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Neurology

An examination of the patient with disorder of cerebrovascular circulation.

I.

1. To take patient's complains with disorder of cerebrovascular circulation (Transient Ischemic Attack, Subarachnoid haemorrhage, Ischemic stroke, Hemorrhagic stroke). First of all one should greet the patient, introduce himself, explain the reason of consultation, find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech). Correct inquest, listening to the patient's explanation and conversation accomplishment is necessary.

2. To take the history of presenting complains in the patient with disorder of cerebrovascular circulation (Transient Ischemic Attack, Subarachnoid haemorrhage, Ischemic stroke, Hemorrhagic stroke): to investigate time of first signs appearance and the beginning of the disease (acute, sudden, gradual), the cause of the disease (on patient's own opinion), associations, any signs of general cerebral syndrome at the beginning of the disease, the development of leading syndromes, blood pressure in dynamics. First of all one should greet the patient, introduce himself, explain the reason of consultation, find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech). Correct inquest, listening to the patient's explanation and conversation accomplishment is necessary.

II.

1. To examine meningeal signs in the patient with Subarachnoid haemorrhage (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To examine rigidity of occipital muscles, Kernig sign, Brudzinsky signs (upper, middle and lower), opisthotonus, hyperesthesia for hearing, optical or skin irritators, other meningeal signs (Hordon, Oppenheim, Guillain).
7. To explain the results of examination to the patient .

2. To examine meningeal signs in the patient with Intracerebral hemorrhage (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To examine rigidity of occipital muscles, Kernig sign, Brudzinsky signs (upper, middle and lower), opisthotonus, hyperesthesia for hearing, optical or skin irritators, other meningeal signs (Hordon, Oppenheim, Guillain).
7. To explain the results of examination to the patient .

3. To examine coordination function in the patient with Ischemic stroke (5 min).

1. One should greet the patient, introduce himself,

2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To check finger-to-nose test, finger-to-finger test, finger-to-hammer test, heel-to-knee test. To examine diadochokinesis, dysmetria (hypermetria) - Petrushka test, Stuart-Holmes, Babinski, Ogehovsky. To investigate nystagmus, scanning speech, intention tremor, macrographia, cerebellar hypotonia.
7. To explain the results of examination to the patient .

4. To examine balance in the patient with ischemic stroke (3 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To analyse the walk on one line, flange walk. To check simple and complicated Romberg test.
7. To explain the results of examination to the patient .

5. To examine superficial sensation in the patient with ischemic stroke (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To examine pain, temperature and tactile sensation.
7. To explain the results of examination to the patient .

6. To examine deep sensation in the patient with ischemic stroke (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To examine muscle-joint, vibration, kinesthetic sensation; sense of pressure and weight.
7. To explain the results of examination to the patient .

7. To examine complicated types of sensation in the patient with ischemic stroke (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).

6. To perform examination. To examine localization, discrimination, graphism and stereognosis.
7. To explain the results of examination to the patient .

8. To examine Motor system in the patient with cerebrovascular disorder (10 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To check the gate, volume of active and passive movements, muscles force. To check unconditioned reflexes (dermal and from mucose membrane; tendon and peryosteal), muscles tone, pathological reflexes, pathological synkinesias, protective reflexes, muscles atrophy, fibrillations and fasciculations.
7. To explain the results of examination to the patient .

9. To investigate the speech function in the patient with cerebrovascular disorder (10 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To analyse patient's speech (dysarthria, anarthria). To check the patient for aphasia (motor, sensory and amnesic).
7. To explain the results of examination to the patient .

