

NEUROLOGY

TASK №1

The function of the nervous system. Classification of the nervous system. General data. General development of the nervous system.

1. . A patient presents with a loss of sensation to the skin over the shoulder. Injury to which of the following nerve cells would most likely affect the conduction of sensory information to the central nervous system (CNS)? +

- (A) Multipolar neurons
- (B) Bipolar neurons
- (C) Unipolar or pseudounipolar neurons***
- (D) Neurons in the ventral horn
- (E) Neurons in sympathetic chain ganglia

The answer is C. Sensation from the skin is carried by general somatic afferent (GSA) fibers, and their cells are unipolar or pseudounipolar types, located in the dorsal root ganglia. Multipolar neurons and neurons in the ventral horn and in sympathetic chain ganglia are motor neurons. Bipolar neurons are sensory neurons, but they are not somatic sensory neurons.

TASK №2

The spinal cord: the topography, structure and function.

1. A 10-year-old boy falls off his bike, has difficulty in moving his shoulder, and is brought to an emergency room. His radiogram and angiogram reveal fracture of the surgical neck of his humerus and bleeding from the point of the fracture. Following this accident, the damaged nerve causes difficulty in abduction, extension, and lateral rotation of his arm. Cell bodies of the injured nerve involving in movement of his arm are located in which of the following structures?+

- A. Dorsal root ganglion
- B. Sympathetic chain ganglion
- * C. Anterior horn of the spinal cord**
- D. Lateral horn of the spinal cord
- E. Posterior horn of the spinal cord

The answer is C. The (injured) axillary nerve contains general somatic efferent (GSE) fibers whose cell bodies are located in the anterior horn of the spinal cord and these GSE fibers supply the deltoid and teres minor muscles. The axillary nerve also contains general somatic afferent (GSA) and general visceral afferent (GVA) fibers whose cell bodies are located in the dorsal root ganglia and sympathetic postganglionic fibers whose cell bodies are located in sympathetic chain ganglia. The lateral horn of the spinal cord between T1 and L2 contains cell bodies of sympathetic preganglionic fibers. The posterior horn of the spinal cord contains cell bodies of interneurons.

2. A 10-year-old boy falls off his bike, has difficulty in moving his shoulder, and is brought to an emergency room. His radiogram and angiogram reveal fracture of the surgical neck of his humerus and bleeding from the point of the fracture. The damaged nerve causes numbness of the lateral side of the arm. Cell bodies of the injured nerve fibers involved in sensory loss are located in which of the following structures?

- A. Anterior horn of the spinal cord
- B. Posterior horn of the spinal cord
- C. Lateral horn of the spinal cord

*** D. Dorsal root ganglia**

E. Sympathetic chain ganglia

The answer is D. Axillary nerve contains general somatic efferent (GSE), general somatic afferent (GSA), general visceral afferent (GVA), and sympathetic postganglionic general visceral efferent (GVE) fibers. Cell bodies of GSA and GVA fibers are located in the dorsal root ganglia. Cell bodies of GSE fibers are located in the anterior horn of the spinal cord. Cell bodies of sympathetic postganglionic GVE fibers are located in the sympathetic chain ganglia, but cell bodies of sympathetic preganglionic GVE fibers lie in the lateral horn of the spinal cord.

3. As a result of a pathological process the function of the efferent part central link of the vegetative nervous system sympathetic department was affected. Point out possible localization of the process in the spinal cord. +

*** A. Lateral intermediate nucleus of lateral horns.**

B. Medial intermediate nucleus of lateral horns.

C. Dorsal nucleus of posterior horns.

D. Proper nucleus of posterior horns.

E. Central nucleus of anterior horns.

4. A 16-year-old patient received a stab wound, and axons of the general somatic efferent (GSE) neurons to the shoulder muscles were severed. The damaged axons: +

(A) Would carry impulses toward the cell bodies

(B) Would carry impulses away from the cell bodies*

(C) Would carry only motor impulses

(D) Are several in number for multipolar neurons

(E) Are found primarily in the gray matter

The answer is B. The axons of the neurons carry impulses away from the cell bodies, and dendrites carry impulses to the cell bodies. The axons contain sensory or motor fibers. Multipolar neurons have several dendrites and one axon. The gray matter of the central nervous system (CNS) consists largely of neuron cell bodies, dendrites, and neuroglia, whereas the white matter consists largely of axons and neuroglia

5. A 16 year-old patient received a laceration of the posterior intercostal nerves by a penetrated knife blade. A pathologist obtained needle biopsy tissues and observed numerous degenerated cell bodies of the unipolar or pseudounipolar neurons. Which of the following structures would most likely provide the abnormal cell morphology?

