

MINISTRY OF HEALTH OF UKRAINE
O.O. BOHOMOLETS NATIONAL MEDICAL UNIVERSITY

**FLACCID PARALYSIS.
CLINIC. PRINCIPLES OF PREVENTION AND TREATMENT.**

WORKBOOK

for independent work of the 5th year students
educational discipline "Traumatology and Orthopedics"
directions "Medicine"
specialty "Curative care"
Department of Traumatology and Orthopedics

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Introduction

One of the effective means of organizing an independent work of students on topics of disciplines assigned for independent study is the work of a student with his/her workbook. Work with the workbook should begin with the acquaintance with the key issues on the topic. The next step includes the acquaintance with the list of sources from which the student can find the answers to the posed questions. For more deep study of the problem students can visit professional websites.

Having become acquainted with the theory, the student needs to assess his/her degree of mastering the material. In this regard, he/she resolves the proposed tasks; answers test questions on the topic. Students should pay particular attention in preparing for classes to the required minimum of practical skills to be mastered. In the relevant sections of textbooks, manuals, he must glean the information that he needs for mastering further practical skills.

Arrangement of independent work with the use of workbook is conducted as follows: tutor provides the workbook to a student in digital format (to be downloaded from website of the Department), or in printed version; later the students do the tasks at their extra-curricular time, whereupon the tutor checks and assesses them **at the initial stage of practical classes.**

Criteria for assessing the tasks in the workbook

Each task requires a separate approach when assessing the quality of its implementation under particular criteria. And yet, with a 5-point evaluation ranking for each type of tasks, one should observe the general didactic criteria, namely:

“5” is graded when the student:

1. Executed the work w/o errors and deficiencies.
2. maximum one deficiency.

“4” is graded when the student executed the work in full but made:

1. maximum one gross error and one deficiency.
2. maximum two deficiencies.

“4” is graded when the student executed at least one half of a work correctly or made:

1. maximum two gross errors or one gross and one mild errors and one deficiency.
2. maximum two mild errors or one mild error and three deficiencies.
3. In the lack of errors but when four or five deficiencies are available.

“2” is graded when the student made:

1. number of errors (deficiencies) exceeding the limit when grade “3” could be applied.
2. In case less than half of work is completed.
3. Failed to start the work.

Term	Determination
Poliomyelitis (Heine-Medina disease)	This acute infectious virus disease with a lesion of gray substance of the anterior horns of the spinal cord.
abortive form	Characterized with acute beginning with hyperthermia , catarrhal of nasopharynx, cough, runny nose , disorders of the gastrointestinal tract.
meningeal form	Develops acutely, short prodromal period, the presence of meningeal symptoms (rigidity of the occipital muscles , Kernig and Brudzinsky symptoms).
paralytic form	Severe form, paralysis appear on the 5th-10th day of the disease, their appearance precedes the prodromal and meningic periods. Paralysis - peripheral, flabby, muscle tone decreases, muscle atrophy, tendon reflexes are absent . Depending on the location of the lesion (in the anterior horns, motor nucleus of the trunk, in the cortex, subcortical ganglia, cerebellum), distinguish: a) spinal (b) pontinuous (ПОНТИННАЯ) (c) bulbar (d) encephalitis.
recovery period	Long recovery period. It starts with the least affected muscles. Function of deeply affected muscle is not completely restored.
vaccine	This is a medical product designed to create immunity to infectious diseases. It is killed or weakened microorganisms, or products of their life.

Subject. Flaccid paralysis. Clinic. Principles of prevention and treatment.

Learning objectives:

1. The relevance of the problem of poliomyelitis in the present.
2. Be able to clinically identify flaccid paralysis.
3. Interpret the most characteristic deformations of the upper and lower extremities.
4. Correctly formulate a clinical diagnosis, conduct differential diagnosis.
5. To substantiate the indications for conservative and operative treatment of patients.
6. Obtain the principles of social and labor rehabilitation.

The student should know:

1. The concept of flaccid paralysis
2. Anatomical structure of the hip, knee and ankle.
3. Concept of poliomyelitis, etiology, pathogenesis, principles of prevention.
4. Forms of poliomyelitis. Periods of the disease.
5. Main neurological symptoms that are typical for diseases characterized by flaccid paralysis.
6. The concept of discordant and concordant contractures.
7. Orthopedic aspects of poliomyelitis treatment. Features of surgical treatment.
8. What are the complications after the prevention of poliomyelitis?

