MINISTRY OF HEALTHCARE OF THE RUSSIAN FEDERATION
State Government-Funded Educational Institution of Higher Professional Education
«NORTHERN STATE MEDICAL UNIVERSITY»
of Ministry of Healthcare of the Russian Federation

METHODOLOGICAL GUIDELINES FOR STUDENTS

CourseNeurology and neurosurgery

2024

Theme of the class: <u>Motor analyzer, anatomy, physiology. Central and peripheral paralysis. Levels of closure of segmental reflexes.</u>

Purpose: to ensure the assimilation of the fundamentals of knowledge on the analysis of the motor analyzer and the topical diagnosis of motor disorders.

Tasks

1. Determine the muscle tone
2. Call the main reflexes: "bicipital", "tricipital", knee, achilles, plantar, abdominal.
3. Check for pathological signs.
4. Evaluate the strength of muscles.
5. For motor disorders, localize the lesion in the nervous system.

2. Basic definitions to be mastered by students during studying of the topic (list of notions). The concept of reflexes, the concept of the segment of the spinal cord. The structure of the cortical-muscle path, the central and peripheral paralysis, the defeat of the motorway at various levels.

Methods for the study of the motor sphere.

3. Questions for the class studies

1. Number of segments of the spinal cord by department and their projection on the spine.
2. The main parts of the cortex of the cerebral hemispheres, the main sections of the cerebral hemispheres and the brain stem.
3. Structure of the cortical part of the motor analyzer.
4. The process of the processes of the central motor neuron.
5. Localization of the bodies of the second neurons in the spinal cord and trunk.
6. The process of appendages of peripheral neurons.
7. Concept of the motor unit.
8. Clinic of affection of central and peripheral neurons.
9. An arc of tendon and skin reflexes.
10. Localization of motor disorders depending on the site of the lesion of the motor analyzer.
11. Differences in the symptoms of loss and irritation of the motor analyzer.
12. Determination of muscle strength in points

4. Questions for self-assessment

1. How does the size of the anterior horn of the spinal cord vary along its length?
2. Where there are crosses of cortical-spinal and cortical-nuclear pathways?
3. Pathophysiology of clinical differences between central and peripheral paralysis?
4. Which of the pathological signs are absolutely pathological?
5. Which reflex is the basis of the nodding signs?
6. What is a nervous shock (diasis)?
7. How musculature is projected in the cerebral cortex?
8. If the paretic arm cannot "tear" away from the bed, but only moves along the horizontal plane, then what is the muscle strength in the proximal parts?

5.Compulsory and supplementary literature on the theme

1. Main literature

1.Gusev E. I. Neurology and Neurosurgery [Electronic resource]: a textbook in 2t. / EI Gusev, AN Konovalov, VI Skvortsova; . - Moscow: GEOTAR-Media, 2015.
T. 2: Neurosurgery. - Moscow: GEOTAR-Media, 2015. - 408 p. : pic. - ISBN 9785970409091 Access mode: http://www.studmedlib.ru/
2. Gusev EI Neurology and Neurosurgery [Electronic resource]: a textbook in 2 volumes /, EI Gusev, AN Konovalov, VI Skvortsova; Ed. A. N. Konovalov. - Moscow: GEOTAR-Media, 2015.
T. 1: Neurology. - Moscow: GEOTAR-Media, 2015. - 640 p. : pic. - ISBN 9785970411285
3. Manipal Manual of Surgery [Text] / ed.: K.R Shenoy, A. Nileshwar. - 3th. ed. - New Delhi : CBS Publishers & Distributors, 2010. - 969 p. : il. - Index: p.963-969. - ISBN 978-81-239-1893-8 (binding)
4. Lindsay, Kenneth W..
Neurology and neurosurgery illustrated / K. W. Lindsay, I. Bone, G. Fuller. - 5th ed. - Edinburgh ; London ; New York : Elsevier Churchill Livingstone, 2010. - 600 p. : il. - Index: p. 567-600. - ISBN 978-0-443-06978-9. - ISBN 978-0-443-06957-4
5.Shaya, M.
Neurosurgery Rounds: Questions and Answers. [Электронныйресурс] / M. Shaya, C. Gragnanielllo, R. Nader. - 2nd ed. - [Б. м.] : Thieme, 2017. - Режимдоступа: https://medone-education.thieme.com/ebooks/2189942?fromSearch=true#/ebook_2189942_SL82955502
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7. Rohkamm, R.
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8. Borsody, M.
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9. Bahr, M.
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10.Mattle, H.
Fundamentals of Neurology: An Illustrated Guide. [Электронныйресурс] / H. Mattle, M. Mumenthaler, E. Taub. - 2nd ed. - [Б. м.] : Thieme, 2017. - Режимдоступа: https://medone-education.thieme.com/ebooks/2140767?fromSearch=true#/ebook_2140767_SL81776030
11.Agarwal, N.
Neurosurgery Fundamentals [Электронныйресурс] / N Agarwal. - 1st Edition. - [Б. м.] : Thieme, 2018. - Режимдоступа: https://medone-education.thieme.com/ebooks/2369525#/ebook_2369525_SL88934455

2. additional literature

1. Gusev, Evgeniy Ivanovich. Neurology and neurosurgery: in 2 v. [Text]: Textbook. for med. EI Gusev, AN Konovalov, VI Skvortsova T.2: Neurosurgery. -Moscow: GEOTAR-Media, 2010.

2. Gusev, Evgeniy Ivanovich. Neurology and neurosurgery: in 2 v. [Text]: Textbook. for med. EI Gusev, AN Konovalov, VI Skvortsova T.1: Neurology. -Москва: GEOTAR-Media, 2010. -612 p. with pic.
3. Skoromets, AA Topical diagnosis of diseases of the nervous system [Electronic resource] / A.A. Skoromets, A.P. Skoromets, T.A. Skoromets. - 8 th ed., Rev. and additional - SPb. : 2012. - 623 c.- Access mode: http://www.studentlibrary.ru/book/.
4. Petrukhin, A.S. Neurology [Electronic resource] / A.C. Petrukhin, K.V. Voronkova, I.D. Lemeshko. - GEOTAR-Media, 2013. - Access mode: http: //www.studentlibrary.ru/book/.
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7.Mumenthaler, M.
Neurology. [Электронныйресурс] / M. Mumenthaler, H. Mattle, E. Taub. - 4th ed. - [Б. м.] : Thieme, 2003. - Режимдоступа: https://medone-education.thieme.com/ebooks/2152114?fromSearch=true#/ebook_2152114_SL82056560
8.Карпов, С. М.
Topical diagnosis of diseases of the nervous system = Топическая диагностика заболеваний нервной системы [Электронный ресурс] : учебник на английском и русском языках / С. М. Карпов, И. Н. Долгова. - Москва : ГЭОТАР-Медиа, 2018. - 896 с. - Режим доступа: http://www.studentlibrary.ru/book/ISBN9785970445013.html

6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
The major parts of the cerebral cortex, the main parts of the cerebral hemispheres and the brain stem	a summary of primary sources and other educational literature;
The structure of the cortical part of the motor analyzer.	study of educational material (on the abstracts of lectures, educational and scientific literature) and preparation of reports in clinical practical exercises, to participate in thematic discussions
Symptoms of central and peripheral paralysis.	search and review of scientific publications and electronic sources of information, preparation of a conclusion on the review
The defeat of the motorway at various levels.	writing abstracts, presentations Preparation of a clinical case with a presentation.
For all questions of the lesson	work with tests and questions for self-examination

Theme of the class:*Sensitive analyzer, anatomy, physiology. Types and types of sensitivity disorders. Brown-Sekar Syndrome. Cranial nerves 2, 5 pairs (anatomy, lesion clinic)*

Purpose of the lesson:

Purpose: to study the conductive ways of surface and deep sensitivity, to master methods of research of various types of sensitivity and pain syndromes.

Tasks:

1. To learn to study the superficial (painful, temperature, tactile) and deep (joint-muscular feeling, feeling of vibration, pressure, weight, kinesthetic) sensitivity, complex kinds of sensitivity (stereotype, two-dimensional sense, localization).

1. Be able to draw a scheme of sensitivity disorders

2. By the nature and localization of the sensitivity disorder, determine the lesion.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Receptors. The path of superficial and deep sensitivity. Somatic-topical projection in cortical areas of analyzers and in conducting systems. Types and variants of sensitivity disorders.

Defeat of the sensitive path at various levels. Classification of pain syndromes.

3. Questions for the class studies

1. What is the classification of receptors?
2. What is the difference between the concepts of "sensitivity" and "reception"?
3. Where are the proprioceptors and what is their functional significance?
4. In what tissues and organs are interoceptors located and what is their functional significance?
5. In what tissues are exteroceptors located and what is their functional significance?
6. What types of sensitivity are superficial, deep and complex?
7. Where is the cell body of the first sensitive neuron located? the second? the third?
8. In which departments of the cortex are the projection zones of general sensitivity presented?
9. In which parts of the spinal cord are the conductors of pain and temperature sensitivity?
10. In which parts of the spinal cord are the conductors of deep sensitivity?
11. What is the essence of the law of the eccentric arrangement of longer conductors in the spinal cord (the law of Flatau)?
12. What conductors formed a medial loop?
13. In which part of the inner capsule are the sensory pathways located?
14. What types of sensitive disorders are different depending on the level of damage?
15. What kind of sensitivity disorders occur when the peripheral nerve is affected?
16. What is the clinical picture characteristic of hitting the posterior roots?
17. Which localization of the focus in the spinal cord, there are violations of sensitivity by segment and conductor type?
18. What are the clinical manifestations of disorders of sensitivity in the lesion of half of the spinal cord?
19. What kind of sensitivity disorder occurs when the visual throat and inner capsule are affected?