(A) Ventral horn of the spinal cord

(B) Lateral horn of the spinal cord

(C) Dorsal horn of the spinal cord

(D) Dorsal root ganglion*

(E) Sympathetic chain ganglion

The answer is D. Ventral, lateral, and dorsal horns and sympathetic chain ganglia contain multipolar neurons, whereas the dorsal root ganglion contains unipolar or pseudounipolar neurons. A laceration of the intercostal nerve injures general somatic efferent (GSE), postganglionic sympathetic general visceral efferent (GVE), general visceral afferent (GVA), and general somatic afferent (GSA) fibers, whose cell bodies are located in the anterior horn, sympathetic chain ganglia, and dorsal root ganglia.

6. A 9-year-old boy came to his doctor's office for neurologic examination. His pediatrician told him that normally synapses are absent in or on which of the following structures?

- (A) Anterior horn of the spinal cord
- (B) Dorsal root ganglia***
- (C) Sympathetic chain ganglia
- (D) On dendrites
- (E) On cell bodies

The answer is B. Dorsal root ganglia consist of cell bodies of the unipolar or pseudounipolar neurons and have no synapses. Axosomatic and axodendritic synapses are the most common, but axoaxonal and dendrodendritic contacts are also found in many nerve tissues.

7. A 27-year-old woman involved in a car accident is brought into the emergency department. Her magnetic resonance imaging (MRI) reveals that she has a laceration of the spinal cord at the L4 spinal cord level. Which of the following structures would you expect to be intact?

- (A) Dorsal horn
- (B) Lateral horn***
- (C) Ventral horn
- (D) Gray matter
- (E) White matter

The answer is B. The lateral horns are found in the gray matter of the spinal cord between T1 and L2 and also between S2 and S4. Therefore, the lateral horns are absent at the L4 spinal cord level.

TASK №3

The brain. General survey. Parts of the brain. The rhomencephalon. The medulla oblongata

1. A patient with disturbed cerebral circulation has problems with deglutition (swallowing). What part of brain was damaged? (2008)+

- A. Myelcephalon**
- B. Pons
- C. Mescephalon
- D. Diencephalon
- E. Cervical part of spinal cord

TASK №4

The metencephalon: the pons and cerebellum

1. A 50-years old patient was injured on the occipital region of the head. The close skull trauma was diagnosed. She was taken to the hospital. The medical examination: deregulation of walking and balance, trembling of arms. What part of brain was injured?

- A. The medulla oblongata
- B. The interbrain
- C. The cerebellum**
- D. The mind-brain
- E. The spinal cord

2.. During work a patient gets tired quickly. In upright position with closed eyes he staggers,

loses balance. The tonus of skeletal muscle is reduced. Which structure of brain is injured most probably? (2005)

- A. Cerebellum.**
- B. Limbic system.
- C. Basal ganglions.
- D. Precentral gyrus of cortex.
- E. Thalamus.

3. As a result of craniocerebral trauma a patient reveals the following symptoms: intension tremor, dysmetry, adiadochokinesis and dusarthria. What structure of the brain is injured? (2006)+

- A. Motor cortex
- B. Cerebellum**
- C. Striatum
- D. Black substance
- E. Pale sphere

TASK №5

The fourth ventricle. The rhomboid fossa. The projection of the nuclei of the cranial nerves

1. Occlusive syndrome develops in case of liquor tracts blockade on the level of the middle and lateral ventricle apertures. Into which space is liquor outflow complicated?+_

- A. Third ventricle.
- B. Lateral ventricles.
- C. Aqueduct of cerebrum.
- * D. Subarachnoid space.
- E. Fourth ventricle.

TASK №6

The mesencephalon: parts, external and internal structure and function

1. A patient with tumor in the area of superior tubercles of quadrigeminal plate has lost papillary reflex. This is most probably caused by disfunction of the following nucleus of cranial nerve: (2009)

- A. Motor nucleus of of accessory nerve
- B. Accessory nucleus of oculomotor nerve
- C. Motor nucleus of oculomotor nerve
- D. Motor nucleus of abducent nerve
- E. Motor nucleus of trochlea nerve

2. The patient has involuntary movement, violated muscular tonus. The disorder of the rubrospinal tract was revealed. Which part of the brain is the nucleus ruber located in?+

- A. Myelencephalon
- B. Pons
- C. Mesencephalon**
- D. Diencephalon
- E. Telencephalon

TASK №7

The prosencephalon. The diencephalon. The hypothalamo- hypophysial system.

