State Examination Program
for surgical diseases
for specialty 1-79 01 01 General Medicine
for students of medical faculty of international students
Program approved by the Methodological Commission of Surgical disciplines of the Educational Institution “Belarusian State Medical University” «___»________ 2017. (protocol N____)

Head of the Methodological Commission of Surgical disciplines
Professor A.V. Prochorov

Reviewed and approved at a meeting of the Board of Faculty of General Medicine of the Educational Institution “Belarusian State Medical University” «___»________ 2017. (protocol N____)

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EXPLANATORY NOTE

Section of Surgical Diseases in the training of medical doctors takes an important place as a doctor of any profile in their daily work meets patients with acute surgical pathology that require prompt diagnosis and emergency care. In addition, a number of medical specialties (gynecology, orthopedics and traumatology, ophthalmology, urology, ENT diseases, oncology) is impossible without the knowledge of the main sections of the course of surgical diseases, and without acquiring the skill of operational techniques and rules of performing the procedures.

The aim of the teaching of surgical diseases and related surgical disciplines in a complex training of medical doctor is studying the etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment and prevention of major surgical diseases, the studying of indications and the general principles of conservative and surgical treatment, a certain amount of practical skills.

The objectives of teaching surgical diseases:

Students should know:
- principles of organization of surgical care in the Republic of Belarus;
- etiology, pathogenesis, clinical manifestations of major surgical diseases;
- diagnosis and differential diagnosis of surgical diseases, principles of diagnosis;
- complications of major surgical diseases;
- modern methods of treatment, indications;
- methods of prevention and rehabilitation of patients with the most common surgical diseases.

Students should be able to:
- use methods of physical, laboratory, functional and instrumental methods of examination;
- master the skills of the most common medical manipulations;
- maintain medical records;
- conduct community health education, evaluate disability.

The list of related subjects, with indication of sections (topics), learning which is necessary for students to study surgical diseases:
- normal anatomy: anatomy of organs and systems (blood supply, innervation), the study of surgical diseases which are provided by the program;
- normal physiology: basic physiological functions of the organs and systems of the human body;
- biological chemistry: biochemical parameters of the studied systems and states in health and disease;
- microbiology, virology, immunology: bacteriological and immunological methods of diagnosis of surgical infections, microbiological bases of chemotherapy and antiseptics;
- pathological physiology: basic pathophysiological processes underlying the development of the most frequent surgical diseases and injuries;
- radiologic diagnostics: X-ray semiotics of traumatic injuries and diseases of the chest and abdominal cavities;
topographical anatomy and operative surgery: topography of the great vessels and nerves, fascial and cellular spaces of the studied areas, topographic anatomy of the internal organs, the basics of operational techniques and principles of performance of basic surgical procedures;
pathology: morphological changes and characteristics of various surgical diseases;
propaedeutics of internal diseases: scheme of examination of patient and writing the history of the disease;
Pharmacology: drugs used in the treatment of surgical diseases, the principles of rational pharmacotherapy;
Public Health: analysis of morbidity, mortality; issues of medical statistics for the calculation of basic indicators of average and relative values, confidence limits and the difference of the results of the study, the calculation of morbidity of the population and employed, a graphical presentation of statistical data.

CONTENT OF TEACHING MATERIAL

1. GENERAL SURGERY

1.1 Introduction. History of surgery

1.2. Desmurgy
The concept of bandages and dressings. Types of dressings (the nature of the material used, purpose, fixing method of the dressing, bandages type, nature and purpose of immobilization).

1.3. Antiseptic and aseptic
Prevention of air and droplet infection. The structure and organization of work of the surgical department, its layout, the basic premises and their design. Wards, dressing room, and their equipment. The operating unit, requirements for its placement, design and equipment (preoperative, operating room, sterilization, material, instrumental room, room for anesthesia services, endoscopic, etc.). Cleansing of the operation and dressing rooms. The behavior of staff and visitors (students, doctors) in the operating room.


Prevention of implant infection. Contemporary suturing material, classification, requirements. Sterilization of alloplastic, xenoplastic transplants, non-biological materials in plastic surgery and traumatology.

1.4. Bleeding

Methods of temporary and final stop bleeding (mechanical, chemical, physical, biological). Methods for determining the volume of blood loss. Basic principles of acute blood loss management.

1.5. Basics of clinical transfusiology
Principles of water electrolyte balance, daily fluid requirements and losses, volumes of gastrointestinal tract liquids.


