LIST OF PRACTICE TOPICS ON NEUROLOGY AND NEUROSURGERY FOR THE 4TH-YEAR STUDENTS OF THE FACULTY OF FOREIGN STUDENTS (studying in English) IN THE 7 SEMESTER

1. Introduction to the discipline. History of the development of neurology and neurosurgery. Motor system and motor disorders.

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2. Corticospinal (pyramidal) tract.
3. Classification of reflexes. Reflex arcs. Deep and superficial and pathological reflexes (techniques for eliciting).
4. The characteristic and significance of pathological reflexes (foot, hand, axial).
5. Voluntary movements disorders: paresis, paralysis. Signs of central paralysis.
6. Signs of flaccid paralysis.
7. Syndromes of corticospinal tract lesion (precentral gyrus, corona radiata, internal capsule, brainstem, spinal cord, spinal roots, plexuses and peripheral nerves lesion).
8. Extrapyramidal system. Anatomy, physiology, functions.
9. Parkinson's syndrome.
10. Hyperkinetic syndrome. Types of hyperkinesis.

Supervision of thematic patients; mastering practical skills; discussion of clinical cases.

2. Sensory system and it's disorders.

1. Concepts of reception, sensation, and perception. Pathways of superficial sensitivity.
2. Pathways of deep sensitivity.
3. Methods for examining deep and superficial sensitivity.
4. Kinds of sensory disorders.
5. Types of sensory disorders (peripheral, spinal, cerebral).
6. Sensory ataxia. Segmental dissociative sensory disorder.
7. Brown-Séquard syndrome.
8. Tension symptoms (Lasegue, Mackiewicz, Wassermann).
9. Cerebellum. Anatomy and functions. Anterior and posterior spinocerebellar tracts.
10. Cerebellar ataxia: types, symptoms, examination methods.

Supervision of thematic patients; mastering practical skills; discussion of clinical cases.

3. Cranial nerves. Methods of examination and symptoms of lesion. Olfactory nerve. Anatomy, physiology, methods of examination, symptoms of lesion.

1. Optic nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
2. Oculomotor nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
4. Vegetative innervation of the eye. Pupil reflex arc. Horner's syndromes, Pty syndrome.
5. Trochlear and abducens nerves. Anatomy, physiology, methods of examination, symptoms of lesion.
6. The trigeminal nerve. Anatomy, physiology, methods of examination, symptoms of lesion. Types of facial sensitivity disorders (peripheral and segmental).

Supervision of thematic patients; mastering practical skills; discussion of clinical cases.

4. Cranial nerves. Methods of examination and symptoms of lesion. Brainstem. Alternating syndromes.

1. Facial nerve. Anatomy, physiology, methods of examination. Symptoms of facial nerve damage at the different levels.
2. Central and peripheral facial paralysis. Etiology, differential diagnosis, treatment.
3. Anatomy of the vestibular analyzer. Symptoms of a lesion. Symptoms of vestibular ataxia.
4. Anatomy and function of the auditory analyzer. Methods of examination. Symptoms of a lesion.
5. Glossopharyngeal nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
6. Vagus nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
7. Accessory nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
8. Hypoglossal nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
9. Bulbar and pseudobulbar syndrome. Etiology, symptoms and diagnostics.
10. Alternating syndromes in midbrain and pons lesions: Weber, Miyar – Gubler and Foville's s, Wallenberg – Zakharchenko, Jackson syndromes.

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5. Brain membranes, cerebrospinal fluid, meningeal syndrome, intracranial hypertension syndrome. Autonomic (autonomic) nervous system and syndromes of its defeat. Instrumental methods of research in the diagnosis of diseases of the nervous system. Blood supply of the brain and spinal cord

1. Anatomy of the brain and spinal cord meninges. Cerebrospinal fluid circulation and resorption. Characteristics of normal cerebrospinal fluid.
2. Lumbar puncture. Indications, contraindications, complications.
3. Meningeal syndrome, meningism. Etiology, symptoms.
4. Intracranial hypertension syndrome
5. X-ray radiography of cranium and spine, computer-assisted tomography, magnetic resonance imaging (MRI) positron emission tomography, subtraction selective angiography: their importance in the diagnosis of neurological, neurosurgical diseases and injuries.
6. Ultrasound diagnosis in neurology and neurosurgery: ultrasound examination of the brachiocephalic arteries and nerve trunks. Transcranial Doppler. Echoencephaloscopy.
7. Neurophysiological research methods (electroencephalography, electroneuromyography, evoked potentials).
8. Clinical neuroanatomy of the autonomic nervous system. Structure and functional organization of the limbico-reticular complex and segmental apparatus of the autonomic nervous system. Sympathetic and parasympathetic sections of the auto-

nomic nervous system.
9. Methods of research of the vegetative sphere (tone, reactivity, vegetative support of activity).
10. Blood supply of the brain. Arterial circle of cerebrum (circle of Willis), its physiological significance.
11. Spinal cord blood supply.
Supervision of thematic patients; mastering practical skills; discussion of clinical cases.