- 1. The growth of a tumor in the cavity of the third ventricle of brain caused such vegetative disorders as sleep disturbance, disorder of thermoregulation, all kinds of metabolism, diabetes insipidus. The irritation of nuclei of what part of the brain caused these symptoms? +**
 - A. Medulla oblongata.
 - B. Cerebral peduncles.
 - C. Mesencephalic tegmentum.
 - D. Pons.
 - E. Hypothalamus.**

- 2. A 35 year old patient complains about permanent thirst, poor appetite. He drink 9 l water per day. Daily diuresis is increased, urine is colourless, its relative density is 1,005. The most probable cause of this pathology is damage of: (2009)**
 - A. Hypothalamic nuclei**
 - B. Kidney
 - C. Adenohypophysis
 - D. Epiphysis
 - E. Neurohypophysis

TASK №8

The telencephalon: rhinencephalon, basal ganglia

- 1. Microosmic animals, a human being among them, have a more or less reduced analyzer. Which analyzer is this?**
- A. Visual analyzer .
 - B. Auditory analyzer
 - C. Olfactory analyzer**
 - D. Statokinetic analyzer
 - E. Gustatory analyzer

TASK №9

The telencephalon: the white matter of the hemispheres, the lateral ventricles

- 1. After a stroke (cerebral hemorrhage) a patient does not have voluntary movements of muscles of head and neck. Brain examination with the help of NMR detected that hematoma is in the knee of the internal capsule. Which conduction tract has been damaged?+**
 - A. Corticonuclear.**
 - B. Corticospinal.
 - C. Corticothalamic.
 - D. Frontopontine.
 - E. Thalamocortical.

- 2. During the patient's examination it was found that his deafness is not related to ear pathology. but had a cortical origin. In what part of the internal capsule of the brain is the acoustic pathway situated?**
 - A. Anterior limb
 - B. Knee
 - C. Anterior part of the posterior limb
 - D. Middle part of the posterior limb

E. Posterior part of the posterior limb

3. As a result of injury of the internal capsule in its posterior limb the patient had a disturbance of the sensitivity at the opposite side of the body (hemianesthesia). Which tract is injured?+
- A. Corticonuclear.
 - B. Corticospinal.
 - C. Corticothalamic.
 - D. Frontopontine.
 - E. Thalamocortical.**

TASK №10

The telencephalon: the pallium. Morphological basis of the dynamic localization of the functions in the cerebral cortex

1. After a craniocerebral trauma skin sensitivity is reduced. Which part of the cerebral cortex might be damaged?+
- *A. Postcentral gyrus.**
 - B. Occipital part.
 - C. Cingulate gyrus.
 - D. Frontal part of cortex.
 - E. Precentral gyrus.
2. A 63-year-old patient applied to a neuropathologist complaining of inability to perform woodwork which demands accuracy, as his right hand had been doing a lot of errant movements for 3 months. Examination showed that the patient had injured:+
- A. Angular gyrus.
 - B. Precentral gyrus.
 - C. Postcentral gyrus.
 - D. Superior temporal gyrus.
 - E. Supramarginal gyrus.**
3. A hemorrhage in the occipital lobe (calcarine sulcus zone) has appeared. Which functions of organism are violated?+
- A. Movements are absent.
 - B. Hearing is absent.
 - C. Olfaction is absent.
 - * D. Vision is absent.**
4. A patient after a brain blood supply disturbance lost the ability to write letters and figures. In what lobe of the brain was the pathology?
- A. Occipital.
 - * B. Frontal.**
 - C. Temporal.
 - D. Parietal.
 - E. Insula.
5. After a craniocerebral trauma a 47-year-old man appealed with complaints of impossibility of exact movements of the upper extremities: he can not button, light a match, pour water into a glass. Examination has shown that muscle strength, deep muscular sense, and mechanisms of coordination are preserved. Which site of cerebral cortex has been affected?

