGOMOLETS NATIONAL MEDICAL UNIVERSITY

Department of human anatomy

GUIDELINES

<i>Academic discipline</i>	HUMAN ANATOMY
Module №	1
Content module №	2
The theme of the lesson	Eye-socket, bone nasal cavity. bony palate
Course	1
The number of hours	3

Kyiv 2017

1. Specific goals:

After the classes a student should know and be able to:

- 1.1. Parts of the skull, its rules, individual, age and gender characteristics.
- 1.2. The boundaries between the base of the skull and its vault.
- 1.3. The structure of the facial skull, frontal skull rate.
- 1.4. Orbit, its walls, holes and channels connecting it with the adjacent cavities.
- 1.5. Bone nasal cavity, its walls, nasal passages, holes and channels connecting it with the adjacent cavities.
- 1.6. Bony palate formation, seams, holes, channels, connections with adjacent cavities.
- 1.7. To analyze possible ways of infection in the cranial cavity and beyond.
- 1.8. To analyze the occurrence of defects of the facial skull.

2. Basic level of preparation.

Before classes a student should know and be able to:

- 2.1. To demonstrate the skull, describe them.
- 2.2. Describe the rules of the skull: vertical, lower, the front, side, occipital.
- 2.3. Demonstrate and describe some of the skull.
- 2.4. To analyze the situation in individual skull bones brain and facial skull.
- 2.5. Describe areas of the head.
- 2.6. Identify the anatomical planes of the human body and anatomical terms to indicate the location of the bones of facial skull about these planes.
- 2.7.0pysuvaty stages of bone (connective tissue, cartilage, bone). Classify bone development (primary, secondary).
- 2.8. To determine which facial bones of the skull is the development of primary (pokrivnymy)?
- 2.9. To determine which facial bones of the skull developments are secondary?
- 2.10. To determine that the gill arch are involved in the formation of bones of facial skull?
- 2.11. Describe the defects of the upper jaw.
- 2.12. Describe the defects of the mandible.
- 2.13. Analyze the main buttresses in the skull.

3. Organization of educational materials.

Teaching material is described in a logical sequence involving structural logic, tables, figures that reflect the content of the main topics of practical lessons.

4. The content of the material.

Neurocranium (cranial)

Viscerocranium (facial skull, skull visceral)

For the convenience of studying of a skull taken to consider it from several sides:

Norma facialis; norma frontalis (facial rule, frontal norm)

Norma superior; norma verticalis (upper rule, vertical rule)

Norma occipitalis (occipital norm)

Norma lateralis (lateral norm)

Norma inferior; norma basalis (the lower the rate, the main rate)

Anatomical facial lesions rules are:

Full-pit (steam) (orbita)

Bone nasal cavity (cavitas nasalis ossea)

Orbita (eye fossa, orbit):

Cavitas Orbita (orbital cavity) – contains an eyeball, additional structures of the eye (eye socket body fat, periosteum eye socket, external muscles, muscle fascia, lacrimal apparatus conjunctiva, eyelids, brow)

Aditus Orbita (orbital input)

Margo orbitalis (orbital edge)

- Margo supraorbitalis (supraorbital edge)

- Margo infraorbitalis (infraorbital edge)

- Margo lateralis (lateral edge)

- Margo medialis (medial edge)

Paries superior (upper wall): Fasia orbitalis (pars orbitalis os frontale) Ala minor (small wing) (os sphenoidale)

Connection and creations:

Spina trochlearis (block awn), Fovea trochlearis (trochlear hole), Fossa glandulae lacrimalis (lacrimal gland fossa)

Incisura supraorbitalis / foramen supraorbitale (supraorbital cutting / supraorbital hole)

Incisura frontalis / foramen frontale (tenderloin frontal / frontal hole)

Paries medialis (medial wall):

Processus frontalis maxillae (frontal process of maxilla)

Os lacrimale (lacrimal bone)

Lamina orbitalis ossis ethmoidale (orbital bone plate lattice)

Corpus ossis sphenoidale (body sphenoid bone)

Facies orbitalis (pars orbitalis ossis frontalis) (orbital surface of the frontal bone)

Connections: Foramen ethmoidale anterius (anterior ethmoid hole) Foramen

ethmoidale posterius (rear mesh opening) Fossa sacci lacrimalis (lacrimal sac fossa)

Canalis nasolacrimalis (naso-lacrimal Channel) canalis opticus (visual channel)

Paries inferior (bottom wall):

Facies orbitalis corpus maxillae (orbital surface of the maxilla)

