Ministry of Health of Ukraine
Kharkiv National Medical University

INSPECTION OF THE SEPARATE BODY PARTS: HEAD, NECK, TRUNK, EXTREMITIES.

Methodical instructions for students

Рекомендовано
Ученым советом ХНМУ
Протокол №__от_____2017 г.

Kharkiv
KhNMU
2017

Inspection of the separate body parts: head, neck, trunk, extremities. / Authors: T.V. Ashcheulova, O.M. Kovalyova, S.V. Ivanchenko – Kharkiv: KhNMU, 2017. – 8 p.

Authors: T.V. Ashcheulova
O.M. Kovalyova
S.V. Ivanchenko

INSPECTION OF THE SEPARATE BODY PARTS: HEAD, NECK, TRUNK, EXTREMITIES.

Examination plan:

1. Inspection of the head: size, shape, position, movement of the head;
2. Inspection of the eyes: eyelids, sclera, conjunctiva and cornea of the eye;
3. Pupil: examination of the size, shape, reaction to convergence, light, accommodation;
4. Inspecting the mouth: size, shape, symmetry of the angles, forms and color of the lips and mouth mucosa, examination of teeth, tongue, and gums;
5. Inspection of the neck: shape, size, symmetry, skin color, presence of scars and visible pulsation.

Head. During inspection of the head you should pay attention on the size, shape, position, movement and state of eyes, nose, mouth, tongue, and teeth.

Head size may be normal, enlarged (macrochephalia) and small (microcephalia). Microcephalia reflects small size of brain and cerebral skull.

Macrocephalia is observed in such pathological state:

- hydrocephalia (hydrocephalus) – inherited disorder characterized by enlargement of the head, dilation of the brain ventricles due to the disturbance flowing away the spinebrain fluid and increasing of intracranial pressure resulted in neurological symptoms and mental retardation;
- achondroplasis is characterized by large skull with prominent back of the head, disproportion of brain and facial parts of skull, nose as a saddle, short stature, dwarf, disproportion of the trunk due to the short limbs, cervical lordosis;
- cerebral gigantism (syndrom sotos) may reveal after birth. The newborn has great weight and length (more than 3.9 kg and 55 cm) and accelerated growth in first years of life. Acromegalic features – macrocephalia, with prominent frontal hillock, enlarged foot and hand, scoliosis, and syndactilia;
- toxoplasmosis syndrome occurs in case of evidence of infection at mather and transmission it to the child during development of pregnancy. Congenital toxoplasmosis is characterized by hydrocephalia, sometimes microcephalia, affection of eyes, cyanosis, jaundice, and hepatosplenomegalia.

Microcephalia – small head, brain weight, mental retardation. There are neurological disorders: athonia, spastic paralysis, cramps. Two forms of microcephalia are distinguish: primary with autosomal-recessive inheritance and secondary due to the organic brain damage different etiology (birth trauma,

toxoplasmosis, citomegalia, intrauterus hypoxia, exposure of radiation on fetus). Microcephalia is often accompanied the gene and chromosomal syndrome.

Head Shape. A "square" head with "bossing" of the frontal and parietal bones and delayed closure of the anterior fontanelle in childhood is characteristic of rickets. May be craniotabes – small round unossified areas in the membranous bones of the skull. "Bossing" of the skull, prominent malar bones and protuberant teeth are development in sickle-cell anemia.

A head bossing due to the bone marrow hyperplasia appears in child with beta-thalassemia. The skull radiograph shows a "hair on end" appearance and general widening of the medullary spaces, which may interfere with the development of the paranasal sinuses;

A "triangle" head develops due to the intrauterus craniosynostosis, closing the skull fissura, elevation of intracerebral pressure. The characteristically features: high forehead, exophtalmus, ptosis, and nose as beak;

Local osteomalacia of skull bone is characteristic of multiple myeloma (disease of blood);

A "square" head, flattened on top, with prominent frontal tubers, can indicate congenital syphilis.

Acrocephalia – tower-like shape of skull accompanied with polydactily and syndactily is the feature of the congenital pathology – acrocephalopolysandactyly (Carpenter's syndrome).

Craniosynestosis – premature closing of skull fissure limited the skull growing, resulted to bone deformity.