The student should be able to:

1. Examine patients with flaccid paralysis.
2. Measure the length of the limb (relative, anatomical, functional).
3. Determine the circumference of the thigh of the lower leg, shoulder and forearm.
4. Measure the strength of flexor and extensor muscles of the upper and lower limbs.
5. Define the concept of atrophy, hypotrophy, hypertrophy of the soft tissues of the upper and lower limb.
6. Understand the concept of active and passive movements in the joints of the upper and lower extremities. Their definition.
7. Determine the amount of movement in the hip, knee and ankle

8. Analyze a typical clinical picture of poliomyelitis.
9. Interpret laboratory and instrumental diagnostic data in patients with flaccid paralysis.
10. Know the main modern methods of treatment and prevention of poliomyelitis (treatment plan: physiotherapy, medication, orthopedic and surgical treatment).
11. Assign a complex (physiotherapeutic, medicamental, orthopedic) treatment in patients with poliomyelitis.
12. Identify medical , social , labor forecast.
13. Outline the main areas of prevention and their complications.

The main terms of the topic are:

Assignments for the independent work of the topic

Task 1

1. Peculiarities of the anatomical structure of the hip, knee and ankle.
2. What muscles flex, extends, adduct and abduct an the thigh? Please specify places of their attachments ?
3. What muscles flex and extends the shin? What are the locations of their attachment?

Task 2

Based on the study of basic and additional literature, give a written answer to the following questions:

1. General concepts of the clinical features of poliomyelitis, clinical forms, stages, the degree of neurological disorders.
2. Clinical consequences of poliomyelitis in cases of upper and lower extremities.
3. Clinical features of the consequences of poliomyelitis with defeats of the muscles of the back.
4. Principles of prevention and conservative orthopedic treatment of poliomyelitis.
5. Methods of reconstructive operations in the aftermath of poliomyelitis (tendo-muscular plastics, operation on bones and joints).
6. Social and labor rehabilitation with consequences poliomyelitis .

Task 3

1. A child, 9 years old, entered the clinic complaining about a difficult walk. At the age of three she suffered a disease that was characterized by an increase in temperature to 40 degrees, a general malaise, an eclipse of consciousness. After 3 days, parents noticed a violation of the function of the lower extremities. He was treated in the infectious department, where he underwent conservative treatment. There has come a restoration of the function of the muscles of the lower extremities, but active extension of the hips is impossible, the foot is brought and is in the position of plantar flexion.

Answer the following questions:

1. What disease does the child have?
2. What muscles are affected?
3. What is the clinical diagnosis?
4. Make a treatment plan.

2. The child does not walk for 5 years, could sit by itself, can stand holding hands for an extraneous object. During standing, there is flexion of the thighs, shins, plantar flexion of the feet. Minor arbitrary movements of the upper limbs. Active movements such as "folding knife", increased tendon reflexes.

Answer the following questions:

1. What disease has the child suffered?
2. Carry out a rationale for the clinical diagnosis.
3. Make a plan for treating the patient.

Main literature:

1. Yumashev G.S. Traumatology and Orthopedics . M. "Medicine", 1983.
2. Smirnova L.A., Shumada I.V. Practical lesson on orthopedics and traumatology. - M., " Health ", 1984.
3. Prudnikov V.F. Diseases and injuries of the musculoskeletal apparatus. - M., " Health ", 1984
4. Sinelnikov R.D. Atlas of Anatomy. - M., 1972 - T.1.
5. Sklyarenko E.T. Traumatology and orthopedics. - M., 2005
6. Methodical development of the department.

Additional literature:

1. Diagnosis, therapy and prevention of infectious diseases in polyclinics / Ed. MA Andreychina. - 2nd edition. - L, "The Medical Newspaper of Ukraine ", 1996
2. Mezhenenina E., Usikova T.Y. Paresis and paralysis in orthopedic pathology . K. " Health ", 1983.

Tasks for self-control:

Task 1.

The child has been inspected by a pediatric orthopedist for 5 years, the flexural-adductive contractures of the hip and knee, equine deformity of the feet, increased tendon reflexes, Babinsky's symptom are noted during examination. Diagnosis ?

- A. poliomyelitis
- B. rheumatoid arthritis
- C. scoliosis
- D. Cerebral palsy
- E. Aseptic necrosis of the femoral head

Task 2.