Processus orbitalis ossis palatinae (orbital process palatal bone)

Facies orbitalis ossis zygomatici (orbital surface of the zygomatic bone) Connectivity:

Sulcus infra orbitalis (infraorbital sulcus)

Canalis infraorbitalis (infraorbital channel)

Foramina alveolaria (cellular holes)

Fissura orbitalis inferior (lower orbital fissure)

Fissura orbitalis superior (the upper orbital fissure)

Paries lateralis (lateral wall):

Facies orbitalis (ala major ossis sphenoidale) (orbital surface is large wing of sphenoid)

bone)

Facies orbitalis (os zygomaticum) (orbital surface of the zygomatic bone) Processus zygomaticus (os frontale) (Zygomatic process of frontal bone)

Articulation:

Foramen zygomaticoorbitale (zygomatic-orbital hole)

Foramen zygomaticofaciale (zygomatic facial-hole)

Foramen zygomaticotemporale (zygomatic-temporal hole)

The combination of eye socket

1.

- The anterior cranial fossa through the visual channel;
- From the nasal cavity through the nasal-lacrimal canal;
- With the temporal fossa and the lateral surface of the zygomatic bone through the zygomatic-orbital hole, which divides into two channels that open under the zygomatic-temporal and zygomatic facial-holes;

2.

- Through the lower orbital fissure with wing-palate and infratemporal holes;
- In the upper orbital fissure of the middle cranial fossa;

3.

- Through the back mesh opening of the nasal cavity;
- Through front hole ethmoidal of the anterior cranial fossa;

Cavitas nasalis ossea (bone nasal cavity) - occupies a central position in the front of the skull between the base of the skull (top), Oral (below) eye holes and maxillary sinus (on the sides)

Septum nasi osseum (bone nasal septum) divides the nasal cavity in the bone

Meatus nasi communis dexter et sinister.

Septum nasi osseum formed:

- Lamina perpendicularis ossis ethmoidale (perpendicular plate lattice fracture)
- Vomer ;

The initial hole (in the bow of the throat through meatus nasopharyngeus) - choana; apertura

Nasalis posterior (choana ratio, posterior nasal openings)

The upper wall:

- Os nasale (nasal)
- Pars nasalis (os frontale) (nasal part of the frontal bone)
- Lamina cribrosa (os ethmoidale) (ethmoid bone plate lattice)
- Facies inferior corpus ossis sphenoidale (the lower surface of the body of the sphenoid bone) anatomic lesions and connections:
 - Foramina cribrosa laminae cribrosae (os ethmoidale) (lattice openings)
 - Cellulae ethmoidales (ethmoidal cell)
 - Foramen ethmoidale anterius (anterior ethmoid hole)

The lower wall formed bony palate:

Processus palatinus maxillae (palatine process of maxilla)

Lamina horizontalis ossis palatinae (horizontal plate of palatine bone)

Anatomical formations and connections:

- Foramina palatine minora (small palatal holes)
- Foramina palatine majora (large palatal hole) Crista nasalis (nasal crest)

Spina nasalis posterior (posterior nasal awn) Canales incisivus (incisive hole)

The side wall is formed by:

- Processus frontalis et facies nasalis corpus maxillae (frontal nasal appendage and surface of the upper jaw)
- Os nasale (nasal)
- Os lacrimale (lacrimal bone)
- Labyrinthus ethmoidalis (ethmoid labyrinth)
- Concha nasalis suprema
 - Concha nasalis superior
- Concha nasalis media
- Concha nasalis inferior
- Lamina perpendicularis (os palatinum) (perpendicular plate of palatine bone)
- Lamina medialis processus pterygoideus (os sphenoidale) (at an average plate pterygoid process of sphenoid bone)

Anatomical formations and connections:

Meatus nasi superior (upper nasal passage)

- Open cellulae ethmoidales posteriores
 - Recessus sphenothmoidalis
- Meatus nasi medius (middle nasal passage)
- Open cellulae ethmoidales anteriores,

Cellulae ethmoidales mediae

- Opens a hole through the sinus frontalis infundibulum ethmoidale
- Opens a hole through the sinus sphenoidalis hiatus semilunaris

Meatus nasi inferior (lower nasal passage)

Ostium canalis nasolacrimalis (hole of the naso-lacrimal canal)

Foramen sphenopalatinum (connecting with the wing-palatine fossa) Canales palatine minores (small palatal channels) Canalis palatinus major (large palatal canal)

The combination of nasal passages

1. Meatus nasi superior combined:

of the anterior cranial fossa through the latticed plate;

- The sphenoid sinus through the mesh wedge-wedge hole and corner tpazuhy;
- With wing-palatine fossa through the wedge-palatal opening;
- On the back of ethmoid cells;

2. Meatus nasi medius (middle nasal passage)

3. Meatus nasi inferior (lower nasal passage) combined:

with day fossa through nasal-Lacrimal canal

4. Meatus nasi communis (common nasal passage) - the space between turbinate on the one hand and bone wall - on the other.

