

Ministry of Health Protection of Ukraine
Poltava State Medical University

Approved
at a meeting of the department
pediatric surgery
with traumatology and orthopedics
Protocol №1 August 27 2021
Head of Department, Associate
Professor O.V. Pelypenko

Methodical instructions
for independent work of students
in preparation for the practical training and in the classroom

Academic discipline	Traumatology and Orthopedics
Module № 1	Traumatology and Orthopedics
Content module № 3	Degenerative-dystrophic, inflammatory and tumoral diseases of the extremities and joints
The topic of the lesson	Inflammatory specific, tumor and tumor-like diseases of the support and movement system
Course	5
Faculty	Medical

1. Actuality of theme:

Inflammatory specific, tumor and tumor diseases of musculoskeletal system are so march in our time. Having regard to that to this employment students passed a theoretical course fully, and also that it is practically impossible to provide for in good time with what pathology a patient will visit a doctor, is recommended, after the reception of patients, will become familiar with a textbook and thematic literature on this pathology, to revise the divisions of atlas and X-ray, KT and MRI.

2. Educational aims:

➤ To master the modern methods of inspection of traumatology and orthopaedic patients with inflammatory specific, tumor and tumor diseases of musculoskeletal system.

➤ To master the algorithm of system inspection of patient with inflammatory specific, tumor and tumor diseases of musculoskeletal system, interpretation of these laboratory researches, X-ray, KT with 3D reconstruction, MRI.

➤ Able to conduct questioning sick, undertake a clinical study of organs and systems with the selection of local status in patients with inflammatory specific, tumor and tumor diseases of musculoskeletal system.

➤ Able to set forth a previous diagnosis, lay down the plan of additional inspection, appoint rational treatment.

3. Base knowledge, abilities, skills necessary for the study of theme:

Discipline	To know	Able
Propedevtic internal illnesses, general surgeon	Plan of inspection sick.	To conduct the complete inspection of patient
Radio therapy	X-ray, KT, MRI signs of damage of locomotorium	To set a X-ray, KT, MRI diagnosis
Pharmacology	A testimony and contra-indication are to application of different groups of preparations	To appoint the complex of medicamental treatment

4. Materials for before auditorium of independent work

4.1. Professional algorithms in relation to a capture by skills and abilities:

Tasks	Pointing	Notes
Reception of traumatology and orthopaedic patient	To collect complaints, conduct research sick with application of palpation, percussion, auscultation, to set anamnesis of disease and life	To pay attention to terms of beginning of disease, his periodicity, reasons of development
To appoint the plan of	To interpret data of	To pay attention to

additional inspection	laboratory and instrumental methods of research.	concomitant pathology that can accompany a basic disease.
To appoint the plan of treatment	To ground select tactics	To set a presence or absence of contra-indications to the certain methods of treatment

4.2. Table of contents of theme

The special traumatology and orthopaedic status includes: review of patient with inflammatory specific, tumor and tumor diseases of musculoskeletal system, palpation, auscultation, determination of volume of motions in joints and measuring of length and circumference of extremities, determination of muscular force and function of staggered organ. For establishment of clinical diagnosis conduct additional researches: laboratory, X-ray, KT, MRI, physiology, morphological et al.

Acquaintance with a patient a doctor must begin with anamnesis of disease. It costs to find out time and terms of appearance of the first symptoms, reason of disease, motion of sickly process, conducted earlier treatment and effect from him. On the basis of the taken history a doctor gets possibility to lay down a primitive idea about a patient, his illnesses and to build a working hypothesis. Next careful research of patient is conducted in the aspect of this hypothesis and allows to confirm her or decline as wrong.

A review of patient must be always comparative. It does not follow to be satisfied with a review only of that part of body, on violation of that complains to the patient. Reviews, as a rule, it is needed to do at complete baring of patient.

At a review it is important to mark the pose of patient and position of extremity. Distinguish three substantive provisions: active, passive and force. A force position or extremities of trunk is marked: at the expressed sickly syndrome, as a result of morphological changes in tissues (contractures, acampsias), at violations in other areas to the skeleton (scray options).

Pathological processes over in joints can bring to more or less proof deformations of all extremity or some her segment. At a review it costs to pay attention to atrophy of muscles and state of the cutaneous covering.

At research of patient for the study of local damages a doctor must apply palpation (pressure, pattering).

Putting the racemes of hands a palm's, and yet better by a dorsum to staggered and symmetric healthy areas extremities, it is possible to catch the difference of skin temperature. At feeling of place of defeat it costs to pay attention to humidity or dryness of skin, roughness, moving of skin and hypoderm.

Find out palpation the rough cacesthesias of tissues (hypoesthesia, hyperesthesia, anaesthesia), turgor of tissues, degree of edema. Crunch at motions in joints, ballot of patellar, fluctuation, crepitus of fragments at a break determined also by means of palpation.

Auscultation. Joints hear in traumatology and orthopaedic of patients usually, shaft bones at breaks, and also tumours and aneurysm.

A disease and damage of joints result in violation of congruence of arthral surfaces, to the origin of intra arthral bodies, loss of sliding properties of arthral cartilages and meniscuses, characterized by pathological murmurs. At research of voice symptoms that accompany motions in a joint, it costs to pay attention to character of murmur, his duration, and also on position of segments, at that a sound appears or increases, disappears.