- *A. **Supramarginal gyrus.**
 - B. Calcarine sulcus.
 - C. Precentral gyrus.
 - D. Temporal gyri.
 - E. Angular gyrus.
6. A 35-year-old man has a sharp hearing injury after meningoencephalitis. Examination excludes sound-conducting and sound-perceiving apparatus pathology. Which gyrus of brain is damaged?
- A. Angular.
 - B. Middle temporal.
 - C. Superior frontal.
 - D. Supramarginal.
 - *E. **Superior temporal.**
8. A 45-year-old patient had a severe brain blood circulation disturbance. After stabilization of the general condition he is unable to pronounce words distinctly. Damage of what area of cerebral cortex caused the impairment of the speech-motor center?
- A. Angular gyrus.
 - *B. **Inferior frontal gyrus.**
 - C. Supramarginal gyrus.
 - D. Precentral gyrus.
 - E. Superior temporal gyrus.
9. After a cerebral hemorrhage (hemorrhagic stroke) a patient could pronounce words with a big effort (motor aphasia). Which convolution of brain was injured?
- A. Superior frontal.
 - B. Middle frontal
 - *C. **Inferior frontal.**
 - D. Superior temporal.
 - E. Inferior temporal.
10. A patient had a cranial trauma that resulted in sight loss. What area of cerebral cortex was injured? (2008)
- A. Frontal
 - B. Parietal and temporal
 - C. Parietal
 - *D. **Occipital**
 - E. Temporal
11. The cerebral hemorrhage led to the motor aphasia (the loss of ability to pronounce words). What cortex center of the hemispheres of the brain was injured?
- A. Supramarginal gyrus.
 - B. Posterior part of the middle frontal gyrus.
 - C. Precentral gyrus.
 - *D. **Posterior part of the inferior frontal gyrus..**
 - E. Angular gyrus.
12. The cerebral hemorrhage led to the motor agraphia (disturbance of writing ability). What cortex center of the hemispheres of the brain was injured?
- A. Supramarginal gyrus.
 - *B. **Posterior part of the middle frontal gyrus.**
 - C. Precentral gyrus.

- D. Posterior part of the inferior frontal gyrus..
- E. Angular gyrus.

TASK №11

The conducting pathways of two-way connections with the brain (sensory projecting pathway)

1. The person lost the general skin sensitivity on the right half of the body. Which tract is damaged?
 - A. Tractus corticospinalis
 - B. Tractus ganglio-spino-thalamo-corticalis**
 - C. Tractus rubrospinalis
 - D. Tractus ganglio-bulbo-thalamo-corticalis
 - E. Tractus spino-tectalis

2. The person does not feel his body and own movement. Which tract is damaged?
 - A. Tractus corticospinalis
 - B. Tractus ganglio-spino-thalamo-corticalis
 - C. Tractus rubrospinalis
 - D. Tractus ganglio-bulbo-thalamo-corticalis**
 - E. Tractus spino-tectalis

TASK №12

The conducting pathways of two-way connections with the brain (motor projecting pathway)

1. As a result of a traffic accident a victim sustained an injury of the spinal column. Examination has shown the right-side paralysis of the lower extremity with muscles tone increase. Which part of the central nervous system was injured?
 - A. Right corticospinal tract.**
 - B. Anterior horn of spinal cord.
 - C. Posterior horn of spinal cord.
 - D. Anterior funiculus of spinal cord.
 - E. Medulla oblongata.

2. After a long-term chronic disease of the brain a patient has involuntary movements, violated muscular tonus. Which conduction tract disorder do these symptoms indicate?+
 - A. Tractus tectospinalis.
 - B. Tractus corticospinalis.
 - C. Tractus corticonuclearis.
 - D. Tractus spinothalamicus lateralis.
 - * E. Tractus rubrospinalis.**

3. During examination of a patient there was found a neoplasm in the white substance of cerebral hemispheres with localization in the knee and frontal part of posterior crus of internal capsule. Fibers of what conductive tract of the brain will be disrupted? (2006)
 - A. Tr.pyramidalis**
 - B. Tr.frontopontinus
 - C. Tr.parietoccipitopantinus
 - D. Tr.thalamocorticalis
 - E. Tr.frontothalamicus

4. In answer to a sudden noise or visual impulse a person makes reflex movements. What conductive pathway is responsible for performing this reflex movement?
- A. **Tractus tectospinalis.**
 - B. Tractus corticospinalis.
 - C. Tractus corticonuclearis.
 - D. Tractus spinothalamicus lateralis.
 - E. Tractus rubrospinalis.