Position of the head depends on state of spine and nervous system:

- immovable head is observed at ankylosing spondyloarthritis, Bekhterev-Strumpal-Mari's disease, verterbal osteochon-drosis, myositis, myopathy, fusion of cervical vertebral (Klippel-Fell's disease cervical ribs);
- torticollis (stiff-neck) – turning head in one side may be acquired and occur due to the myositis. More commonly the reason are congenital muscular torticollis (Grisel's disease), spastic torticollis;
- neck stiffness with head throw back is specific for meningitis or tetanus.

Movement of the head: involuntary shaking head associated with tremor of the hands occurs at patients with Parkinson's disease;

Non-rhythmic tremor of the head is the symptom of chorea, st. Vitus's dance;

Shaking head synchronous with heart function (with pulse wave a head throw back) named as Musset's sign is observed at aortic regurgitation

Eyes. Inspection of the eyes can reveal some essential diagnostic signs. It is necessary to exam eyelids, eye slit, eyeball, sclera, cornea of the eye, pupils.

Eyelids:

- swallowing and pigmentation is the sign of dermatomyositis;
- edema of the eyelids is the first indication of the nephritis;
- narrowing of the eye slit occurs in myxedema and general edema (anasarca);
- dark eyelids are the characteristic of Addison's disease and diffuse toxic goiter;
- xanthomas at eyelids indicate deranged cholesterol metabolism – atherosclerosis, liver cirrosis, cholestatic jaundice;
- persistent drooping of the upper eyelids (ptosis) may be congenital or acquired origin. Ptosis congenital has autosomal dominant inheritance, often one-side character. Sometimes ptosis is one of the multiple symptoms congenital etiology – myotonic dystrophy, Roberts syndrome, ptosis intermittent character or diplopia – the symptom of myastenia gravis. Acquired ptosis observes at botulism, syphilis, hemiparesis. Unilateral ptosis accompanied with recession of the eyeball (enophtalmos), pupil narrowing, described as Klod-Bernard-Horner syndrome observe at affection of cervical pupil sympathetic innervatiom part sympathetic spinal tract. Lagophalneus – incomplete closing of eyelids is the sign of congenital pathology.
- Eye slit depends on the eyeball and eyelid position. Narrowing of the eye slit may be observed in acute glomerulonephritis, Quenke oedema, myxoedema, peritonitis, and congenital pathology. Widening of the eye slit may be observed in thyrotoxicosis, retrabulbar abscesses. Asymmetry of the eye slit may be at unilateral ptosis, tumor of the brain.

Hyperthelorism – diminished distance between cuter angle of eyehole.

Epicanthus (canthus the angle of the eye slit) – vertical skin fold at the outer angle of the eye slit. Hyperthelorism, and epicantus are the signs of congenital pathology – craniocarpotarsal dysplasia, wich characterized by facial abnormalities: epicanthus, hypotholorism, enophtalmus, squint, small nose, deviation of finger. *Telecantus*– lateral deviation of the eye slit.

Sclera, conjunctiva and cornea of the eye:

- blue sclera or syndrome of "blue eyes" may observed at congenital pathology: ostegenesis, imperfacta ("blue eyes", fragile bones and multiple fracture of limbs, ribs and clavicles), focal dermal hypoplasia (thin partial skin, "blue eyes"), Rieger syndrome ("blue eyes", aniridia, kataracta, strabismus);
- yellow sclera is early sign of jaundice;

- bleeding into the conjunctive and sclera at bacterial endocarditis, epilepsy, deficiency of vitamin C;
- red "as a rabbit" conjunctivae ocular injection at typhus;
- single brown spot at conjunctiva may observe at Addison's disease.

Pupil: examination of the size, shape, reaction to convergence, light, accommodation.

Myosis – papillary constriction is observed in uremia, intracranial hemorrhages, brain tumor, neurosyphilis, typhus, chronic poisoning. In persons with morphine abuse – point-like pupil are typical.

Mydriasis– papillary dilation is observed in patients with coma (except uremic and apoplectic), syphilis, sometimes at aortic aneurysm.

Anisocoria – asymmetrical pupils is observed in syphilis, Argyll Robertson's syndrome.

Pupilla pulsation of the pupil in synchronism with the cardiac beat and pulse (Landolphys symptom) is characteristic of aortic regurgitation.

Reaction to light is characterized by constriction of the pupil during exposure of light, and pupil dilation during absence of light. Reaction pupil to light is useful for diagnostics of nervous system damage, syphilis, unconsciousness, poisoning of atropine.