20. What are the sensitivity disorders that are characteristic of the posterior central gyrus injury?
21. List all the options for sensitivity disorders.
22.If the defeat of which parts of the brain is an tactile amnesia?
23. What is local anosognosia and when it affects which structures it occurs?
24. In what localization of the process is a violation of the body scheme?
25. What is somatalgia and sympathalgia? What is the pathophysiological nature of pain?
26. Which afferent systems are involved in the formation of pain syndrome?
27. What is the essence of the concept and pathogenesis of the "trigger" zones?
28. What are the clinical manifestations and pathogenesis of "phantom pains"?
29. How are Zakharin-Ged zones formed?
30. What is the generally accepted classification of sensitivity disorders?
31. Is there a classification of pain and what is it?
32.Which localization of the pathological focus occurs peripheral type of sensitivity disorder?
33. In what localization of the lesions occur disorders of sensitiveness in a conductive type?
34. To which variant of sensitivity disorders is the symptom of "gloves," socks "?
35. To which variant of sensitivity disorders is the symptom of a "semi-jacket"?
36.How is surface sensitivity studied?
37.How is the study of deep sensitivity?
38.How are the complex types of sensitivity studied?
39.How are the symptoms of Lasega, Neri, landing syndrome, Wasserman, and Mackiewicz examined?
40. Establish a topical diagnosis (tasks).

4. Questions for self-assessment

Tasks of the first level

1. Which of the following symptoms is not characteristic of hitting the posterior roots?
1) Pain, 2) Dissociated sensitivity disorder, 3) Violation of deep sensitivity, 4) Impaired surface sensitivity.
2. Indicate where the intersecting paths of deep sensitivity intersect?
1) Anterior gray spike, 2) Oblong brain, 3) Horny body, 4) Pons varolii
3. Which of the following symptoms is not characteristic of the lesion of the inner capsule?
1) Hemianopsia, 2) Hemianesthesia, 3) Hemiataxia, 4) Hyperpathia
4. Which of the following symptoms is not typical for the defeat of the thalamus?
1) Hemianopsia, 2) Dissociated sensitivity disorder, 3) Hemiataxia, 4) Hyperpathy
5. Indicate the defeat, which of the listed formations does not lead to a violation of the conductor-type sensitivity?
1) Lateral columns of the spinal cord, 2) Half of the diameter of the spinal cord, 3) Back roots, 4) The defeat of the entire diameter of the spinal cord.
6. Which of the following symptoms is not characteristic for the damage to the horse's tail?

1) Pain, 2) Anesthesia on the lower extremities and in the perineum, 3) Spastic paraplegia of the lower extremities, 4) Violation of the functions of the pelvic organs
7. Which of the following symptoms is not characteristic of the lesion of the intervertebral ganglion?
1) Loss or decrease of all sensitivities, 2) Pain, 3) Dissociated sensitivity disorder in the region of the corresponding segments 4) Eruptions of herpetic vesicles in the region of the respective segments.
8. Which of the following types of sensitivity does not apply to surface sensitivity?
1) Painful, 2) Temperature, 3) Discriminatory, 4) Tactile
9. Which of the following types of sensitivity does not apply to the posterior column?
1) Vibration sensitivity, 2) Proprioception, 3) Pain sensitivity, 4) Pressure feeling
10. Which of the following types of sensitivity does not apply to complex sensitivity?
1) Stereognosis, 2) Discriminative sensitivity, 3) Two-dimensional - spatial feeling, 4) Proprioceptive sensitivity.
11. Where are the cells of the second neuron of surface sensitivity?
1) the front horn; 2) the rear horn; 3) the front gray spike; 4) the nuclei of Gaul and Burdach.
12. Where are the cells of the second neuron of deep sensitivity?
1) the rear horn; 2) the medulla oblongata, 3) the medial loop, 4) the thalamus.
13. In what kind of cords is the main spinothalamic pathway?
1) front, 2) rear, 3) lateral.
14. Where are the conductors of deep sensitivity, through which impulses from the lower extremities and the lower part of the trunk are transmitted?
1) lateral cords, 2) Gaull's bundle, 3) Burdach's bundle, 4) posterior horn
15. Where does the sensitive path pass in the brainstem?
1) the base, 2) the cerebellum worm, 3) mesencephalic tegmentum,
16. Where is the sensitive way in the inner capsule?
1) the front thigh, 2) the knee, 3) the front two thirds of the hind femora, 4) the back third of the hind femora.
17. Which of the following features is not characteristic of the radicular type of sensitivity disorder?
1) girdle pain, 2) irradiating pains, 3) shingles, 4) loss of all types of sensitivity by segment.
18. Which of the following characteristics is characteristic of segmental-dissociated type of sensitivity disorder?
1) loss of all sensitivities by segments, 2) spontaneous pain, 3) painfulness during palpation of the radicular zone, 4) loss of pain and temperature sensitivity by segments.
19. Which of the following is characteristic of a conductive type of surface sensitivity disorder?
1) violation of surface sensitivity by segments, 2) soreness of nerve trunks, 3) violation of pain and temperature sensitivity on the side of lesion in the zone of all underlying segments, 4) violation of pain and temperature sensitivity on the side opposite to the outbreak in the zone of all lower segments.

20. Which of the following is characteristic of a conductor type of deep-sensitivity disorder?
1) soreness of nerve trunks, 2) signs of tension, 3) violation of deep sensitivity on the side opposite to the focus, 4) disturbance of vibration sensitivity on the side of the focus in the underlying segments.
21. Which anatomical formations do not include the path of surface sensitivity?
1) the thalamocortical path, 2) the spinotalamic pathway, 3) the back cord, 4) the back third of the posterior femur of the inner capsule, 5) the medial loop.
22. Which anatomical formations do not include the path of deep sensitivity
1) the posterior third of the posterior femur of the inner capsule, 2) the nuclei of Gaul and Burdach, 3) the thalamocortical path, 4) the spinotalamic pathway, 5) the medial loop.
23. Indicate, in lesions, which parts of the nervous system are sensitized ataxia?
1) posterior horns of the spinal cord, 2) lateral cord, 3) posterior columns, 4) temporal lobe.
24. Where in the precentral gyrus is the foot projected?
1) lower-external surface, 2) medium-external surface, 3) medial surface
25. Which of the following features is typical for the polyneuric variant of peripheral type of sensitivity disorders?
1) monoanesthesia, 2) hemianesstasia, 3) hyperpathia, 4) anesthesia in the distal parts of the limbs, 5) allocheiria
26. Which segment of the spinal cord innervates the inner surface of the hand?
1) C_5 2) C_6 3) C_7, 4) C_8
27. Which segment of the spinal cord corresponds to the level of the nipple?
1) Th_7, 2) Th_5, 3) C_8, 4) Th_2
28. Which segment of the spinal cord corresponds to the level of the navel?
1) Th_7, 2) Th_{10}, 3) L_1, 4) Th_{12}
29. Which segment of the spinal cord corresponds to the level of the inguinal fold?
1) Th_5, 2) Th_{10}, 3) L_1, 4) Th_{12}
30. At the level of the body of a vertebra, the cone of the spinal cord ends?
1) Th_{11}, 2) Th_{12}, 3) L_1, 4) L_2

5.Compulsory and supplementary literature on the theme

1. Main literature

1.Gusev E. I. Neurology and Neurosurgery [Electronic resource]: a textbook in 2t. / EI Gusev, AN Konovalov, VI Skvortsova; . - Moscow: GEOTAR-Media, 2015.
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2. additional literature

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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
The path of superficial and deep sensitivity	a summary of primary sources and other educational literature;
Somatotopical projection in cortical areas of analyzers and in conducting systems. Types and variants of sensitivity disorders. Defeat of the sensitive path at various levels.	the development of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports in seminars and practical exercises, to participate in thematic discussions
Classification of pain syndromes.	writing abstract
For all questions of the lesson	work with tests and questions for self-examination

Theme of the class: *Cranial nerves 3, 4, 6, 7, 8, 9, 10 pairs (anatomy, lesion clinic). Bulbar and pseudobulbar syndromes.*

The purpose of the lesson: to study the anatomy and symptoms of the lesion of the cranial nerves. To master the technique of studying the cranial nerves.

Tasks:

1. To learn to study the state of the olfactory, visual, auditory, vestibular and taste analyzers.
2. Be able to identify the presence of nystagmus, determine its nature, amplitude and degree
3. To investigate the functions of the group of oculomotor cranial nerves (to reveal paresis of the eyes, diplopia, anisocoria, to investigate the movement of eyeballs, convergence, direct and friendly reaction of pupils to light, convergence and accommodation.
4. To investigate the motor portion of the trigeminal nerve (movement of the lower jaw, tension of the masticatory muscles) and sensitive (types of sensitivity disorders on the face).
5. To investigate facial musculature, a taste disorder in the tongue and differentiate the central and peripheral paralysis of the facial nerve.
6. To be able to study the caudal group of CN (articulation, dysphagia, phonation, deviation of the tongue, act of breathing, hypotrophy of the muscles of

the tongue and fibrillar twitching in the muscles of the tongue, soft palate mobility and tongue deflection).

7. Recognize alternating syndromes

8. Interpret the results of the surveys and determine the level of damage.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

The structure of the main parts of the brainstem (medium brain, variolium bridge, oblong brain, base, tire, roof). Alternating syndromes (peduncular, pontine, bulbar).

Cranial nerves

• Olfactory nerve: the course of the nerve impulse from the receptors to the cerebral cortex

Symptoms of defeat are hyposmia, anosmia.

• Optic nerve .. Symptoms of damage to the spectator analyzer at various levels: retina, nerve, chiasmus, tract, thalamus, fasciola fascia, occipital lobe of the brain. Disturbance of visual acuity, color perception, visual fields. Pathology of the optic disc (stagnant nipple of the optic nerve, primary and secondary atrophy of the optic nerve).

• Oculomotor, diverting and blocky nerves, symptoms of nerve damage: strabismus, diplopia, ptosis, anisocoria, mydriasis, restriction of eyeballs movement, paresis of convergence and accommodation. The reflex arc of the pupil's reaction to light.

• Ternary nerve: the course of the nerve impulse from the receptors to the cortex. Types of sensitivity disorders on the face. Innervation of the masticatory muscles and its violation.

• Facial nerve. Features of the cortical-nuclear pathway. Central and peripheral prosoplegia is a difference. The defeat at various levels: the hemisphere of the brain, the trunk, the rootlet (syndrome of the cerebellar angle), high and low nerve damage in the canal of the facial nerve, after exposure to the canal.