TASK №13

The reticular formation of the brain stem. The limbic system

1. The woman complained that her husband become very wicked. Examination has shown that patient has tumor in the region of centre of aggression. Which nucleus is damage?+
- A. Red nucleus
 - B. Caudatate nucleus
 - C. **Amygdaloid body**
 - D. Putamen
 - E. Globus pallidus
2. The patient lost the memory. Which nucleus is damage?+
- A. Caudatate nucleus
 - B. Amygdaloid body
 - C. Putamen
 - D. Globus pallidus
 - E. **Hippocampus**

TASK №14

The meninges of the brain and spinal cord. The cerebrospinal fluid

1. A 41-year-old patient was admitted to an infectious department with fever. Objectively there are meningeal symptoms. Which anatomical formation must a needle penetrate taking a spinal puncture?
- A. **Spatium subarachnoideum.**
 - B. Spatium subdurale.
 - C. Spatium epidurale.
 - D. Cavum trigeminale.
 - E. Cisterna cerebellomedullaris.
2. A 40-years old woman was admitted to the infectious disease department with high body temperature. Objectively: marked meningeal symptoms. A spinal cord puncture was made. What anatomical formation was punctuated?
- A. Spatium epidurale
 - B. Cavum trigeminale
 - C. Cisterna cerebellomedullaris posterior
 - D. Spatium subdurale
 - E. **Spatium subarachnoideale**

3. For diagnostic purposes it is necessary to make the puncture of the subarachnoid space of the brain. What is the biggest cistern of the subarachnoid space do you know?
- A. Lateral cistern
 - B. Cerebellomedullary cistern**
 - C. Interpeduncular cistern
 - D. Chiasmatic cistern
 - E. Prepontine cistern
4. After the brain contusion the patient developed the disturbance of the cerebrospinal fluid secretion. Where is the cerebrospinal fluid formed?
- A. The sinuses of the dura mater
 - B. The arteries of the brain
 - C. The pia mater
 - D. The arachnoid mater
 - E. The choroid plexuses of the brain ventricles**

SENSORY ORGANS

TASK №15

The organ of vision. The eyeball

1. A 28-year-old patient got a factory chemical burn of the face, a fluid got into the eye. The consequence is the loss of sight. Which eyeball structure was injured as a result of chemical burn?
- A. Vitreous body.
 - B. Lens.
 - * C. Cornea.**
 - D. Retina.
2. A 40-year-old man, who burnt an eyeball 2 weeks ago, was admitted to an ophthalmologic department. Which of the listed eye structures suffered?
- A. Lens.
 - B. Ciliary body.
 - C. Iris.
 - * D. Cornea.**
 - E. Vitreous body.
3. A 35-year old patient complained of vision reduction. Accommodation disorder, dilated pupil, not reacting on the light were revealed on examination. Function of what muscles is disturbed?
- * A. Pupil narrowing muscle, ciliary**
 - B. Lateral rectus muscle, pupil narrowing
 - C. Inferior oblique muscle, ciliary
 - D. Pupil dilating muscle, ciliary
 - E. Pupil narrowing and dilating muscle
4. After an injury a patient got pupils' diameter dilation and papillary reflex disorder. Which muscle has been blocked?++
- A. Musculus ciliaris.
 - * B. Musculus sphincter pupillae.**

- C. Musculus dilatator pupillae.
- D. Musculus rectus superior.
- E. Musculus rectus inferior.

5. **A 25-year old patient complained of the decreased vision. Accommodation disorders, dilated pupil, lack of reaction for the light, were revealed on examination. What muscle function is disturbed?**
- A. Lateral rectus muscle, pupil narrowing
 - B. Pupil narrowing muscle, ciliary**
 - C. Pupil dilating muscle, ciliary
 - D. Pupil narrowing and dilating muscle
 - E. Inferior oblique muscle, ciliary

TASK №16

The accessory structures of the eye

1. **A patient got a craniocerebral trauma that resulted in right-side convergent strabismus. Which muscle of the eye is damaged?**
- A. Superior rectus muscle
 - B. Inferior rectus muscle
 - C. Lateral rectus muscle**
 - D. Medial rectus muscle
 - E. Superior oblique muscle
2. **A doctor examined a victim of the road accident and revealed damage of the lateral wall of the eye socket. The patient has lost ability to abduct the eyeball on the affected side. Which muscle is damage?**
- A. Superior rectus muscle
 - B. Inferior rectus muscle
 - C. Lateral rectus muscle**
 - D. Medial rectus muscle
 - E. Superior oblique muscle