10. To examine Cranial nerves function in the patient with cerebrovascular disorders (10 min).

1. One should greet the patient, introduce himself,
 2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
 3. To explain the reason of consultation
 4. To explain the details of examination, safety and feelings during the examination
 5. To prepare before examination (clean and warm hands).
 6. To perform examination. I – Olfactory nerve. To check perception and recognition of smells (hypoosmia, anosmia, hyperosmia, dysosmia). To investigate for presents of smell hallucinations or aura.
- II – Optic nerve. To check vision (normal, worse, absent).
- III, IV, VI – Oculomotor nerve, Trochlear nerve, Abducens. To examine the patient for presents of diplopia. To analyse the size of palpebral fissures and pupils (myosis, midriasis, anizokoria). To examine volume of eye movements in different directions (up, down, left, right), direct and indirect light reaction; pupils reaction on convergence and accommodation.
- V – Trigeminal nerve. Sensory function: to examine painful points of nerve (supraorbital, infraorbital, mandibular), trigger zones. To investigate superficial sensation on symmetrical facial zones of radicular and segmental innervation (onion type).
- Motor function: to examine chewing and temple muscles state (tension, hypotrophia, atrophica, fibrillations and fasciculations); volume of mandible movements and position of mandible at

mouth opening (left, right, forward). To check corneal, conjunctival, subeyebrow, mandibular reflexes.

VII – Facial nerve. Motor function: to analyse the size and evenness of palpebral fissures, symmetry of frontal and nose-labial placations. To check for muscles atrophie, fibrillations, mimic hyperkinesis, tics, facial hemi- and paraspasm, lowness of mouth angle, asymmetry of mouth, lagophtalm – “rabbit’s eye”, Bell’s sign, pathological synkinesias.

Autonomic function: to examine taste on anterior 2/3 of the tongue (hypogeusia, ageusia, parageusia), function of lachrymal and salivary glands (kserophtalmia, tears, hypersalivation, hyposalivation). To analyse changes of hearing (hyperacusis).

VIII – Vestibulo-cochlear nerve. To examine cochlear part: hearing changes (hyperacusis, acoustical noise, acoustical hallucinations, aura, agnosia), hearing acuity, air and bone sound-conduction (Weber, Rinne).

To examine vestibular part: dizziness, nystagmus, equilibrium disorders.

IX, X – Glossopharyngeal nerve, Vagal nerve. Motor function: to examine voice (dysphonia, aphonia, hypophonia), swallowing (dysphagia, aphagia), speech (dysarthria, anarthria).

Reflexes: to check palatal and gag reflexes.

Autonomic function: to examine taste on posterior 1/3 of the tongue (hypogeusia, ageusia, parageusia), dryness in mouth, hypersalivation. To investigate pain in tonsils, back side of pharynx, tongue’s back, inside in the ear.

XI – Accessory nerve. To examine the function of sternocleidomastoid muscle and trapezius (muscles force, volume of movements, muscles hypotrophy, atrophy, hypertrophy, fibrillations and fasciculations).

XII – Hypoglossal nerve. To examine the state of tongue muscles (volume of tongue movements, hypotrophy, atrophy, fibrillations, tremor).

7. To explain the results of examination to the patient .

4 line

Neurology

An examination of the patient with radiculopathies.

1. To take patient's complains with radiculopathy. First of all one should greet the patient, introduce himself, explain the reason of consultation, find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech). Correct inquest, listening to the patient’s explanation and conversation accomplishment is necessary.

2. To take the history of presenting complains in the patient with radiculopathy: to investigate time of first signs appearance and the beginning of the disease (acute, sudden, gradual), the cause of the disease (on patient’s own opinion), associations, any signs of general cerebral syndrome at the beginning of the disease, the development of leading syndromes, blood pressure in dynamics. First of all one should greet the patient, introduce himself, explain the reason of consultation, find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech). Correct inquest, listening to the patient’s explanation and conversation accomplishment is necessary.

II. A physical examination of the patient.

1. To diagnose vertebrogenouse syndrome in the patient with radiculopathies (10 min).

1. One should greet the patient, introduce himself,

2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).