6. Fundamentals of clinical neuroanatomy and functional organization of the cerebral hemispheres. Higher brain functions and syndromes of their lesions. Topical diagnosis of spinal cord lesions.

1. Anatomy and physiology of the frontal, temporal, parietal, occipital cerebral cortex.
2. Agnosia, apraxia. Types, symptoms.
3.Types and symptoms of speech disorders (aphasia, dysarthria, alalia, mutism).
4. Structural and functional mechanisms of memory. Amnesia and its types.
5. The scale of quantitative changes of consciousness: deafening, sopor, coma (moderate, deep, terminal). Glasgow Coma Scale.
6. Syndrome of complete transverse lesion of the upper cervical spinal cord (C1 – C4).
7. Syndrome of complete transverse lesion of the cervical spinal cord (C5 – Th2).
8. Syndrome of complete transverse lesion of the thoracic spinal cord (Th3 – Th12).
9.Syndrome of complete transverse lesion of the lumbar spinal cord (L1 – S2).
10. Syndrome of an epiconus (S1 – S2), a cone (S3 – S5), and a horse tail (L2 – S5) of a spinal cord lesion.
11. Examination of patients with diseases of the nervous system. Topical, differential and clinical diagnosis and its substantiation. Prognosis for life and recovery.
Supervision of thematic patients; mastering practical skills; discussion of clinical cases.

7. Infection-inflammatory diseases of the nervous system.

1. Classification of the meningitis. Meningococcal meningitis. Etiology, pathogenesis, symptoms, diagnosis, differential diagnosis, complications, treatment.
2. Enteroviral, parotitic meningitis: etiology, pathogenesis, symptoms, diagnosis, treatment.
3. Tuberculous meningitis. Etiology, pathogenesis, symptoms, diagnosis, complications, treatment.
4. Classification of the encephalitis. Herpetic encephalitis. Etiology, pathogenesis, symptoms, diagnosis, treatment.
5. Tick-borne encephalitis: eastern and western variants. Etiology, pathogenesis, symptoms, diagnosis, treatment, prevention.
6. Epidemic encephalitis Economo. Etiology, pathogenesis, symptoms, diagnosis, treatment.
7. Poliomyelitis. Etiology, pathogenesis, symptoms, diagnosis, treatment.
8. Parainfectious encephalomyelitis. Etiology, pathogenesis, symptoms, diagnosis, treatment.
9. Lesions of the nervous system in syphilis. Classification, symptoms, diagnosis, treatment.
10. Damage of the nervous system in HIV infection, pathogenesis, symptoms, diagnosis, treatment.
11. Creutzfeldt-Jacob disease. Etiology, pathogenesis, clinic, diagnosis, treatment.
12. Neuroborreliosis. Etiology, pathogenesis, stages, symptoms, diagnosis, treatment, prevention.
Supervision of thematic patients; discussion of clinical cases.

8. Brain and spinal cord tumors. Purulent and parasitic diseases.

1. Prevalence and classification brain and spinal cord tumors.
2. Main neurological syndromes in brain tumors: initial (focal) and secondary (intracranial hypertension, dislocation).
3. Closed (occlusive) and open (aresorptive) hydrocephalus. Etiology, pathogenesis, symptoms, diagnosis, treatment.
4. Symptoms of brain tumors with localization in the frontal, temporal, parietal, occipital lobes
5. Tumors of the chiasmatic-sellar and subtentorial regions. Symptoms, diagnosis, treatment.
6. Principles, facilities and results of the surgical treatment. Radiotherapy, chemotherapy, symptomatic treatment.
7. Extramedullary spinal cord tumors. Classification, clinic, diagnostics, treatment.
8. Intramedullary spinal cord tumors. Classification, clinic, diagnostics, treatment.
9. Brain tumors in children. Metastatic brain and spinal cord lesions.
10. Neurocysticercosis. Etiology, clinic, diagnosis, treatment. Bruns syndrome.
11. Neurotoxoplasmosis. Etiology, clinic, diagnosis, treatment.
12. Echinococcosis. Etiology, clinic, diagnosis, treatment.
13. Brain abscess. Etiology, pathogenesis, clinic, diagnosis, surgical treatment.
Supervision of thematic patients; discussion of clinical cases. ***Exam on practical skills in neurology***

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