TASK №17

The visual tracts. III,IV,VI pairs of the cranial nerves

1. **A patient has visual impairment: sectoranopia of the medial field of vision on the right and the lateral field of vision on the left. Which part of the visual analyzer has pathological changes?**
- A. Left optic tract.
 - B. Right optic tract.**
 - C. Optic chiasm.
 - D. Right optic nerve.
 - E. Left optic nerve.
2. **A 75-year-old patient is admitted to an ophthalmological department with complaints of visual impairment. Objectively there is an encephaloma in the site of the left visual tract. What disorders of vision will be observed? +**
- A. Sectoranopia in the left half of retina of both eyes.**
 - B. Sectoranopia in the right half of retina of both eyes.
 - C. Sectoranopia in both halves of the left eye.

- D. Sectoranopia in both halves of the right eye.
- E. Sectoranopia in retina of both eyes.

3. The patient lost the nasal half of the visual field of the eye. During angiography the aneurysm (dilatation) of the internal carotid artery within the cavernous sinus is revealed. What part of the optic pathway is damaged?

- A. The optic nerve;
- B. The lateral border of the optic chiasma;**
- C. The medial border of the optic chiasma;
- D. The optic tract.
- E. The optic center

4. A hemorrhage in the occipital lobe (calcarinum sulcus zone) has appeared. Which functions of organism are violated?

- A. Movements are absent.
- B. Hearing is absent.
- C. Olfaction is absent.
- D. Vision is absent.**

5. A patient has appealed with complaints of visual impairment accompanied by blepharoptosis, impossibility to lift the eyeball upwards and to the middle. Examination has shown that the eyeball is diverted outside, the pupil is dilated, does not react to light, the patient can't see at a short distance. Which nerve has been injured?

- A. Trochlear.
- *B. Oculomotor.**
- C. Abducent.
- D. Optic.
- E. Trigeminal.

6. A patient with epidemic encephalitis has uni- or bilateral ptosis (blepharoptosis), divergent strabismus, accommodation disorder, mydriatic pupils. The nuclei of what pair of cranial nerves have been affected?+

- *A. III.**
- B. IV.
- C. V.
- D. VI.
- E. VII.

7. After a cold a patient had incomplete eyeball abduction. Which nerve was injured? +

- A. Facial.
- B. Glossopharyngeal.
- C. Trochlear.
- D. Optic.
- E. Abducent.**

8. Examination of pupillary reflex has shown asthenocoria. Which nucleus function is damaged?

- * A. Accessory nucleus of oculomotor nerve.**
- B. Nucleus of trochlear nerve.
- C. Nucleus of abducent nerve.
- D. Nucleus of superior tubercles of tectum of mesencephalon.

E. Nucleus of oculomotor nerve.

9. After a cranial trauma with the damage of the superior wall of the right eyesocket a patient lost the possibility to lift up the upper eyelid of the right eye and look up. Which nerve was damaged?

- A. N. ophthalmicus.
- B. R. inferior n. oculomotorius.
- C. N. trochlearis.
- D. N. abducens.
- * E. R. superior n. oculomotorius.**

10. A patient has the convergent squint and diplopia (double vision). There is an inability to direct the affected eye laterally. Which nerve is damaged?

- A. The oculomotor nerve.
- B. The trochlear nerve.
- C. The abducens nerve.**
- D. The ophthalmic nerve
- E. The facial nerve.

11. A patient got a craniocerebral trauma that resulted in right-side convergent strabismus. Damage of which craniocerebral nerve caused consequences?

- F. N. abducens**
- G. N. oculomotorius
- H. N. facialis
- I. N. trigeminus
- J. N. trochlearis

12. Computer tomography of the brain revealed a tumor at the base of the brain. One of the clinical symptoms is the loss of the lateral visual field of the both eyes. What brain structures happened to be injured in this pathology?

- A. The optic nerve;
- B. The lateral border of the optic chiasma;
- C. The medial border of the optic chiasma;**
- F. The optic tract.
- G. The optic center

TASK №18

The organ of hearing and gravitation. The external and middle ear

1. After a 2-years old child has had flu, there appeared complaints about ear ache. A doctor revealed hearing impairment and inflammation on the middle ear. How did the infection penetrate into the middle ear?