3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination.
 - To examine lumbar-sacral part of vertebra. To check configuration of vertebra: lordosis (normal, smoothed, absent, signs of scoliosis, kiphosis), asymmetric of waist triangles, visual tension of paravertebral muscles.
 - To analyse position of the patient in the bed (antalgic postures: knee-elbow pose, trileg symptom, can lie down only on one side or on the back with one bended knee).
 - To examine the volume of active movements in lumbar-sacral part of vertebra: forward, back, left-right sides (movement limitation or impossibility), appearance of scoliosis at forward inclination, appearance or increasing of pain at movement.
 - To palpate level of tension paravertebral muscles (I, II, III).
 - To palpate painful points: paravertebral, vertebral processes, painful points of Sciatic and Femoral nerves (Gara's, Valle's).
7. To explain the results of examination to the patient .

2. To check signs of strain in the patient with radiculopathies (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination. To examine Neri, Laseg, Matskevych, Vasserman, Degerin signs in the patient.
7. To explain the results of examination to the patient .

3. To examine motor system in the patient with radiculopathies (10 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination.
 - General examine of muscles system: hypotrophy, atrophy, fibrillations and fasciculations.
 - To check the volume of active and passive movements: flexion, extension (limited, unlimited, absent) in hand, forearm, shoulder, femur, shin, footstep.
 - To check muscles force on all parts of extremities (according to 5 marks scale): hand, forearm, shoulder, thigh, leg, foot.
 - To examine muscles tonus using palpation and passive movements on all parts of extremities. Made a conclusion about presence of hypotonia, atonia, hypertonia.
 - To check tendon and periosteal reflexes (increasing, decrease, absent, wideness of reflection zone): biceps, triceps, carpo-radial, knee, ankle reflexes.
 - To check superficial dermal reflexes (upper, middle and lower abdominal, plantar, cremaster, anal reflexes): increasing, decrease, absent.
 - To examine gate: paretic, peroneal (cock's gait).
 - To check pathological reflexes from lower extremities: extensor: Babinski, Oppenheim's, Gordon's , Sheffer, Chaddock's, Puusepp's reflexes
 - Flexor: Rossolimo, Jukovski, Bechterev's, Mendel – Bechterev's reflexes.

- To investigate paresis and its type: central or peripheral.
 - To analyse the degree of motor disorder: reflex, light paresis, medium or deep paresis, plegia.
 - To make a conclusion about level of lesion of nervous structure or tract in this patient.
7. To explain the results of examination to the patient .

4. To examine superficial sensation in the patient with radiculopathy (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination.
 - To check pain sensation using the pin on symmetric parts of the body according to segmental innervation.
 - To check tactile sensation by touching symmetric parts of the body according to segmental innervation with piece of cotton wool.
 - To check temperature sensation using test-tube with cold (10^0) and hot (40^0) water.
 - To make a conclusion about level of lesion of nervous structure or tract in this patient.
7. To explain the results of examination to the patient .

5. To examine deep sensation in the patient with radiculopathy (5 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination.
 - To examine muscle-joint sensation by checking volume of passive movements in the patient with closed eyes, starting from distal parts of extremities.
 - To examine vibration sensation by using tuning fork which is applied to bones.
 - To examine kinesthetic sensation: does the patient feel direction of movement skin placement with closed eyes.
 - To find out type and subtype of sensory disturbances:
 - peripheral: mononeuritic, polyneuritic, and plexalgie;
 - segmental: radicular and dissociated;
 - conductive: spinal and cerebral
 - To make a conclusion about level of lesion nervous structure or tract in this case.
7. To explain the results of examination to the patient .

6. To investigate autonomic disorder in the patient with radiculopathy (3 min).

1. One should greet the patient, introduce himself,
2. To find a contact with a patient, try to gain his/her confidence (friendly facial expression and smile, gentle tone of speech).
3. To explain the reason of consultation
4. To explain the details of examination, safety and feelings during the examination
5. To prepare before examination (clean and warm hands).
6. To perform examination.