• Auditory and vestibular nerves: the course of the nerve pulse from the receptors to the cortex. The defeat of the nerve at various levels.

• Glossopharyngeal and vagus nerves: the course of the nerve impulse for the motor, sensitive and autonomic part of the nerve. Bulbar and pseudobulbar palsy.

• The sublingual nerve. Features of the cortical-nuclear pathway. Central and peripheral paralysis

3.Questions to the class studies

1. What are the cerebral nerves related to motor ?
2. What are the cerebral nerves related to mixed?
3. Which cranial nerves are sensitive
4. Describe homonymous and heteronymous hemianopsia, under what localization of the process they arise.
5. What functions are provided by the oculomotor nerve, the diverting and block?
6. What nuclei of the oculomotor nerve provide the reaction of the pupil to light, convergence and accommodation?

7. In which section of the brain stem are the nuclei of the eye-motor nerve, block and recessive?
8. Where do CN originate on the basis of the brain?
9. What are the mechanisms of development of convergent and divergent strabismus?
10. Where is the motor nucleus of the trigeminal nerve?
11. Where are the sensitive nuclei of the trigeminal nerve located?
12. What are the options for sensitivity disorders on the face?
13. What functions are provided by the motor portion of the trigeminal nerve?
14. In which part of the brain stem is the nucleus of the facial nerve and what functions are provided for them?
15. What is the peculiarity of the cortical-nuclear path of the facial nerve?
16. What is the difference in the clinical picture of central and peripheral paralysis of the nerve 7, as well as 12 ЧМН?
17. What clinical picture is typical for bulbar and pseudobulbar paralysis?
18. Describe the reflexes of oral automatism.

4. Questions for self-assessment

Tasks of the first level:

1. In which area of the brain stem are the nuclei of the oculomotor nerve located?
1). Pons varolii. 2). Cerebral peduncle. 3). Medulla oblongata
2. In which area of the brain stem are the nuclei of the abduction nerve?
1). Pons varolii. 2). Cerebral peduncle. 3). Medulla oblongata
3. Specify, with the defeat of which pair of CN ptosis is observed?
1). VI, 2). V, 3). III.
4. Indicate with the defeat of which pair of CN is not affected by strabismus?
1). III, 2). XII, 3). VI, 4). IV
5. Indicate, in case of defeat, which pairs of CN dysphagia occurs?
1). V, 2). VII, 3). X, 4). XI.
6. Indicate, with defeat, which pairs of CN arises dysarthria?
1). IV, 2). VII, 3). XII, 4). XI.
7. Indicate, in case of defeat, which pairs of CN diplopia does not occur?
1). III, 2). VII, 3). VI, 4). IV
8. Indicate which nerve provides the innervation of the sphincter of the pupil?
1). III, 2). VI, 3). IV
9. Indicate, with defeat, which pairs of CN does lagophthalmos appear?
1). V, 2). VII, 3). X, 4). XI.
10. Which of the following signs are not characteristic for lesion of the facial nerve?
1). Smoothness of frontal and nasolabial folds. 2). Lagophthalmos. 3). Hyperacusis. 4). Lagophthalmos. 5). Dysphagia.
11. Indicate, in defeat, which cores of the oculomotor nerve occurs mydriasis?
1). Large-celled. 2). Small cell. 3). The core of Perlia.
12. Which of the following signs are not characteristic for the lesion of the oculomotor nerve?
1). Mydriasis, 2). Ptosis, 3). Diplomacy, 4). Restricting the movement of the eyeball upward, 5). Restricting the movement of the eyeball outside.

13. Indicate, with defeat, which pairs of CN dysphonia occurs?
1). X, 2). VII, 3). XII, 4). XI
14. What symptoms are not characteristic of bulbar paralysis?
1). Absence of pharyngeal reflex, 2). Peripheral paresis of the sublingual nerve, 3). Dysphonia, 4). Symptoms of oral automatism, 5). Dysarthria.
15. When a nerve is affected, the deviation of the lower jaw is observed aside?
1). V, 2). VII, 3). X, 4). XI
16. Indicate which pair of CN is innervated by mimic muscles?
1). V, 2). I, 3). VII, 4). XI
17. Indicate which nucleus of CN has a one-sided cortical innervation?
1). XI, 2). VI, 3). V, 4). XII
18. What symptoms are not characteristic of pseudobulbar paralysis?
1). Dysphagia, 2). Dysarthria, 3). Dysphonia, 4). Atrophy and fibrillar twitching of the tongue.
19. At what alternating syndrome are signs of defeat of the XII pair of CN?
1). Fauville Syndrome, 2). Weber's syndrome, 3). Jackson's Syndrome
20. At what alternating syndrome are signs of defeat of the third pair of CN?
1). Fauville Syndrome, 2). Weber's syndrome, 3). Jackson's Syndrome
21. At what alternating syndrome are signs of affection of the VII pair of CN?
1). Weber's syndrome, 2). Jackson's syndrome, 3). Miyar-Gubler syndrome.
22. At what location of the pathological focus are there signs of Weber's syndrome?
1). Oblong brain, 2). The middle brain, 3). Pons.
23. At what location of the pathological focus are there signs of Jackson syndrome?
1). Oblong brain, 2). The middle brain, 3). Pons.
24. At what location of the pathological focus are the signs of the syndrome Miyar-Gubler syndrome?
1). Oblong brain, 2). The middle brain, 3). Pons
25. What muscles innervates the block-shaped nerve?
1). External rectus muscle, 2). Lower rectus muscle, 3). Upper oblique muscle.
26. What muscles innervate the abducent nerve?
1). External rectus muscle, 2). Lower rectus muscle, 3). Lower oblique muscle.
27. Where is the pathological focus that caused the bitemporal hemianopsia?
1). The visual tract, 2). Thalamus, 3). Internal fibers of chiasma, 4). Anterior tubercles are quadruple.
28. Where is the pathological focus that caused the bitemporal hemianopsia?
1). The visual tract, 2). Thalamus, 3). External fibers of chiasma, 4). Anterior tubercles are quadruple.
29. Which of the following symptoms is not characteristic of the lesion of the visual tract?
1). Homonymous hemianopsia, 2). Absence of pupillary reflex, 3). Heterogeneous gmias, 4). Atrophy of the nipple of the optic nerve.
30. If any of the listed CNs are not affected, hypogesy is not observed?
1). VII, 2). XII, 3). IX

5.Compulsory and supplementary literature on the theme

1. Main literature

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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
The structure of the main parts of the brainstem (medium brain, pons, oblong brain, base, operculum,tectum). Alternating syndromes (peduncular, pontine, bulbar).	a summary of primary sources and other educational literature;
Cranial nerves	the development of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports in seminars and practical exercises, to participate in thematic discussions
For all questions of the lesson	work with tests and questions for self-examination

Theme of the class: ***Higher mental functions. Complexof symptoms of lesions of the lobes of the brain. Methods of examination. Extrapyramidal system (anatomy). Clinical manifestations of cerebellar lesion and subcortical structures.***

The purpose of the lesson: to study the structural and functional basis of higher mental functions, to master the methods of neuropsychological examination of patients with diseases of the nervous system. To study structural and functional characteristics, lesion syndromes and methods of investigation of extrapyramidal system and cerebellum, to establish a topical diagnosis for the revealed violations.

Tasks

1. Learn to assess gait, motor activity, the speed of various movements, posture, speech, patient's handwriting
2. To be able to study the function of the cerebellum with the help of special samples.
3. To be able to identify types of hyperkinesis, variants of 'Davidenkov' syndrome.
4. To issue the topical diagnosis for the revealed violations of the extrapyramidal nervous system and the cerebellum.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Qualitative (obscuration, confusion) and quantitative (stunning, coexist, coma) disturbances of consciousness. Pseudomatous conditions. Destructive and metabolic comas. Chronic vegetative state, brain death.

Physiology of wakefulness and sleep. Violations of wakefulness and sleep: insomnia, parasomnia, hypersomnia.

Anatomic-physiological features of the cortex of the cerebral hemispheres. . Localization of individual functions in the cortex of the cerebral hemispheres. Primary, secondary and tertiary cortical fields. The concept of functional asymmetry of the cerebral hemispheres. The concept of higher mental (mental) functions is gnosis, praxis, speech, reading, writing, counting, attention, memory and intelligence.

Types of agnosia: visual, auditory, olfactory agnosia, tactile amnesia, anosognosia, autotopagnosia.

Speech disorders: motor, sensory, amnestic aphasia.

Types of apraxia: motor,ideatorial, constructive.

Methodology of the study of the HMF.

Extrapyramidal system - posterior and medial parts of the frontal lobes, thalamo-strio-pallidar complex, knolls of the quadruple, red nucleus, black substance, reticular formation, vestibular nuclei, lower olive, gamma system in the spinal cord. The relationship between pyramidal and extrapyramidal systems. Participation of the extrapyramidal system in the organization of movements through regulation of the posture, muscle tone and stereotyped movements. The role of neurotransmitters of the extra-pyramidal system (dopamine, GABA, acetylcholine).

The main pathological syndromes of destruction of extrapyramidal system (hypotonic-hyperkinetic and hypokinetic-hypertonic). Variants of parkinsonism syndrome and hyperkinesis.

Structural and functional features of the cerebellum. Afferent and efferent connections of the cerebellum with various parts of the spinal cord and brain. Somato-topical projection in the cerebellum, syndromes of cerebral hemispheres and cerebellum involvement. The involvement of the cerebellum in the organization of arbitrary and involuntary movements.

Levels of regulation of muscle tone - segmental-peripheral, supra-segmental, cerebellovestibular, red nuclei, pallidarny, striatal, cortical. Characteristics of the species in the destruction of muscle tone.
Features of cerebellar disorders in various neurological diseases.