- A. Through canalis caroticus
- B. Through canalis nasolacrimalis
- C. Through atrium mastoideum
- D. Through foramen jugularis
- E. Through the auditory tube**

- 2. Inflammation of the tympanic cavity (purulent otitis media) was complicated by inflammation of mammillary process sockets. What wall of tympanic cavity did the pus penetrate into the sockets through? (2008)**
- A. Anterior
 - B. Superior
 - C. Medial
 - D. Lateral
 - E. Posterior**
- 3. An 8-year-old boy with purulent otitis has the infection spread from the tympanic cavity into the bulb of internal jugular vein. Such complication develops in case of one of the tympanic cavity walls thinning. What wall is it?**
- A. Medial.
 - B. Superior.
 - *C. Inferior.**
 - D. Lateral.
 - E. Anterior
- 4. A patient complained about ear noise and pain sensations. Objectively: the patient has acute respiratory disease, rhinitis. The infection penetrated into the tympanic cavity through the following opening of the pharynx:**
- A. Aperture of larynx
 - B. Fauces
 - C. Tympanic opening of the auditory tube
 - D. Pharyngeal opening of the auditory tube**
 - E. Choanae
- 5. The perception of sound was examined in patient by means of tuning fork. When the tuning fork was near the auricle patient did not hear the sound. When the tuning fork was on the mastoid process patient heard the sound. Which part of the auditory system is damaged?**
- A. Cochlear nerve
 - B. Inferior colliculi of the lamina tecti
 - C. Internal ear
 - D. Middle ear**
 - E. Medial geniculate body

TASK №19

The organ of hearing gravitation. The internal ear

- 1. A 60-year old patient has reduced perception of high-frequency sounds. What structures disorder of auditory analyzer caused these changes?**
- A. Eustachian tube
 - B. Main membrane of cochlea near helicotrema
 - C. Muscles of medial ear
 - D. Tympanic membrane
 - E. Main membrane of cochlea near the oval window**
- 2. According to audiometry data a patient has a disturbed perception of medium-frequency sound. It might have been caused by a damage of: (2007)**
- A. Spiral ganglion

- B. Cochlear nuclei
- C. Quadritubercular structure
- D. Middle part of cochlea**
- E. Lateral geniculate bodies

3. In an experiment on an animal the upper part of the cochlea of the internal ear is ruined. Perception of which type of sound is disturbed ?
- A. High-frequency sounds
 - B. Medium-frequency sounds
 - C. Low-frequency sounds**
 - D. All types of sound
 - E. Perception of sound is not disturbed

TASK №20

The auditory and statokinetic analysers

1. In an experiment on an animal electric activity of spiral ganglion neurons is registered. It allows to analyze afferent impulsion from certain receptors are these?
- A. Macula of utricle
 - B. Macula of saccule
 - C. Corti's organ**
 - D. Semicircular canals
 - E. Vestibule
2. Under the action of an irritant an animal's neurons activity of the spiral ganglion increased. What irritant was it?
- A. Light
 - B. Sound**
 - C. Rotation
 - D. Touch to the skin
 - E. Muscle strain

CRANIAL NERVES

TASK №21

XI, XII pairs of the cranial nerves

1. A patient was admitted to a neurological department with deflection of the tongue to the side when extruded, atrophic changes of the half of the tongue, logopathy, deglutitive problem. Which nerve was damaged?
- A. Vagus.
 - B. Lingual.
 - C. Chorda tympani.
 - D. Glossopharyngeal.
 - * E. Hypoglossal.**
2. The superior jugular bulb thromboses could exert the pressure on the nerves, which pass through the anterior compartment of the jugular foramen. Name these nerves.+
- A. the glossopharyngeal and vagus nerves;
 - B. the glossopharyngeal, vagus and hypoglossal nerves;
 - C. the vagus, accessory and hypoglossal nerves;
 - D. the glossopharyngeal, vagus and accessory nerves.**
 - E. The hypoglossal nerve

TASK №22

X pair of the cranial nerve

1. A 27-year-old patient with Marfan's syndrome has an aneurysm of the aortic arch. This may compress which of the following structures?

- (A) Right vagus nerve
- (B) Left phrenic nerve
- (C) Right sympathetic trunk
- (D) Left recurrent laryngeal nerve**
- (E) Left greater splanchnic nerve

The answer is D. The left recurrent laryngeal nerve loops around the arch of the aorta near the ligamentum arteriosum, whereas the right recurrent laryngeal nerve hooks around the right subclavian artery. All other nerves are not closely associated with the aortic arch.