5. Meatus nasopharyngeus - formed by the merger of the nasal passages and connects the nasal cavity with bone nose throat

Bony palate (palatum osseum) created:

- Processus palatinus maxillae (palatine process of maxilla)
- Lamina horizontalis ossis palatinae (horizontal plate of palatine bone)

Anatomical formations and connections:

Sutura palatine mediana (median palatal suture) Foramen incisivum (incisive hole)

- Canalis incisivus (opens in mouth)

Sutura palatina transversa (transverse palatal suture)

Foramina palatina minora

Foramen palatinus majus (canalis palatinus major - a combination of wing-palatine fossa) Spina nasalis posterior (posterior nasal awn)

The holes on the outside of the skull base and Functions

Area of the skull	Names of the holes	Localization of the holes on the skull
I	2	3

bony palate	Incisive opening (odd)	Behind the medial incisors in the median palatal seam. Hole begins the incisive canal
	Great palatal hole	In postero-lateral palate bone area, near the end of the transverse palatal suture
	Small palatal holes	In postero-lateral palate bone area, near the end of the transverse palatal suture
	Oval hole	In the back of the base of the wing of sphenoid bone
The average area of external	neural opening	In the back of the base of the wing of sphenoid bone
bony palate	ragged hole	Between the rocky tip of the temporal bone, the lateral edge of the main part of the occipital bone

	External opening carotid channel	On the lower surface of the stony part of the temporal bone in front of the jugular fossa
	The opening of the drum	At the bottom of rocky dimples that is placed between the outer hole sleepy canal and jugular fossa
	Hole mastoid tubule	The bottom jugular fossa
	Stony-reel slot	Between the front edge of the drum of the temporal bone and the edge of the roof of the tympanic cavity (behind the drum-scaly cracks)
	Drum-scaly fissure	Between the front edge of the drum and the rear edge of the lower part of the temporal bone scales
	jugular hole	Between the rear edge of the rocky parts of the temporal bone (in front) and the front edge of the lateral occipital bone behind
	Stylo-mastoid hole	It is located between the base and the mastoid process of the temporal bone
At the level of the big occipital	mastoid hole	The basis of the mastoid process, closer to the back edge of the temporal bone
	Condylar hole	In condylar fossa, behind the occipital condyle occipital bone
	External hypoglossal nerve canal	The lateral occipital condyle surface of the base
	Grand opening	In the center of the occipital bone - behind the main part and the side parts of

Area of the skull	Names of the holes	Localization of the holes
1	2	3
Anterior cranial fossa	perforated holes	The average area of the anterior cranial fossa perforated plate of the ethmoidal bones
Middle cranial	Visual channel	At the heart of the small wing of sphenoid bone
	The upper orbital fissure	Between large and small wings of sphenoid bone (in front of the middle cranial fossa)
	Internal carotid canal	At the top of the rocky parts of the temporal bone
	Round hole	At the heart of the great wing sphenoidal bone behind the upper orbital fissure
	Oval hole	At the heart of the great wing sphenoidal bone, behind and to the side of a round hole
	neural	At the rear corner of the large wing of sphenoid bone and the back side of the foramen ovale
	Roztvir large rocky nerve canal	The front of rocky surface of the temporal bone at the side of the trigeminal oppression
	Hiatus of the small rocky first channel	Slightly ahead and below the channel of the hiatus of small rocky nerve

1	2	3
Posterior cranial fossa	The inner ear hole	The back surface of stony chastyny temporal bone and the lower side of the inner ear hole
	Tubular vestibular hole	The back surface of the temporal bone's rocky part
	Mastoid hole	Around the middle groove of sigmoid sinus
	Jugular hole	Closer to the base of rocky parts of temporal bone below the inner ear hole
	Channel of the hypoglossal nerve	Inside the edge of the occipital bone
	Condylar channel	In sulcus of sigmoid sinus, side and back of the jugular foramen

6. Applications:

- Questions to control the entry level of students' knowledge.
- Questions to control the final level of training.
- Formatted tests (STEP 1).
- Practical tasks and illustrations in the manual "Human Anatomy"