Papillary abnormalities, described by Argyll Robertson's may accompany any neurosyphilitic syndrome. The pupils are small and irregular, and may react to convergence but not directly to light.

Mouth. When inspecting the mouth attention should be paid to its size, shape, symmetry of the angles, forms and color of the lips and mouth mucosa. It is necessary to exam teeth, tongue, and gums. Mouth shape in pathological condition may be in a form of macrostomia and microstomia.

Macrostomia is a result of congenital pathology.

Microstomia has inhereted origin and may be acquired (mouth in patients with sclerodermia and hypoparathyroidism).

Asymmetry of the mouth angles observed in local inflammatory process and in patients with lesions, affecting the trygeminus system; paralyses of the facial nerve; stroke with such clinical feature: unilateral loss of nasolabial fold, mouth angle is lowered on the affected side and saliva may droop from it.

Constant half-open mouth is observed in acromegaly, Daun's disease, congenital hypothyroidism, severe dyspnea, and paralyses of the facial nerve.

Contracted lips and closed mouth are the characteristic of exlampsia, tetanus, and rabies.

"Risus sardonicus" with a semblance of a grin occurs in tetanus patients: the mouth widens as in laughter while the skin folds on the forehead express grief.

Lips. Color of the lips:

Cyanotic color of the lips is characteristic of mitral stenosis, heart failure. Hyperemic lips observe in high temperature, inflammatory processes. Pale lips occur in acute and chronic bleeding, oncological process, leukemia, hypo- and aplastic anemia.

Cavity of the mouth. When inspecting the cavity of the mouth attention should be paid to the color of the mucosa, presence of eruption, ulcer, erosions, and form of palate.

Color of the mucous membrane:

- Yellowish color is characteristic of true jaundice; appearance of yellowish soft palate precedes the yellowish sclera and is an early sign of virus hepatitis.
- Pale color with swelling is the specific sign of anemia different etiology.
- Hyperemic mucous membrane with swelling is characteristic of stomatitis.
- Koplik's spot (Koplik's enanthema) appear at the second day in catarrhal stage of measles. Koplik's spots are small white on the mucous membrane of the mouth surrounded by a narrow zone of inflammation.
- Single brown spots are characteristics of Addison's disease.
- Hemorrhages, aphthae, ulcers, herpes labials, sore throats are common signs of acute leukemia.
- Hemorrhage is observed in patients with congenital or acquired bleeding disorders.
- Aphtous ulceration characterized by superficial ulcers in the mouth, which are often multiple. Severe aphtous ulceration may be in association with Crohn's disease, ulcerative colitis, and celiac disease.
- Candidosis is a fungal infection and classified either as superficial (skin or mucous membrane) or systemic. In mouth appears white patches on tongue and buccal mucosa, and may enlarge and coalesce to form an easily detached membrane; there is a little surrounding inflammation.

Gum, gingiva. Marked changes in the gums can be observed in some disease and poisoning.

- Ulcerative-necrotic gingivitis with hemorrhage from the mouth may be in leukemia.
- Inflammation of gingival mucous membrane, stomatorrhagia, painful gums are observed in hypovitaminosis C – scorbutic gingivitis.
- Mercuric gingivitis is characterized by desquamate and atrophic processes of the mucous membrane.
- Diabetic gingivitis is diffuse inflammation with gangrenous complications.

- Lead gingivitis is characterized by blue punctate line on the gum margins adjoin the teeth and injury of the gum.

Tongue. In health the tongue is moist with only slight white fur on the dorsum. The papillae are readily seen. With inspecting the tongue attention should be paid to its shape and size, surface, movement, color, and the state of papillae.

Shape and size:

Macroglossia – enlargement of the tongue is a sign of congenital pathology (Daun's disease; Beckwith-Wiedeman syndrome – macroglossia, visceromegalia, ompalocele; glycogenosi type II – macroglossia, cardiomegalia, myotonia; cerebral gigantism). Macroglossia appears on development of acromegaly, hypothyroidism. Moderate macroglossia may appear in the patients with fever, gastrointestinal diseases.

Microglossia – decreased tongue observe in the patients with cholera, typhus, starvation, and vitamin B12-deficiency.

Unilateral atrophia of the tongue occurs at pyramidal tract lesion.