- To inspect patient's skin (dryness, peeling, colour, trophic spot, ulcer, hair falling out).
 - To inspect nails (hyperkeratosis, striped).
 - To investigate dysfunction of pelvic organs: urination, defecation.
 - To investigate character of pelvic dysfunction: central or peripheral.
7. To explain the results of examination to the patient .

4 line

Neurology

The explain of X-Ray examinations results.

I. To analyse brain CT changes of ischemic stroke (3 min).

1. To inspect CT-scan of the brain
2. To explain:
 - a. Hemispheres symmetry
 - b. Localisation of central structure of the brain
 - c. Changes of brain tissue.
 - d. Ventricular size and form
 - e. Presence of fractures of skull bones
 - f. Size of interhemispheres or subarachnoid fissures
 - g. Presence of "plus-tissue" in hemispheres or meningeal membranes
 - h. Presence of edema
 - i. Presence of dislocation signs
3. To make a conclusion about topic localization of pathological process on CT-scan (distribution, artery).

II. To analyse brain CT changes of hemorrhage stroke (3 min)

1. To inspect CT-scan of the brain
2. To explain:
 - a. Hemispheres symmetry
 - b. Localisation of central structure of the brain
 - c. Changes of brain tissue.
 - d. Ventricular size and form
 - e. Presence of fractures of skull bones
 - f. Size of interhemispheres or subarachnoid fissures
 - g. Presence of "plus-tissue" in hemispheres or meningeal membranes
 - h. Presence of edema
 - j. Presence of dislocation signs
3. To make a conclusion about topic localization of pathological process on CT-scan (distribution, artery).

III. To analyse brain CT changes of ventricular hemorrhage (3 min).

1. To inspect CT-scan of the brain
2. To explain:
 - a. Hemispheres symmetry
 - b. Localisation of central structure of the brain
 - c. Changes of brain tissue.
 - d. Ventricular size and form
 - e. Presence of fractures of skull bones
 - f. Size of interhemispheres or subarachnoidal fissures
 - g. Presence of “plus-tissue” in hemispheres or meningeal membranes
 - h. Presence of edema
 - i. Presence of dislocation signs
3. To make a conclusion about topic localization of pathological process on CT-scan

IV. To analyse brain CT changes of occlusion hydrocephalus (3 min).

1. To inspect CT-scan of the brain
2. To explain:
 - a. Hemispheres symmetry
 - b. Localisation of central structure of the brain
 - c. Changes of brain tissue.
 - d. Ventricular size and form
 - e. Presence of fractures of skull bones
 - f. Size of interhemispheres or subarachnoidal fissures
 - g. Presence of “plus-tissue” in hemispheres or meningeal membranes
 - h. Presence of edema
 - i. Presence of dislocation signs
3. To make a conclusion about topic localization of pathological process on CT-scan (distribution, artery).

V. To analyse CSF changes (3 min)

1. To inspect CSF analyses.
2. To explain:
 - a. colour
 - b. Transparency
 - c. Sugar contents
 - d. Protein contents
 - e. Cells contents
 - f. Microscopy of inside
 - g. Presence of red blood cells
 - h. Cell\protein index
 - i. Presence of microorganisms
3. To make a conclusion: Which pathology can cause such CSF-changes.

VI. To analyse brain CT changes of subarachnoidal hemorrhage (3 min).

1. To inspect CT-scan of the brain
2. To explain:
 - a. Hemispheres symmetry
 - b. Localisation of central structure of the brain
 - c. Changes of brain tissue.
 - d. Ventricular size and form
 - e. Presence of fractures of skull bones
 - f. Size of interhemispheric or subarachnoid fissures
 - g. Presence of “plus-tissue” in hemispheres or meningeal membranes
 - h. Presence of edema
 - i. Presence of dislocation signs
3. To make a conclusion about topographic localization of pathological process on CT-scan (distribution, artery).