1.6. Mechanical injuries
Injuries. Classification. The concept of the industrial, agricultural, residential, street, sports, military injuries. Isolated injury, polytrauma (multiple, concomitant, the combined injury). The organization of trauma patient care.


Crush syndrome: clinical presentation, primary care, treatment guidelines.

1.7. Thermal damage and electric shock

Electrical accident. The mechanism of electric current action to body. Local and general presentation. Primary care and treatment.


1.8. Surgical examination
Special features of trauma and emergent & chronic surgical patients examination (survey, inspection, palpation, measurement of organs or body parts, percussion, auscultation).

General concept about contemporary methods of diagnostics. Indications, contraindications, technique, diagnostic possibilities.

1.9. Surgical operation. Preoperative and postoperative periods


1.10. Surgical infection
Definition and classification of surgical infection.
Chronic specific surgical infection. Bone tuberculosis: etiology, pathogenesis, stages, clinical course of the disease. Treatment.
Acute purulent diseases of synovial (bursitis), serous (pleurisy, peritonitis) membranes and joints (arthritis): etiology, classification, clinical presentation, diagnosis, treatment.

1.11. Necrosis. Lymphatic outflow and circulatory disorders

Bedsores: etiology, pathogenesis, stages, treatment, prevention.

Trophic ulcers: Causes, classification, general principles of treatment.


2. SURGICAL DISEASES

2.1. Pressing issues of surgery.

2.2. Acute and chronic appendicitis.


2.3. Acute pancreatitis.

2.4. Chronic pancreatitis.

2.5. Gallstone diseases. Acute and chronic cholecystitis.

2.6. Complications of cholecystitis.
Concept of postcholecystectomy syndrome, classification, tactics. Mistakes and dangers of hepatobiliary surgery, their causes, prevention and ways of treatment of complications.

2.7. Cholestasis syndrome

2.8. Acute intestinal obstruction.

2.9. Complications of the gastroduodenal ulcers.
Indications for gastrectomy and organ-preserving operations in gastric and duodenal ulcers.
Clinical presentation, diagnostics and treatment of symptomatic ulcers (hormonal ulcers, Zollinger-Ellison syndrome, medicinal ulcers).

2.10. Blunt abdominal trauma.

2.11. Blunt chest trauma.


2.13. Hernias, complications of abdominal hernias.


Complications of the hernias (strangulation, inflammation of hernia, coprostatasis): clinical presentation, diagnostics and treatment. Principles of surgical treatment. Tactics of surgeon in case of doubtful strangulation, spontaneous or forced reposition


2.15. Endoscopy in surgery.

2.17. Diseases of thyroid.


2.19. Suppurative and inflammatory diseases of peritoneal cavity and retroperitoneal space.

2.20. Diseases of the breast.

2.21. Varicose disease.

Anatomical and physiologic data about lymphatic system. Lymphedema of low extremities: classification, diagnostics, treatment. Lymphadenitis, lymphangitis: causes, clinical manifestations, diagnosis, treatment

2.23. Portal Hypertension

Complications after stomach surgery: clinical manifestation, diagnostics, treatment, prophylaxis.

2.25. Gastrointestinal Bleeding.

Topographic anatomy of the mediastinum. Classification of mediastinitis. Treatment principles for mediastinitis of different etiology. Mediastinal drainage rules and types.

2.27. Diabetes Mellitus in Surgery.

2.28. Organizing the ambulatory surgical service. Medical Consultation Commission. Medical Rehabilitation Expert Comission.
2.29. Management and diagnostics features in acute surgical diseases in ambulatory conditions.
Diagnostic abilities in ambulatory conditions. Features of management in acute surgical diseases in ambulatory conditions (at home, in polyclinic, in admission department).

2.30. Surgery of diseases of the heart, aorta and main vessels.

2.31. Acute insufficiency of peripheral blood supply.
Thrombosis and embolism of peripheral arteries at different sites. Acute arterial obstruction syndrome. Clinical manifestations, diagnostics, grades of ischemia, principles of treatment.