Determination of volume of motions is in joints.

At violation of mobility in a joint, depending on the degree of limitation or increase of her, distinguish the next states: acampsia, low moving, contractures, surplus mobility, pathological mobility.

Mobility must be checked up from determination of volume of active motions that executes patient, in direction that is assumed by the norm of the investigated joint. Passive motions check in those cases, when active motions limit. Measure the volume of active and passive motions by means of goniometer.

An acampsia is the state of joint, at that active and passive motions are absent. The functional estimation of extremity depends on position of ankylosis joint. Distinguish acampsias in vicious position: bending, unbending, coercion, taking, external or internal rotary press and acampsias in functionally advantageous position.

Low moving is determined as the state of joint with maintenance of insignificant mobility. Often low moving of joint is preceded to development of fibrotic acampsia.

Contractures is characterized by limitation of both active and passive motions. Functional description of contractures is analogical to the acampsias - functionally comfortable or unprofitable positions.

Pathological mobility during shaft is the pathognomical sign of break. However checking up her at other displays of break (pain, slight swelling, hemorrhage, deformation of segment) is not necessary, because at implementation of this research it is possible additionally to injure muscles and vessels the sharp edges of the broken bone, and also to cause interposition of soft tissues between fragments.

It is done measuring of length and circumference of extremities both damaged extremity and healthy. The obtained data compare, that gives imagination about the degree of anatomic and functional violations. Length of extremities can be certain on an eye by comparison of symmetric cognitive points.

Determination of muscular force. At an estimation forces of muscles take into account the degree of myatrophy, activity of muscular reduction and volume of executable motions.

Muscular force is determined by the method of action and counteraction, estimated on the fiveball system, taking into account expressiveness of atrophy, force of resistance and volume of motions.

Determination of function. A doctor watches that, how a patient executes ordinary motions and certain work. For lower limbs the best criterion of capacity is standing and walking, squat, seat, putting on of shoe.

At description to the function of lower limbs take into account the type of step, ability to walk independently, by a permanent help, with the use of additional adaptations (bacilli, crutches, orthosis et cetera).

The degree of function of overhead extremities is estimated by the capacity of patient for self-service and implementation of the coordinated motions.

Materials for self-control

A. Questions for self-control:

- Order and sequence of inspection sick with inflammatory specific, tumor and tumor diseases of musculoskeletal system.
- Features of objective inspection of sick with inflammatory specific, tumor and tumor diseases of musculoskeletal system.
- Methods of conservative treatment of damages are locomotorium.
- A testimony is to operative treatment.

B: Tests for self-control: see an appendix

C: Tasks for self-control: see an appendix

Recommended literature

The main literature:

1. Traumatology and orthopedics : textbook for students of higher medical educational institutions / edited by Golka G. G., Burianov O. A., Klimovitskiy V. G. – Vinnytsia : Nova Knyha, 2018, – 400 p. : il.
2. Venger V. F. Serbyuk V. V. Rashed Mochammad. Traumatology and orthopedics. – Odessa: Druk, 2006. – 248 c.
3. Bur'yanov O. A. Traumatology and Orthopedics. K.: Medicine, 2007. – 216 c.

Background Information:

1. David J. Dandy, Dennis J. Edwards Essential Orthopaedics and Trauma, Churchill Livingstone Elsevier, 2009, - 490 p.
2. David L. Hamblen, A. Hamish R. W. Simpson Adams's Outline of Orthopaedics, Churchill Livingstone Elsevier, 2010, - 485 p.
3. Ronald McRae, Max Esser Practical fracture treatment, Churchill Livingstone Elsevier, 2008. – 447 p.
4. Ronald McRae Clinical orthopaedic examination, Churchill Livingstone Elsevier, 2010. – 323 p.
5. David J. Dandy, Dennis J. Edwards Essential Orthopaedics and Trauma Churchill Livingstone Elsevier, 2009, - 490 p.
6. Borland WA. Illustrated Medical Dictionary. - 29th edition. -Philadelphia, 2003.

Internet resources:

<https://www.4tests.com/usmle#StartExam>
http://goto.grockit.com/kaplan/quizzes/medical.php?utm_source=kaptest&utm_medium=kaptest&utm_term=us-med&utm_content=try-us-for-free-us-med&utm_campaign=usmle-step1-qzzer
<http://www.nejm.org/multimedia/interactive-medical-case>

<http://www.roadto10.org/ics/>
http://www.medscape.com/index/section_1436_0
<http://www.webmd.com/a-to-z-guides/quizzes/>
http://www.medicinenet.com/quizzes_a-z_list/article.htm
<https://medlineplus.gov/surgeryvideos.html>
<http://www.bidmc.org/yourhealth/bidmcinteractive/quizzes.aspx>
<http://hardinmd.lib.uiowa.edu/index.html>
<https://www.youtube.com/user/nucleusanimation/videos>
<http://www.medicalstudent.com/>
http://www.thestudentroom.co.uk/wiki/Resources_for_Medical_Students
<http://www.nucleuscatalog.com/>

Methodical development was prepared:
PhD, assistant

Iu.M. Piven