3.Questions to the class studies

1. What is the localization of the centers of the VFT in the cerebral cortex?
2. What is the modern concept of functional asymmetry of the cerebral hemispheres?
3. What role is assigned to the reticular formation of the brain stem in the regulation of sleep and the level of consciousness?
4. What is the classification of mental disorders?
5. What coma, depending on the severity of the patient's condition, are known?
6. What paraclinical methods are used to diagnose brain death?
7. What are the manifestations of insomnia and parasomnia?
8. At what location of the lesion is observed Jackson epilepsy?
9. What is the difference between aphasia and dysarthria?
10. In which parts of the cerebral cortex are affected, there are motor, sensory and amnestic aphasias?
11. Name the methods of investigating expressive speech.
12. What are the methods of investigating an impressive speech?
13. What is the symptomatology of sensory aphasia?
14. What is included in the concept of motor aphasia?
15. What is the symptomatology of amnestic aphasia?
16. Name the parts of the cortex of the brain, with the defeat of which there is agnosia.
17. What definition exists for the term "agnosia"?
18. What types of agnosia are known?
19. What is apraxia?
20. What are the methods of investigating praxis?
21. What is agra and when does it arise?
22. Which anatomical formations belong to the striopallidal system?
23. What formations of the striopallidal system are considered phylogenetically more ancient?
24. What formations does a neostriatum share in a person? Paleostriatum?
25. What are the functional connections of the striopallidal system?
26. What are the main clinical pathological syndromes of damage to the extrapyramidal system?
27. What is hyperkinesis and what clinical variants of hyperkinesis are known?
28. What diseases of the nervous system can cause hyperkinesis?
29. What changes in muscle tone can occur in hyperkinesis?
30. Are there any special techniques for detecting hidden hyperkinesis
31. How does the torsion spasm manifest? facial hemispasm? paraspasm? Blepharospasm?
32. What are the clinical manifestations of chorea? hemiballism? athetosis?
33. What are the symptoms of Parkinson's syndrome?

34. What special techniques are used to identify early stages of Parkinson's disease?
35. How does muscle tone change in Parkinson's syndrome?
36. How do the speed of motor reactions change, mimicry, gestures, friendly movements in parkinsonism?
37. How does the gait change in patients with Parkinsonism and Hyperkerkinesis?
38. What is propulsion, lateropulsion, retropulsion?
39. How does handwriting change in patients with Parkinsonism and Hyperkinesis?
40. What is the difference between tremor and brain damage from tremor in Parkinson's syndrome?
41. Decipher the symptoms of parkinsonism, termed by the terms "aheyrokinesis", " bradylalia ", "micrography", "paradoxical kinesia", "propulsions".
42. What is the difference between hypertonicity in parkinsonism syndrome from hypertonicity in central paralysis?
43. Which nuclei of the cerebellum are located in its hemispheres and worm?
44. What are the conductive pathways of impulses to the cerebellar cortex?
45. In what efferent ways is the impulse transmitted from the cerebellum to the spinal cord?
46. With what formations of the brain and spinal cord is the cerebellum bound?
47. What are the main clinical signs of brain damage?
48. What conductive ways form the upper, middle and lower legs of the cerebellum?
49. What clinical methods can be used to study the functional state of the cerebellum?
50. What speech disorders occur when the cerebellum is affected?
51. How does handwriting change when the cerebellum is affected?
52. What are the symptoms and on which side of the affected cortex-bridge-cerebellar path?
53. What is the difference between cerebellar ataxia and sensitization?
54. Establish a topical diagnosis (tasks).

4. Questions for self-assessment

Tasks of the first level

1. Which of the following symptoms occurs when the anterior central gyrus cells are irritated?

1). Metamorphopsy, 2). Jackson epilepsy, 3). "Verbal Salad"

2. What symptom is not characteristic for defeat and irritation of anterior central gyrus?

1). Monoparesis, 2). Hemiparesis, 3). Jackson epilepsy

3. What type of aphasia is not characteristic of paraphasia?

1). Motor aphasia, 2). Amnestic aphasia, 3). Sensory aphasia

4. What study is not used to characterize motor aphasia?

1). Automated speech, 2). Repeated speech, 3). Understanding simple instructions, 4). Independent Speech

5 .. Where is the localized lesion in motor aphasia?

1). The temporal lobe, 2). Occipital lobe, 3). Frontal lobe

6. Where is the focus of the lesion with sensory aphasia?

1). The dark share, 2). The temporal lobe, 3). Frontal lobe

7. Which of the following signs is not typical for motor aphasia?

1). Violation of the articulation of sounds and phonemes, 2). "Verbal Salad", 3). Violation of switching from one sound to another.

8. What symptom is not characteristic for hitting the posterior central gyrus?

1) Monoanesthesia, 2). Hemiparesis, 3). Jackson epilepsy

9. Which of the following is not characteristic of sensory aphasia?

1). Non-distinction of phonemes, 2). "Verbal Salad", 3). Violation of switching from one sound to another.

10. Which symptom is not characteristic for the lesion of the left frontal lobe?

1). Motor aphasia, 2). Ataxia, 3). Violation of the psyche, 4). Pseudomelia

11. What symptom is not characteristic for lesion of the left temporal lobe?

1). Ideal apraxia, 2). Sensory aphasia, 3). Anosmia

12. What symptom is not characteristic for the defeat of the occipital lobe?

1). Anosognosia, 2). Quadrant hemianopsia, 3). Photopsy

13. To defeat which of the following zones is not typical of apraxia?

1). Lower parietal lobe, 2). The angular gyrus, 3). Islet, 4). The antemotor cortex

14. In what form of aphasia does the telegraphic style become?

1). Motor aphasia, 2). Amnestic aphasia, 3). Sensory aphasia

15. Which of the listed functions is not impaired in the lesion of the left frontal lobe?

1). The letter, 2). Reading, 3). Expressive speech

16. What kind of aphasia is characterized by a lack of understanding of complex logical and grammatical constructions?

1). Motor aphasia, 2). Amnestic aphasia, 3). Sensory aphasia

17. Which of the following is not characteristic of alexia?

1). Violation of reading aloud, 2). Violation of spontaneous writing, 3). Can not read the story

18. Which of the following is not characteristic of acalculia?

1). Violation of writing numbers, 2). Violation of the pronunciation of numbers, 3). Violation of the reading of numbers, 4). Automatic account violation

19. If a portion of the brain is damaged, do patients experience sensations that have already been seen or never seen?

1). The dark share, 2). Occipital lobe, 3). Frontal lobe, 4). The temporal lobe

20. Which of the following terms does not apply to the types of disturbances in the body scheme?

1). Pseudomelia, 2). Autotopognosis, 3). Agnosia on the face

<u>Tasks of the first level</u>

1. Which of the listed anatomical formations does not belong to the extrapyramidal system?

A. Precentral area of the cortex, B. Basal ganglia, V. Cerebellum, D. Islet

2. Which of the following symptoms is not characteristic of parkinsonism?

A. Rigidity of muscles, B. Intentional tremor, V. Tremor, G. bradylalia.

3. Which of the following symptoms is not characteristic of a cerebellar worm?

A. Nystagmus, B. Intensive tremor, V. Hypotonicity of muscles, G. Ataxia of the trunk.
4. What kind of disruption of coordination of movements occurs when a cerebellar worm is affected?
A. Static ataxia, B. Dynamic ataxia, B. Sensitive ataxia
5. What speech disorder occurs when the pallido-nigral system is affected?
A. Dysartria, B. Slow, monotonous, V. Scanning, G. Aphonia
6. How is gait violated when the pallid-nigral system is affected?
A. Spastic, B. Spastic-atactic, V. Hemiparetic, G. Shuffle, small steps
7. Indicate what speech disorders occur when the cerebellum is affected?
A. Dyslalia, B. Aphonia, V. Scandalized speech, G. Bradylalia
8. Which of the following names does not apply to hyperkinesis?
A. Chorea, B. HCemiballism, V. bradylalia, G. Torsion spasm, D. Myoclonia.
9. Which of the following samples is not used to detect static violations?
A. Romberg test, B. Babinsky test , V. diadochokinesia, G. Flank gait
10. With which of the following samples can not be found intentional tremor?
A.Finger-nasal, B. Pointing, V. Stewart-Holmes, G. The heel-knee
11. Indicate what speech disorders occur when the pallid-nigral system is affected, the frontal and temporal lobes?
A. Scandalized speech, B. Aphonia, V. dysarthria, G. bradylalia
12. What kind of psyche is called "frontal".
13. The main distinguishing features of motor and sensory aphasia.

5.Compulsory and supplementary literature on the theme

1. Main literature
1.Gusev E. I. Neurology and Neurosurgery [Electronic resource]: a textbook in 2t. / EI Gusev, AN Konovalov, VI Skvortsova; . - Moscow: GEOTAR-Media, 2015.
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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
Extrapyramidal system. The main pathological syndromes of damage to the extrapyramidal system (hypotonic-hyperkinetic and hypokinetic-hypertonic). Variants of parkinsonism syndrome and hyperkinesis.	a summary of primary sources and other educational literature;
Structural and functional features of the cerebellum.	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Features of cerebellar disorders in various neurological diseases	Abstract, the preparation of a specific situation
For all questions of the lesson	work with tests and questions for self-examination

Theme of the class: ***Vascular diseases of the brain (etiology, pathogenesis, clinic of acute disturbance of cerebral circulation (ADCC) and DE clinic)***

The purpose of the lesson: to ensure the assimilation of the basics of knowledge on the pathology of the circulation of the central nervous system, etiology, pathogenesis and clinical manifestations of the main nosological forms.
Tasks:
1. For clinical symptoms, determine the affected vascular pool.
2. Determine the severity of stroke on cerebral and focal manifestations.
3. Provide differential diagnosis of the nature of the stroke
4. Check the malar Bechterew ‘s symptom.
5. Determine the stage of dyscirculatory encephalopathy.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Prevalence of ADCC. Blood supply to the brain. Regulation of cerebral blood flow. Classification of ADCC. Etiology, pathogenesis and clinic ADCC (transient disorders of cerebral circulation, cerebral strokes). Generalized symptomatology. Focal neurological symptoms in the defeat of the main cerebral arteries. Etiology, pathogenesis and clinic of dyscirculatory encephalopathy.

3. Questions for the class studies
1. The course of the carotid and vertebral arteries to the Willis circle.
2. Pools of blood supply of the main cerebral arteries.
3. Features of cerebral metabolism.