A child of 5 years, girl, was examined by a pediatric orthopedist, a preliminary diagnosis was established: poliomyelitis. Clinical signs allowed to establish this diagnosis?

- A. acute manifestation + influenza-like syndrome
- B. after elimination of catarrhal phenomena, were noted twitching muscles, impaired movement in the joints of the lower extremities.
- C. Decrease tendon reflexes
- D. Hypotension and muscle hypotrophy
- E. All of the above

Task 3

To the child of 7 years. Parents complained about the violation of posture, the asymmetrical location of the shoulder-lines, the inability to sit. The child suffers from poliomyelitis. On examination: flaccid paresis of upper and lower extremities, equinovarus deformity of the feet. Diagnosis ?

- A. Poliomyelitis , equinovarus deformation of feet
- B. Consequences of the transferred poliomyelitis , equinovarus deformation of feet
- C. Poliomyelitis, residual stage , equinovarus deformation of feet
- D. Poliomyelitis, residual stage, polo-varus strain of paralytic feet scoliosis
- E. Disease Shershevsky-Turner

Tests for self-control:

1. Restriction of movements in the joint in all planes is:
 - A. contracture of the joint
 - B. stiffness
 - C. bone ankylosis
 - D. rigidity
 - E. joint block
2. Poliomyelitis is:
 - A. The disease, caused by brain damage due to the action of pre-, intra-, postnatal factors and is clinically manifested by motor and intellectual disorders different degree gravity
 - B. Acute infectious viral disease with predominant lesion of the striopallidal system, followed by

development hyperkinetic- hypotonic syndrome .

- C. Acute infectious viral disease with predominant defeat of meningeal shells of the spinal cord
- D. Acute infectious viral disease with predominant myelin sheath damage
- E. Acute infectious viral disease with predominant lesion of the anterior horns of the spinal cord

3. Flaccid paralysis is observed when:

- A. Multiple sclerosis
 - B. Affect of subcortical nuclei
 - C. Affect the first motoneuron
 - D. Affect the second motoneuron
 - E. Affect corticospinal pathways
4. With flaccid paralysis it is noted:
- A. Decrease of tendon reflexes , decrease muscular tonus
 - B. Absence of tendinous reflexes , atony muscles
 - C. Decrease or absence of tendon reflexes, decrease or absence of muscle tonus , hypotrophy muscles
 - D. Increased tendon reflexes , increased muscular tonus, clones
 - E. Increased tendon reflexes, decrease muscular tonus , clonus

5. In what variant are the stages of poliomyelitis listed?

- A. Initial (preparative), paralytic , regenerative , residual (Residual)
- B. Abortive , neurotic , residual
- C. Light, medium, heavy
- D. Paralysis , residual
- E. Acute , subacute , chronic

6. In what variant are the stages of poliomyelitis listed?

- A. Initial (preparative), paralytic , regenerative , residual (Residual)
- B. Abortive , neurotic , residual
- C. Light, medium, heavy
- D. Paralysis , residual
- E. Acute , subacute , chronic

7. For the eliminating of equine feet deformation at poliomyelitis use the following operations:

- A. Vanstein's operation
- B. Laterzhe's operation
- C. Streera's operation
- D. Zatsepin's operation
- E. McBride's Operation

8. In patients with flaccid paralysis, the following deformity of the spine develops:

- A. Paralytic scoliosis
- B. Idiomatic scoliosis
- C. Excessive deepening of lumbar lordosis
- D. Round back
- E. Flat back or strengthening of lumbar lordosis due to bending contracture

9. The cause of flexion contracture in poliomyelitis:

- A. Flaccid paralysis
- B. Defect of position
- C. Atony of the posterior group of hip
- D. Atony of the quadriceps
- E. Atony of gastrocnemius muscle

10. At what form of poliomyelitis do not develop paralysis:

- A. residual
- B. neurotic
- C. abortive

- D. paralytic
- E. preclinical

11. At what form of poliomyelitis paralysis or paresis develops:

- A. residual
- B. neurotic
- C. abortive
- D. paralytic
- E. preclinical

12. Flexural contracture in the hip and knee are:

- A. Concordant contracture
- B. Discordant contracture
- C. Combined contracture
- D. Result of irregular position

E. The result of hypertension muscle synergists 13. Zagonal contracture in the ulnar joint are :

- A. Concordant contracture
- B. Discordant contracture
- C. Combined contracture
- D. Result of irregular position
- E. The result of hypertonic muscle synergists