TASK №23

IX pair of the cranial nerve

1. A man of 45 appealed to a clinic complaining of sensitivity loss in the back of posterior one-third of the tongue. The function of which pair of cranial nerves was affected?

- A. VIII.
- B. X.
- C. IX.**
- D. V.
- E. XII.

TASK №24

VII pair of the cranial nerve

1. Which nerve is damaged, if the right nasolabial fold is smoothed, right orbital fissure is dilated (it cannot be screwed up because eyelids don't close), difficulties arise while talking and eating (food sticks between the cheek and teeth)?

- A. N. trigeminus dexter.
- B. N. abducens dexter.
- C. N. glossopharyngeus sinister.
- D. N. vagus dexter.
- E. N. facialis dexter.**

2. A patient has lacrimation and increased salivation. In combination with other symptoms this state is considered to be an irritation of fibers of a cranial nerve. Which nerve is this, and what fibers are these?

- A. Parasympathetic fibres of facial nerve.**
- B. Parasympathetic fibres of oculomotor nerve.
- C. Somatic motor fibres of oculomotor nerve.
- D. Parasympathetic fibres of vagus nerve.

E. Somatic motor fibres of facial nerve.

- 3. During a surgical operation on the parotid gland the surgeon should be careful because the fibres of the parotid plexus may be damaged. Which nerve forms the parotid plexus?**
- A. **The facial nerve;**
 - B. The trigeminal nerve;
 - C. The glossopharyngeal nerve;
 - D. The vagus nerve.
 - E. The hypoglossal nerve.
- 4. Patient is unable to close the lips and eyelid on the right side. He is unable to whistle, to blow a wind instrument, or to chew effectively. Food and saliva dribble out that side of the mouth or collects in the vestibule. Expressive lines in the facial skin are obliterated. The eye on the affected side is not lubricated. Which nerve is damage?**
- A. The trigeminal nerve;
 - B. **The facial nerve;**
 - C. The glossopharyngeal nerve;
 - D. The vagus nerve.
 - E. The hypoglossal nerve
- 5. As a result of the trauma a patient has got dysfunction of lacrimal gland. Which nerve is responsible for its secretion?**
- A. N. occipitalis minor
 - B. N. auricularis magnus
 - D. **N. petrosus major**
 - C. N. petrosus minor
 - E. Chorda tympani
- 6. A patient has dislocation of his mandible that caused impairment of salivation and gustatory sensitivity of the anterior 2/3 of his tongue. Which nerve is damage?**
- A. Sublingual nerve
 - B. Deep petrosal nerve
 - D. Greater petrosal nerve
 - C. Lesser petrosal nerve
 - E. **Chorda tympani**

TASK №25

V pair of the cranial nerve

- 1. A patient complains to the neurologist that he has no skin sensitivity in the area of the forehead. The injury of which nerve can cause this condition?**
- A. **The ophthalmic nerve;**
 - B. The maxillary nerve;
 - C. The mandibular nerve;
 - D. The facial nerve.
 - E. The oculomotor nerve
- 2. After his visit to an ophthalmologist a patient complains of frequent conjunctivitis. Which nerves innervate the conjunctiva of the eye?**

- A. The branches of the ophthalmic nerve;**
 - B. The branches of the optic nerve;
 - C. The branches of the facial nerve;
 - D. The branches of the oculomotor nerve.
 - E. The branches of the trochlea nerve.
- 3. A patient lost the sensitivity of the tongue to pain and temperature. Name the nerve transmitting the impulses of the general sensitivity from the mucous membrane of the anterior 2/3 of the dorsum of the tongue.**
- A. The glossopharyngeal nerve;
 - B. The vagus nerve;
 - C. The lingual nerve;**
 - D. The chorda tympani.
 - E. The hypoglossal nerve
- 4. A patient complains to the neurologist that he has no skin sensitivity in the temporal region and below the mouth. The injury of which nerve can cause this condition?**
- A. The ophthalmic nerve;
 - B. The maxillary nerve;
 - C. The mandibular nerve;**
 - D. The facial nerve.
 - E. The vagus nerve.
- 5. A patient has right-side fracture and a hemorrhage (haematoma) in the area of anterior third of his lower jaw, loss of skin sensitivity in the area of his chin. What nerve was damaged? (2008)**
- A. Inferior alveolar nerve**
 - B. Mental nerve
 - C. Mylohyoid nerve
 - D. Buccal nerve
 - E. Superior alveolar nerve