4. Variants of the structure of the Willis circle.
5. Regulation of cerebral blood flow: humoral, nervous.
6. Limits of autoregulation of cerebral blood flow and situations in which they may change.
7. The duration of the anoxia period that the brain can "survive".
8. General cerebral symptoms: the causes of the occurrence of strokes and dyscirculatory encephalopathy, the clinic.
9. Focal symptoms in the defeat of the main cerebral arteries: middle, anterior, posterior, basilar and posterior-inferior cerebellar arteries.
10. Difference focal simtomov with ischemic and hemorrhagic strokes.
11. Classification of disorders of cerebral circulation.
12. Etiology, pathogenesis and clinic of acute forms of cerebral circulation disorders: TDCC, strokes.
13. Sources of embolism in embolic stroke.
14. The most characteristic places of hemorrhages in the brain with hemorrhagic strokes.
15. Differential diagnosis of the nature of stroke
16. Etiology, pathogenesis and clinic of various forms of dyscirculatory encephalopathy (atherosclerotic, venous).

4. Questions for self-assessment

Tasks of the first level:

1. Indicate which of the listed symptoms is not characteristic of a cerebral vascular crisis?

1). Headache, 2). Dizziness, 3). Nausea or vomiting, 4). Hormetonic syndrome, 5. Short-term frustration of consciousness

2. Indicate which of the following symptoms is not characteristic of an ischemic attack in the carotid basin?

1). Mono- or hemiparesis, 2). Aphasic disorders, 3). Jackson's epilepsy, 4). Altering Syndrome

3. Indicate which of the listed symptoms is not typical for ischemic attack in the vertebrobasilar basin?

1). Dysarthria, 2). Aphasia, 3). Systemic dizziness, 4). Visual disorders, 5). Nystagmus,

4. Indicate which of the listed symptoms is not characteristic of cerebral stroke in the basin of the middle cerebral artery?

1). Monoplegia of the foot, 2). Hemiplegia, 3). Motor aphasia, 4). Astereregnosis

5. Indicate which of the listed symptoms is not characteristic for the ONMC in the basin of the middle cerebral artery?

1). Amnestic aphasia, 2). Astasia - abasia, 3). Grasping reflex, 4). Mental disorders

6. Indicate which of the following symptoms is not characteristic of hemorrhagic stroke?

1). Xanthochromic liquor, 2). Local disturbances in brain electrical activity, 3). Leukocytosis with a shift to the left in a blood test, 4). Hearth of increased density on CT

7. Indicate which of the listed diagnostic methods is more informative in the acute period of hemorrhagic stroke?

1). Duplex investigation of the vessels of the neck, 2). CT of the brain, 3). MRI of the brain

8. Indicate which of the following symptoms are not characteristic of subarachnoid hemorrhage?

1). Cerebral symptoms, 2). Meningeal symptoms, 3). Subfebrile temperature 4). Colorless, clear liquor

9. Indicate for which ADCC in which basin is characterized by optic-pyramidal syndrome?

1). External carotid artery, 2). Vertebral artery, 3) Internal carotid artery

10. Indicate for which basin's ADCC the Wallenberg-Zakharchenko syndrome is characteristic?

1). Middle cerebral artery, 2). Vertebral artery, 3) Internal carotid artery

11. Indicate what definition can be synonymous with the term "minor stroke"?

1). Transient ischemic attack, 2). A stroke in which the restoration of the affected functions occurs within the first three weeks of the acute episode of the ADCC, 3). Stroke, in the patient retains speech and mimicry functions

12.Diagnosis of a transient cerebral circulation disorder is established if the focal cerebral symptomatology undergoes a complete regression during:

a) 1 day
b) 1 week
c) .2 weeks
d) 1 month

13. For embolism of cerebral arteries is characteristic:

a) gradual development of focal neurological symptoms
b) edema of the optic nerve disk on the side of the embolism
c) the presence of cerebral symptoms
d) meningeal symptoms

14. For subarachnoid hemorrhage, a mandatory feature is:

a) loss of consciousness
b) pupillary disorders
c) meningeal syndrome
d) pathological reflexes

15. In case of circulatory disturbance in the vertebral-basilar artery, there arises:

a) sensorimotor syndrome
b) apathy abulia syndrome
c) vestibulocerebellar
d) autotopagnosia syndrome

16. With a stroke in the basin of the posterior cerebral artery, the typical symptom is the presence of:

A. Banazal hemianopsia
B. homonymous hemianopsia
B. Concentric narrowing of the field of view
G. Bithemporal hemianopsia.

17. For ischemic stroke in the basin of the middle cerebral artery the following clinical manifestations are characteristic:

a) alternating syndrome Valenberg-Zakharchenko
b) motor aphasia, hemiparesis, hemigipesthesia
c) Bulbar syndrome
d) ataxia, nystagmus
18. Diagnosis of transient disturbance of cerebral circulation is established if focal cerebral symptoms are subjected to complete regression during:
a) 1 day
b) 1 week
c) .2 weeks
d) 1 month

5.Compulsory and supplementary literature on the theme

1. Main literature
1.Gusev E. I. Neurology and Neurosurgery [Electronic resource]: a textbook in 2t. / EI Gusev, AN Konovalov, VI Skvortsova; . - Moscow: GEOTAR-Media, 2015.
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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
Blood supply to the brain. Regulation of cerebral blood flow. Classification of ADCC.	a summary of primary sources and other educational literature;
Etiology, pathogenesis and clinic ADCC (transient disorders of cerebral circulation, cerebral strokes)	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical

	classes, to participate in thematic discussions
General cerebral symptoms. Focal neurological symptoms in the defeat of the main cerebral arteries. Etiology, pathogenesis and clinic of dyscirculatory encephalopathy.	Abstract, preparation of a specific situation
For all questions of the lesson	work with tests and questions for self-examination

Independent work should be systematic The results of independent work are monitored by the teacher and are taken into account when attending the student (test, exam). At the same time: testing, express-questioning at seminars and practical classes, hearing reports, checking written works.

Theme of the class: *Vascular diseases of the brain (diagnosis and treatment of transient disorders of cerebral circulation, cerebral strokes and dyscirculatory encephalopathies).*

The purpose of the lesson: to ensure the mastering of the knowledge base on the diagnosis and treatment of vascular diseases of the central nervous system.

Tasks:

1. Conduct a neurological examination of a patient with ADCC and discirculatory encephalopathy.
2. To assign a sequence of methods for examining patients with transient impairments of cerebral circulation, cerebral strokes and dyscirculatory encephalopathy.
3. Interpret data of echoencephalography, CT and MRI of the brain.
4. Interpret the Doppler "curves".
5. To designate treatment (differentiated and undifferentiated) in the acute period of cerebral stroke.
6. To prescribe the treatment of dyscirculatory encephalopathy.
7. Determine the indications for surgical treatment of cerebrovascular diseases.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Diagnostic methods used to assess the morphological state of the brain, its blood supply and functional state. Treatment of ADCC (non-differential and differentiated), treatment of discirculatory encephalopathy. Prevention of ADCC.

3. Questions for the class studies

1. Methods of research used to diagnose the state of blood supply to the brain (Doppler, conditions of fundus of eye, angiography).

2. Diagnostic methods used to study the morphological state of the brain (echoencephalography, CT and MRI of the brain).

3. Research methods used to determine the functional state of the brain (neurologic examination, electroencephalography, evoked potentials).

4. Physical basis, diagnostic value, indications, contraindications to the conduct of each method.
5. Assign medication to the patient in the acute period of ischemic stroke.
6. Assign medical treatment to a patient with a hemorrhagic stroke.
7. Why do nootropic drugs should be used after 4-5 days from the onset of a stroke, and not in the first hours of the disease?
8. The appointment of antihypoxic drugs (doses of drugs, indications and contraindications to the appointment of a drug)
9. Vasodilating agents-doses, indications and contraindications to the appointment.
10. Means that improve the rheological composition of blood, dosages, indications and contraindications.
11. The role of curative physical education in the treatment of patients with strokes and dyscirculatory encephalopathy.

4. Questions for self-assessment

Tasks of the first level:

1. Indicate, which of the following signs is not characteristic for hemorrhagic stroke?

    1). Xanthochromic liquor, 2). Local disturbances in brain electrical activity, 3). Leukocytosis with a shift to the left in a blood test, 4). Hearth of increased density on CT

2. Indicate which of the listed diagnostic methods is more informative in the acute period of hemorrhagic stroke?

    1). Duplex investigation of the vessels of the neck, 2). CT of the brain, 3). MRI of the brain

3. Provide the most informative studyto confirm the diagnosis of subarachnoid hemorrhage:

    a) CT
    b) EEG
    c) coagulogram
    d) investigation of cerebrospinal fluid
    e) REG

4. Contraindication for magnetic resonance imaging of the brain is:

    a) an allergy to iodine
    b) open craniocerebral injury;
    c) marked intracranial hypertension
    d) the presence of foreign metal bodies

5. Angiospasm in a patient with subarachnoid hemorrhage can be detected using:

    a) rheoencephalography
    b) angiography
    c) transcranial ultrasound dopplerography
    d) computed tomography True: In

6. The most pronounced displacement of the M-Echo signal is noted when:

    a) ischemic hemispheric stroke
    b) hemorrhagic hemispheric stroke
    c) hemorrhagic stroke in the brainstem
    d) subarachnoid hemorrhage

5.Compulsory and supplementary literature on the theme

1. Main literature

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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
Diagnostic methods used to assess the morphological state of the brain, its blood supply and functional state.	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Treatment of ADCC (nondifferential and differentiated), Drug dyscirculatory encephalopathy. Prevention of ADCC	Abstract, preparation of a specific situation
For all questions of the lesson	work with tests and questions for self-examination

Theme of the class: *Neurological complications of osteochondrosis*

Purpose of the lesson; to assimilate the bases of knowledge on the pathogenesis of neurological complications of osteochondrosis, diagnosis of their basic forms

Tasks;
1. Determine the deformation of the spine
2. Determine the volume of movements in the spine
3. Determine the tension of the paravertebral muscles
4. Determine the soreness points of spinous and transverse processes.
5. On the roentgenograms determine the main signs of osteochondrosis
6. On the basis of complaints and questioning, determine the clinical form of the disease
7. Prescribe treatment for exacerbation and chronic course of the disease
8. Give a recommendation on the treatment of osteochondrosis of the spine without exacerbation.
9. To know the basic hygienic methods of correction of professional and household activities for the prevention of exacerbations of the disease

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Osteochondrosis: pathomorphology, stages, X-ray diagnostics. Pathogenesis of the development of clinical syndromes. Local vertebral manifestations: lumbago, lumbalgia, cervicago, cervicalgia. Methods for verifying the vertebral symptom complex. Remote reflex syndromes: myotonic, vegetative-vascular, neurodystrophic. Pathogenesis. Compression syndromes: radicular, vascular. Treatment of patients with neurological manifestations of osteochondrosis of the spine.