Flat tongue due to the atrophy of it base resulted from ulcerative stomatitis and scarification of the soft palate and pharynx in secondary syphilis.

Fur of the tongue in pathological conditions has diagnostic significance:

Coated (furred) tongue is observed at gastritis, peritonitis, colitis, fever, infections (hepatitis), and pneumonia;

Coated in the center and at the base but clear the tip and margins of the tongue is typical to typhoid fever. Additional diagnostic meaning is a fur character and color:

- White fur observe at typhus, pneumonia and peritonitis;
- White-gray fur observe at gastritis, virus hepatitis, and some infections;
- White-dirty or yellow fur – at peritonitis;
- White-blue – in rheumatic polyarthritis;
- White-yellow fur in those who smoke excessively;
- Crimson-red (strawberry/raspberry) tongue observe in scarlet fever;

Dry tongue is an indication of dehydration with followed formation of erosion hemorrhage and observed in peritonitis, and severe infections. Dryness of the mouth (xerostomia) may be caused by anticholinergic or antidepressant drugs; bur commonly it is due to anxiety.

Glossitis may be a prominent feature of stomatitis resulting from nutrition deficiency and overdose of antibiotics.

Surface of the tongue.

Atrophy of tongue papilla cause smooth (as if polished) crimson tongue, Hunter's glossitis, which may observe in the patients with B12-deficiency anemia.

The glassy tongue is characteristic of gastric cancer, pellagra, and sprue.

The local thickening of the tongue with chronic migrating superficial glossitis named as geographical tongue is found in the patients with hyperacidity of gastric juice.

Grooved (fluted) tongue, with multiple wrinkles is characteristic of acromegaly.

There are some patches, ulceration at the mouth.

Leucoplakia is white, firm, smooth patches beginning at the side of the tongue and later spreading over the dorsum. In the early stages the tongue is not painful but later fissures split the patches with tenderness. Hairy leucoplakia occurs in aids.

Syphilis may present as a painful solitary ulcer usually on the tongue or palate.

Neck. During inspection of the neck attention should be paid to the shape and size, symmetry, skin color, presence of scars and visible pulsation.

Changing of *neck shape and size* depend on constitutional type, the state of lymph nodes, thyroid gland, cervical column and muscles development.

Short thick neck is observed in hypersthenic persons. In pathological condition such neck may be in patients with lung emphysema, obesity, hypothyreoidism, Cushing's disease, and pronounced enlargement of thyroid gland.

Long slim neck with prominent cartilage is observed in asthenic persons. In pathology suck neck may be in patients with disorders of pituitary (sex) gland, starvation, cachexia.

Disorders of head movement are due to the osteochondrosis of cervical column, rigidity of neck (occipital) muscles, presence of scars, enlargement of lymph nodes, thyroid gland, appearance of tumor.

Skin color changes at the neck region can indicates such pathology**:**

- pigmentation with outlined border is observed in Addison's disease;
- multiple pound white sport (syphilitic leucoderma) as a neclace (collar Veneris) in syphilis;
- scars at neck indicate to the previous tuberculous lymphadenitis.

Prerugium-syndrom – a skin fold placed on the side neck surface from mastoid process is a sign of Shereshevsky-Turner syndrome.

Pulsation of the carotid artery (carotid shudder, saltus carotidum) appears due to the changing of blood pressure and filling of arteries during systole and diastole in patients with aortic regurgitation, hyperthyroidism, and fever.

Swollen and pulsation of jugular veins is explained by difficulty of blood flow to right atrium in tricuspid regurgitation, pericarditis, and chronic lung diseases.

Thyroid gland placed on anterior surface of cricoid cartilage. In normal condition in healthy persons thyroid gland is impalpable. The thyroid isthmus is often but not always palpable. The lobes are more lateral, than isthmus and harder to feel.

Goiter is a general term for an enlarged thyroid gland and observed in Basedovica disease (hyperthyroidism), autoimmune thyroiditis (Shasimoto goiter) and endemic goiter.

The diffuse enlargement of thyroid gland is observed in hyperthyroidism; asymmetric separate nodes with unequal surface characterize cancer of the thyroid gland.

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O.M. Kovalyova
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Chief Editor Ashcheulova T.V.

Редактор_____
Корректор_____
Компьютерная верстка_____

г. Харьков, пр. Науки, 4, ХНМУ, 61022
Редакционно-издательский отдел