3.Questions for the class studies

1. Stages of osteochondrosis of the spine (according to morphological changes).
2. X-ray signs of osteochondrosis of the spine according to the stages of the disease.
3. The causes (mechanisms) of the appearance of neurological symptoms
- reflex
- compression
4. Investigation of the vertebral symptom complex
- spine configuration
- volume of movements
- tension of paravertebral muscles
- soreness in palpation (awning and paravertebral points).
5. Lumbago (cervical, thoracic and lumbar)
- mechanism of appearance of symptoms
- Clinic
6. Reasons for limiting the volume of movements in the spine
7. Evaluation of the degree of scoliosis
8. The mechanism of soreness of the spinous processes and paravertebral points during palpation
9. Which formations can perform compression in the vertebral canal?

10. Why does exacerbation of chronic vertebrogenic syndromes develop subacute, unlike lumbago?
11. Why does the presence of symptoms of prolapse exclude the diagnosis of lumbago (cervicago, lumbago)?
12. Chronic vertebrogenic syndromes (cervi-, thoraco-, lumbalgia)
- mechanism of appearance of symptoms
13. Mechanisms of the appearance of extravertebral reflex symptoms: muscle
-tonic
-Vegetatory-vascular
- myodystrophic
14. Concept of cervico-cranio-brachialgia and lumbar ischialgia:
15. Mechanisms of extravertebral pain
1. neuritis pain (compression of the plexus or peripheral nerve), more often due to tunnel syndromes.
2. myofibrotic
3. vegetative-vascular
4. Reflex dermatic-muscular-sclerotomous
16. Syndrome of pear-shaped muscle, syndrome of anterior staircase (attachment points, what anatomical structures are squeezed, clinic)
17. Syndrome of vertebral artery (mechanism of blood flow insufficiency, clinic)
18. Neurological symptoms in the compression of the roots
19. Raliculopathy L5, C1 (development mechanism, clinic)

4. Questions for self-assessment
1. For a syndrome of a forward staircase muscle is characteristic:
A) Strengthening of the pain syndrome in the forearm and 2.3 fingers of the hand when turning the head to the healthy side of the arm
B) Reduction of arterial pressure on the radial artery when turning the head to a healthy side and with a deep inspiration
B) diffuse osteoporosis of the hand
D) Increased pain syndrome with the laying of a hand behind the back
2. For the syndrome of small pectoral muscle is characterized by:
A. Strengthening pain in the forearm and 2.3 fingers of the hand when turning the head to the sore side
B) Reducing blood pressure and reducing the pulse on the radial artery when turning the head to a healthy side
C) Pain on the front-outer surface of the chest with irradiation in the arm
D) vegetative-trophic disorders on the hand.

Instructions*:* *Complete the statement by inserting one missing word*

3. Herniated disc at the lumbar level can be squeezed rootlet, spinal cord and its ..... ._____ _____
4. The lumbar reflex pain syndromes include lumbago, lumbalgia and trophic disorders on the hand
5. S1 spine compression syndrome manifests itself

a) a decrease in the strength of the triceps muscles of the lower leg and flexors of the toes
b) the fall of the Achilles reflex
c) the inability to stand on the heel
d) decreased knee reflex
6. A clinical picture of the syndrome of the vertebral artery includes pain in the neck and occiput with irradiation in whiskey and eyeballs, vestibular vertigo and violations _____
7. Passive hip reduction with its rotation inside, causing pain in the gluteal region, much less often, in the area of the innervation of the sciatic nerve on the leg is a symptom of _____
8. The most common clinical forms of cervical brahialgia are: small pectoral muscle syndrome, muscle syndrome, scapula, trapezius muscle syndrome, muscle ..... muscle syndrome
9. The reflex extravertebral syndrome includes muscular-tonic syndrome, vegetative-vascular syndrome and ...._____
10. Pear-shaped syndrome is characterized by
a) increased pain in the lower leg and the foot when adjusting the thigh
b) weakening the removal and raising of the outer edge of the foot
c) pain in the groin
d) prolapse of the knee reflex
11. Clinical picture of compression of the root of L5 is manifested
a) pain along the inner surface of the leg and thigh
b) weakness of extension of 1 toe of foot
c) a decrease in the Achilles reflex
d) weakness of the quadriceps hip muscle
12. Additional tests that allow verifying the radicular character of the symptomatology of the intervertebral foramen (Sperling's symptom) and the symptom _____
13. Hernia of the intervertebral disc is most often manifested clinically
a) sciatic torticollis
b) the syndrome of the anterior staircase
c) pear-shaped muscle syndrome
d) radicular syndrome

5.Compulsory and supplementary literature on the theme

1. Main literature

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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
Osteochondrosis: pathomorphology, stages, X-ray diagnostics. Pathogenesis of the development of clinical syndromes	a summary of primary sources and other educational literature;
Local vertebral manifestations: lumbago, lumbalgia, cervicago, cervicalgia. Methods for verifying the vertebral symptom complex.	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Treatment of patients with neurological manifestations of osteochondrosis of the spine.	Abstract, preparation of a specific situation
Questions for self-control	work with tests and questions for self-examination

Theme of the class: *Diseases of the peripheral nervous system:*

The purpose of the lesson is to learn the basics of knowledge on the diagnosis and treatment of mononeuropathies and plexopathies. on diagnostics and treatment of polyneuropathy and polyradiculoneuritis ..

Tasks:
1. Draw up a plan for examining the patient with a clinic of damage to the peripheral nervous system.
2. Interpret sensitive disorders in neuropathies for the purpose of setting a topical diagnosis.
3. Apply tests to detect motor disorders in mononeuropathies.
4. Check the Tinel's symptom and the intermittent test.

5. Determine the soreness of the exit point of the trigeminal nerve.
6. Check the symptom of eyelid tremor.
7. Check the function of mimic muscles.
8. Assign treatment depending on the type and stage of neuropathy.
9. Check the soreness of the nerve trunks with polyradiculoneuritis.
10. Interpret neuromyography data
11. Assign treatment and predict the course of the disease.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

The structure of the peripheral nerve. The mechanism of impulse conduction and maintenance of nerve fiber trophism. Pathophysiological changes in neuropathies depending on the etiologic factor. The main clinical manifestations of neuropathies (radial, ulnar, median). Carpal tunnel syndrome. Etiopatogenesis and clinic of shoulder plexopathies (upper, lower, total). Etiopathogenesis and clinic of facial nerve neuropathy. Etiology and clinical picture of neuralgia of the trigeminal nerve.
Segmental, Wallerian, axonal degeneration. Polyneuropathy Etiology, pathogenesis, clinic, diagnosis and treatment of these conditions.

3. Questions for the class studies

1. Which of the shells of the peripheral nerve is, as it were, the continuation of the soft cerebral casing of the spinal cord?
2. What is the structure of the peripheral nerve?
3. What pathophysiological changes are observed in neuropathies depending on the etiologic factor?
4. What are the etiopathogenesis and the clinic of mononeuropathies (radial, ulnar, middle, peroneal nerves)?
5. What is etiopathogenesis and the clinic of shoulder plexopathy (upper, lower, total) ?.
6. Etiopathogenesis and clinical picture of neuralgia of the trigeminal nerve.
7. Etiopathogenesis and clinic of facial nerve neuropathy.
8. How long will it take to regenerate the facial, radial, peroneal nerves if they are damaged in typical zones?
9. Why does degeneration occur in the distal portion of the fiber that is distal from the site of injury?
10. Give the main differential-diagnostic criteria for mononeuropathy, plexopathy, radiculopathy.
11. Why is the facial nerve neuropathy the only tunneling neuropathy developing acutely ?. What is the role of hypothermia, infections?
12. What urgent therapeutic measures are necessary for tunneling neuropathies of the facial nerve?
13. What is the difference in the treatment of acute neuropathy of the facial nerve from the "Saturday paralysis" of the radial nerve?
14. What therapy is needed to prevent the formation and resorption of connective tissue scar in the area of nerve damage?

15. What therapeutic measures specifically will accelerate the regeneration, remyelization of the nerve fibers?
16. The main directions of restorative therapy of neuropathies.
17. Indication and timing of surgical treatment of neuropathies
18. Etiopathogenesis and clinic of acute polyradiculoneuritis.
19. Etiopathogenesis and clinic of polyneuropathy in diabetes mellitus.
20. Etiopathogenesis and clinic of chronic polyneuropathy
21. Fundamentals of electroneuromyographic diagnosis of diseases of the peripheral nervous system.
22. Shingles, clinic and treatment.
23. Why is it possible, with an ascending acute polyradiculoneuritis, even after tetraplegia, a rapid complete recovery is possible?
24. Why are polyneuropathies so polyethiologic?
25. Why is recovery of motor and sensitive disorders in polyneuropathies more often insignificant or absent?

4. Questions for self-assessment

Tasks of the first level:

1. Indicate which symptom is characteristic for the ulnar nerve lesion?
1). "The clawed paw", 2). "Monkey's paw", 3). "Hanging hand"
2. Indicate what symptom is characteristic for the defeat of the median nerve?
1). "The clawed paw", 2). "Monkey's paw", 3). "Hanging hand "
3. The most effective means in the treatment of trigeminal neuralgia is the use of:
A) corticosteroids
B) anticonvulsants
C) analgesics
D) vasodilators
4. "Hanging hand", half-bent fingers, impossibility of extension of the hand and lead of the thumb, violation of sensitivity on the outer surface of the forearm and the back surface of 1-2-3 fingers, slight swelling of the hand are observed in lesions:
A. elbow,
B. beam,
V. axillary
D. median
5. The main diagnostic criteria for neuralgia of the trigeminal nerve include complaints about:
A) prolonged pain in the angle of the eye, orbit, which are accompanied by a decrease in visual acuity
B) Short duration of a second of very severe pain attacks, which are provoked by food, light touch to face, conversation
C) persistent aching pain in half of face
D) paroxysmal pains in the eye area, teeth, jaws accompanied by lacrimation
6. For the defeat of the radial nerve is a characteristic feature:
1. The "clawed foot"
2. "Monkey's Paw"
3. "Hanging hand"

4. Arch spasm
7. The sciatic nerve consists of the fibers of the following roots:
a) C1-C2
b) L5-C3
c) C2-C3
d) A5-C5
8. Causalgia most often occurs when the following nerves are affected:
medial and tibial
9. Indicate which muscles are not innervated by the ulnar nerve?
1). Abductor of the little finger, 2). Adductor of the little finger, 3). The interosseous muscles of the wrist
10. Indicate which muscles are not innervated by the radial nerve?
1). Bronchial, 2). Supinator, 3). Round pronator, 4). The triceps brachialis muscle
11. Indicate which muscle is innervated by the median nerve?
1). Round prnator, 2). Supinator, 3). brachial, 4). The triceps shoulder muscle
12. Indicate which muscles are not innervated by the peroneal nerve?
1). Long extensor of the thumb, 2). Anterior tibia, 3). Calf
13. Indicate, with the defeat of which nerve it becomes impossible to cover the neck of the bottle with the thumb and forefinger?
1). Middle, 2). Radial, 3). The ulna
14. Indicate which of the listed nerves does not participate in leading the thumb?
1). Middle, 2). Radial, 3). The ulna
15. Indicate from which spinal nerves the brachial plexus is formed?
1). C3-C6, 2). C5 - T1, 3). C4-C8
16. Indicate which of the listed symptoms is not typical for damage to the superior primary trunk of the brachial plexus?
1). Disturbance of sensitivity on the external shoulder rupture,
2). Inhibition of the bicipital reflex,
3). Disturbance of sensation on the medial surface of the shoulder and forearm,
4). Limitation of shoulder leach
17. Indicate which of the listed symptoms is not characteristic for damage to the lower primary trunk of the brachial plexus?
1). Disturbance of sensation on the medial surface of the shoulder and forearm,
2). Positive Horner's syndrome,
3). Disturbance of sensitivity on the outer surface of the shoulder,
4). Lesion of the interosseous and vermiform muscles of the hand
18. Indicate, in the defeat of which of the indicated nerves are dropped Achilles and plantar reflexes?
1). Tibial, 2). Fibular, 3). Femoral
19. Indicate, with the defeat of which of these nerves formed "calcaneus foot"?
1). Tibial, 2). Fibular, 3). Femoral
20. Indicate the compression of which of these nerves occurs as a tunnel syndrome in the area of the Froze arcade?
1). Median, 2). Radial, 3). The ulna
21. Acute polyradiculoneuritis of Landry type differs from other polyradiculoneuritis by the following sign:
1. hyporeflexia

2. breathing disorder
3. an ascending type of appearance of paresis in the limbs
4. Disturbance of sensitivity by the type of "socks" and "gloves".
22. The main cause of development of polyneuropathy with alcoholism is a deficit:
1. carbohydrates
2. Fat
3. Vitamin B1
4. protein
23. The course of diabetes is most often complicated by development:
a) myelopathy
b) convulsive syndrome
c) polyneuropathy
d) encephalopathy
24. Diphtheria polyneuropathy is not characterized by the presence of:
A) Deep Sensitivity Disorders
B) Bulbar violations
B) Pelvic disorders
D) Violations of convergence
25. Polyneuropathies associated with a deficiency in the human body of vitamin B1, arise:
A) with pellagra
B) with chronic alcoholism
B) with leukemia
D) in porphyria
26. The following principle is based on the classification of polyneuropathies:
a) the peculiarity of the course of the disease
b) a feature of the clinical picture
c) the etiology of the disease
d) analysis of cerebrospinal fluid
27. With diphtheria polyneuropathy it is not observed:
A) bulbar disorders
B) disorders of joint-muscular sensitivity
B) pelvic disorders
28. Guillain-Barre polyneuropathy is characterized by: A. Defeat of cranial nerves, B. Pronounced pelvic disorders, B. Persistent bilateral pyramidal symptomatology, G. Severe sensitivity disorders response A
29. With the encephalopathy of Gaia-Wernicke, the following neurological symptoms are observed: ataxia, tremor,

5.Compulsory and supplementary literature on the theme

1. Main literature
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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
The main clinical manifestations of neuropathies (radial, ulnar, median).	preparation of a clinical case
The structure of the peripheral nerve. The mechanism of impulse conduction and maintenance of nerve fiber trophism. Pathophysiological changes in neuropathies depending on the etiologic factor. The main clinical manifestations of neuropathies	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Carpal tunnel syndrome. Etiopatogene and clinic of shoulder plexopathies (upper, lower, total). Etiopathogenesis and clinic of facial nerve neuropathy. Etiology and clinical picture of neuralgia of the trigeminal nerve.	abstract
	work with tests and questions for self-examination

Theme of the class: *Epilepsy*

The purpose of the lesson is to ensure the assimilation of the fundamentals of knowledge on the diagnosis and treatment of epilepsy and convulsive conditions.
Tasks:
1. Collect anamnesis in a patient with a newly diagnosed convulsive seizure.

2. Describe the neurological status
3.Explore the EEG epileptic phenomena.
4. Identify the main EEG rhythms.
5. Provide assistance with an epileptic fit.
6.Select main antiepileptic drug

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Epilepsy. The concept of risk factors for epilepsy, etiopathogenesis. Classification of epilepsy and epileptic seizures. Clinical picture of epilepsy for various types of seizures. Epileptic syndrome and epileptic reaction. Epileptic status. Diagnosis of epilepsy. Principles of treatment of epilepsy and epileptic status. Epilepsy and pregnancy.

3.Questions to the class studies

1. What is the epileptic focus?
2. What is the mechanism of secondary epileptogenesis?
3. What are the relationships between exogenous and endogenous factors in the genesis of epilepsy?
4. What pathomorphological changes occur with epilepsy?
5. In what way does the generalized seizure occur?
6. What are the risk factors for the development of epilepsy, the causes of a specific seizure?
7. What is the clinical picture of certain types of seizures (generalized convulsive, simple absences, simple focal motor, sensitive, complicated focal psychomotor and psychosensory fit, twilight state of consciousness)?
8. What is an aura, what are its clinical manifestations?
9. The concept of epileptic reaction, epileptic syndrome, febrile convulsions.
10. What is the mechanism of the epileptic status, the clinic, the tactics of the neurologist?
11. What are the instrumental methods for diagnosing convulsions, indications for their use.
12. What changes in EEG are characteristic for epilepsy?
13. What provocative tests are used to detect latent epileptic activity on the EEG?
14. In what situations should a patient with a newly developed epileptic seizure be prescribed antiepileptic drugs?
15. What is the difference between anticonvulsant therapy and antiepileptic therapy?
16. The basic drugs, the choice of the drug depending on the type of seizure.
17. What drugs are used to stop seizures, their dosage?
18. What side effects are observed with drug therapy of epilepsy, laboratory, clinical diagnosis, treatment tactics in them?
19. Why is monotherapy preferred in the treatment of epilepsy?
20. What are the indications for surgical treatment of epilepsy?

4. Questions for self-assessment

Tasks of the first level:

1. Indicate which of these types of seizures are generalized.

1). Jackson, 2). Vegetative - visceral, 3). Absenses

2. Indicate what kind of symptom is not characteristic for febrile seizures?

1). The debut is 1-3 years old, 2). No changes in the neurological status, 3). The focal component in the seizure pattern, 4). The duration of an attack is not more than 10 minutes

3. Indicate which of the paroxysms does not belong to the simple partial.

1). Adverse, 2). Olfactory, 3). Psychomotor

4. Indicate which of the following drugs is not used to treat absences?

1). Acidiprol, 2). Phenobarbital, 3). Suxilep, 4). Depakin

5. Indicate which of the listed convulsive seizures in young children does not apply to epi-reactions?

1). Affective-respiratory, 2). Febrile, 3). Infantile spasms

6. Tell me, which of the following drugs does not have anticonvulsant activity?

1). Luminal, 2). Carbamazepine, 3). Pipolphen, 4). Hexamidine, 5). Depakin

7. What is the treatment for epilepsy?

1). With polytherapy, 2). With monotherapy, 3). From parenterally administered anticonvulsants.

8. Indicate which drug is not used to arrest epileptic status?

1). Seduxen is parenteral, 2). GHB, 3). Aminazine

9. What drugs should be used for absences?

1. drugs valproic acid
2. carbamazepines
3. phenobarbital
4. Benzodiazepines
5. etosuksimidy

10. For any seizures, there is a violation of consciousness lasting 2-5 seconds?

1.absence
2. complex partial seizures
3. Myoclonic seizures
4. large generalized seizures

11. What are the main drugs for arresting the status epilepticus?

1. Seduxen intravenously
2. Depakin intravenously
3. dormicum intravenously
4. Sodium thiopental

12. Absolute electroencephalographic signs of epilepsy is the presence of paroxysmal:

1. Rhythmic phenomena in alpha and beta ranges
2. Peak-wave complexes
3. Rhythmic phenomena in delta-ranges
4. Rhythmic phenomena in theta-ranges
5. Answer-complex peak-wave

13. Does the reaction of the pupil to light persist for some seizures?

1. large generalized
2. hysterical seizures
3. Complex partial seizures
4. Epileptic

14.How to treat epilepsy?

1. Course, during 2-3 months, the use of antiepileptic drugs
2. Continuous use of drugs for many years before their cancellation by a neurologist
3. Taking medications within a month after an attack
4. Taking the drug once after the attack

15. What anticonvulsant is present in this list of drugs?

1) Depakine
2) ceftriaxone
3) prednisolone
4) cinnarizine

16. After what period of time after the seizures have ceased, can a decision be taken to cancel anticonvulsant treatment?

1. 1 year
2. 1.5 years
3 2 years
4 3 years

17. What is the most informative supplementary method used to evaluate the effectiveness of epilepsy treatment?

1. craniography
2. computed tomography
3. EEG
4. echo-EG
5. angiography

18. What drug can replace depakin in the treatment of epilepsy?

1. Finlexin
2. Phenobarbital
3. Convulex
4. Clonazepam

19. What contributes to the manifestation of epileptic activity on the EEG?

1. Photostimulation
2. Hyperventilation
3. Holding breath for 5-10 seconds.
4. Deprivation (deprivation) of sleep

20. In case of achieving a persistent clinical effect (cessation of epileptic seizures), the antiepileptic drug should be abolished within:

1 2 months
2. 6 months
3. 1 year
4. 3 years

21. What is the first help to a patient with an epileptic status in place?

1. Immobilization of the limbs
2. Introduction of the airway into the oropharynx
3. Immobilization of the head
4. Inhalation anesthesia with nitrous oxide.

22. At what type of epileptic fit is contraindicate Finlepsin?

1. Absence

2. A special fit
3. Myoclonic seizure

23. What drug should be prescribed if the patient has at the same time large generalized seizures and absences?
1. Finlepsin
2. Depakin
3. Phenobarbital
4. Diphenine

24. What is not typical for febrile seizures?
1. The debut in 1-3 years
2. No change in neurological status
3. The focal component in the seizure pattern
4. Absence in the anamnesis of previous afefrilnyh seizures

5.Compulsory and supplementary literature on the theme

1. Main literature

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6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work
Clinical picture of epilepsy for various types of seizures. Epileptic syndrome and epileptic reaction. Epileptic status.	preparation of a clinical case

Epilepsy. The concept of risk factors for epilepsy, etiopathogenesis. Classification of epilepsy and epileptic seizures.	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Diagnosis of epilepsy. Principles of treatment of epilepsy and epileptic status. Epilepsy and pregnancy.	abstract
	work with tests and questions for self-examination

Theme of the class*: Infectious diseases of the central nervous system*

The purpose of the lesson: to study infectious diseases of the central nervous system, diagnosis, treatment.

Tasks:

1. Collect anamnesis in a patient with infectious diseases of the central nervous system
2. According to the results of the survey and clinical data, diagnose the presence of meningeal and infectious-inflammatory syndrome
3. Check for the presence of meningeal symptoms: stiff neck muscles, Kerning symptom, Brudzinsky, Bechterev's malar symptom, usefulness of exit points of trigeminal nerve branches.
4. Choose an antibiotic for the treatment of purulent meningitis.
5. To conduct differential diagnostics of encephalitis from acute cerebrovascular diseases of the brain.
6. Prescribe treatment in the acute stage of encephalitis
7. Assign treatment depending on the stage and severity of the course of multiple sclerosis.

2. Basic definitions to be mastered by students during studying of the topic (list of notions).

Meningitis. Classification, basic syndromes. Clinic, diagnosis, treatment. Encephalitis. Classification, basic syndromes. Clinic, diagnosis, treatment of tick-borne and secondary encephalitis. Disseminated encephalomyelitis, multiple sclerosis. Clinic, diagnosis, treatment.

3. Questions for the class studies

1. Name and characterize the main clinical syndromes characteristic of meningitis.
2. What focal changes are most often observed with meningitis?
3. List the main meningeal syndromes
4. What are the distinctive liquorological signs of purulent and serous meningitis.
5. List the main areas of therapy for acute meningitis.
6. Principles of antibiotic choice and duration of its use.
7. What are the indications for performing a diagnostic spinal-cerebral puncture?
8. What diseases other than meningitis can occur meningeal syndrome?

9. Name the complications of purulent meningitis
10. What are the distinguishing features of encephalitis from an encephalitic reaction?
11. Describe the clinical forms of tick-borne encephalitis.
12. What are the principles of hormonal therapy?
13. What focal changes are characteristic of tick-borne encephalitis?
14. What changes in cerebrospinal fluid are characteristic of acute encephalitis?
15. List the main areas of therapy for acute encephalitis.
16.Why for encephalitis hormonal drugs remain the most effective remedy?
17.Recipient the concept of "infectious-inflammatory syndrome"
18. What are the pathomorphological signs of "plaque" depending on the stage of multiple sclerosis?
19. What are the symptoms of the initial stages of multiple sclerosis?
20. What are the differences between the treatment of multiple sclerosis during the period of exacerbation and remission?
21. Which functional systems of the central nervous system predominantly suffer from multiple sclerosis?
22. Is there a hereditary component in the disease with multiple sclerosis?

4. Questions for self-assessment

Tasks of the first level:

1. Indicate what changes in cerebrospinal fluid are not characteristic for tuberculous meningitis?
   1). Formation of fibrinous film, 2). Reduction of sugar in liquor, 3). Neutrophilic pleocytosis, 4). Cellular polymorphism
2. Specify the route of transmission of meningococcal infection.
   1). Contact, 2). Fecal-oral, 3). Air - drip
3. What is the cause of the appearance of articular rash in meningococcemia?
   1). The formation of immune complexes, 2). Increased vascular permeability, 3). Bacterial thrombi
4. Indicate what underlies the pathogenesis of primary viral encephalitis?
   1). Infectious-allergic process, 2). Interaction of the virus and neuron, 3). Regional edema, 4). Vascular Reaction
5. Indicate what underlies the pathogenesis of secondary encephalitis?
   1). Infectious-allergic process, 2). Interaction of the virus and neuron, 3). Regional edema, 4). Circulatory hypoxia
6. Indicate which CNS department is most often affected by tick-borne encephalitis?
   1). Subcortical nodes, 2). The middle brain, 3). Intermediate brain, 4). Neck segments of the spinal cord and nuclei of the medulla oblongata
7. Indicate which of these symptoms does not apply to meningeal symptoms?
   1). Malar Bechterew ‘s symptom, 2). Symptom of denial of the mother's hands, 3). Symptom Lasega, 4). Symptom Lesage
8. Indicate which of the following symptoms does not apply to the criteria for the abolition of antibiotics in purulent meningitis?

1). Stable temperature normalization, 2). Normalization of hemogram parameters, 3). Disappearance of meningeal symptoms, 4). Lymphocytic pleocytosis is not less than 25-30 cells. in 1 μl

9. Indicate which of the following symptoms is not characteristic of purulent meningitis?

1). Pressure of cerebrospinal fluid 300 - 400 mm aq. art. 2). "Variegation" of cellular composition (monocytes, macrophages, giant lymphocytes), 3). Neutrophilic pleocytosis 2-5 thousand cells. in 1 mcr.l, 4). Protein in liquor is 3-5 g / l.

10. Indicate which of the following symptoms is not characteristic of viral serous meningitis?

1). "Variegation" of cellular composition (monocytes, macrophages, giant lymphocytes), 2). Lymphocytic pleocytosis 150 - 200 cells. in 1 mcr.l, 3). Protein in liquor 0.4 - 0.6 g / l

11. Indicate which of the listed symptoms is not characteristic of multiple sclerosis?

1). Ataxia, 2). Muscle weakness, 3). Decreased visual acuity, 4). Lymphocytic pleocytosis in cerebrospinal fluid

12. Indicate which of the listed treatments is effective in the acute period of multiple sclerosis?

1). Antibiotics, 2). Thymectomy, 3). Plasmapheresis, 4). Hemodialysis

13. To determine the etiology of meningitis, it is necessary to appoint

a) ENMG
b) EEG
c) investigation of cerebrospinal fluid
d) angiography

14. The main diagnostic syndrome of meningitis is the following syndrome:

a) meningeal
b) infectious-inflammatory
c) cerebral
d) liquorological

15. Cerebrospinal fluid with purulent meningitis

a) transparent
b) xanthochromic
c) neutrophilic pleocytosis is detected
d) lymphocytic pleocytosis is detected

16. For what pathology are the following changes in cerebrospinal fluid: greenish-turbid, neutrophilic pleocytosis to 1-20 per 10^9, protein 0.5-4 g / l

a) purulent meningitis
b) serous meningitis
c) encephalitis
d) polyradiculoneuritis

17. The causative agent of meningitis in an adult is rarely

a) colon bacillus
b) meningococcus
c) pneumococcus
d) a stick of hemophilic influenza

18. Diagnosis of meningitis is established if available
a) acute arisen meningeal syndrome
b) changes in cerebrospinal fluid (presence of significant pleocytosis)
c) acute onset of the disease, accompanied by high fever
d) syndrome of infectious-toxic shock
19.In the stage of exacerbation of multiple sclerosis it is necessary to appoint
a) cytostatics (azathioprine)
b) glucocorticoids
c) immunomodulators
d) antibiotics
20. A distinctive feature in the clinical picture of acute lymphocytic choromeningitis Armstrong is significant
a) hypertensive syndrome
b) meningeal syndrome
c) Infectious-inflammatory syndrome

5.Compulsory and supplementary literature on the theme

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Topical diagnosis of diseases of the nervous system = Топическая диагностика заболеваний нервной системы [Электронный ресурс] : учебник на английском и русском языках / С. М. Карпов, И. Н. Долгова. - Москва : ГЭОТАР-Медиа, 2018. - 896 с. - Режим доступа: http://www.studentlibrary.ru/book/ISBN9785970445013.html

6. List of questions and exercises for the unsupervisedwork

Sections and themes for the individual studies	Types and contents of the unsupervised work

Disseminated encephalomyelitis, multiple sclerosis. Clinic, diagnosis, treatment.	preparation of a clinical case
Meningitis. Classification, basic syndromes. Clinic, diagnosis, treatment.	study of educational material (on the abstracts of lectures educational and scientific literature) and the preparation of reports at seminars and practical classes, to participate in thematic discussions
Encephalitis. Classification, basic syndromes. Clinic, diagnosis, treatment of tick-borne and secondary encephalitis.	abstract
	work with tests and questions for self-examination