2.32. Artery occlusive diseases of low extremities.

2.33. Organs and tissues transplantation.

2.34. Surgical diseases of small intestine and colon.
Topographic anatomy, classification of diseases of small intestine and colon, pathophysiology, clinical manifestations, diagnostics (special methods of investigations), differential diagnosis, treatment. Meckel's diverticulum: clinical

2.35. Diseases of the rectum.

2.36. Diseases of the esophagus and diaphragm.

3. Traumatology and Orthopaedics.

3.1. General traumatology.


3.1.2. Bone regeneration in normal and pathology.
3.1.3. **Multiple and associated injuries.**

Definition of "polytrauma": multiple, associated, combined injuries, their characteristics. Clinical features of polytrauma (syndrome of mutual burdening, incompatibility of therapy, acute complications of injuries - shock, massive hemorrhage, toxemia, acute renal failure, fat embolism, thromboembolism, etc.).

Emergency medical care on the prehospital stage: revealing the life-threatening conditions, methods of their elimination in patients with injuries of the musculoskeletal system; determining extent of the injury; identifying the dominant damage.


3.1.4. **Open fractures.**


3.1.5. **Local and general complications in trauma.**


3.1.6. **Rehabilitation of patients with trauma or orthopaedic disease.**
Definition, basic principles of rehabilitation. Goals of rehabilitation. Types of rehabilitation (medical, social or household and professional). Methods of rehabilitation of patients with injuries or diseases of musculoskeletal system.

3.2. Local Traumatology.

3.2.1. Features of examination of patients with injuries and diseases of the musculoskeletal system.

Types of patients position with pathology of the musculoskeletal system. Methods for determining the axis of the limb and spine. The main types of deformation of axis of the limb and spine. Methods of palpation and percussion. Methods for determining the range of motion in joints. Methods for measuring the length and circumference of the limb. Types of limb shortening, the methods of their determination. Deformity of the spine (scoliosis, kyphosis, lordosis). Changes in gait (limp, its types).

The absolute and relative clinical signs of fractures, dislocations. Types of displacement of bone fragments and methods of their determination. Special methods of diagnosis in traumatology and orthopaedics. Indications for their use. Interpretation of their data. Radiographic signs of fractures, dislocations, and the most common orthopaedic diseases.

3.2.2. Fractures and dislocations of the clavicle. Fractures of the shoulder.


3.2.3. Injuries of the elbow, forearm and wrist.

fractures (Kolles and Smith fractures): mechanism of injury, clinical manifestations, diagnosis, medical care and treatment. Rehabilitation.


Fractures of the metacarpals and phalanges: diagnosis and treatment.

3.2.4. Pelvic injuries.

3.2.5. Spinal injuries.


3.2.6. Femur fractures.
Trochanteric fractures - the mechanism of injury, clinical manifestations, diagnosis, treatment.
Diaphyseal femur fractures - classification, mechanism of injury, mechanogenesis of displacement of fragments depending on the level of the fracture. The clinical signs, diagnosis, treatment. Union timing. Prevention of complications. Outpatient management of patients with femur fractures.

Fractures and dislocations of the patella - mechanism of injury, clinical signs, diagnosis, treatment.
Fractures of the tibialcondyles. The mechanism of injury, clinical manifestations, diagnosis, treatment.
Injuries of the ankle ligaments - a differential diagnosis, treatment.
Ankle fractures - classification, clinical signs, diagnosis, conservative and surgical treatment.
Fractures of the talus and calcaneus - the mechanism of injury, clinical manifestations, diagnosis, treatment.

3.2.8. Traumatic dislocations of the shoulder, forearm and hip joints.

3.3. Orthopaedics

3.3.1. Congenital dislocation of the hip.

3.3.2. Congenital clubfoot.

3.3.3. Congenital muscular torticollis.
Prevalence. Etiology. Pathological anatomy of different types of torticollis. Classification. Clinical features. Treatment according to the severity, type of pathology and age of the child. Rehabilitation of patients.

3.3.4. Osteoarthritis.

3.3.5. Posture disorders. Scoliosis.
Definition of "posture". Types of posture disorders. Diagnosis and prevention of posture disorders.

3.3.6. Bone tumors.

3.3.7. Osteochondropathies.

3.3.8. Static foot deformities.

4. ONCOLOGY
4.1. Organization of oncological care.

4.2. Skin tumors
Classification of skin tumors.

4.3. Thyroid cancer
Differential diagnosis of a thyroid cancer with benign diseases. Medical tactics in nodal pathology of a thyroid cancer.

4.4. Breast cancer and benign diseases of mammary gland

4.5. The tumors of the esophagus, stomach

4.6. **Colorectal cancer**


4.7. **Lung cancer and mediastinum tumors**


Diagnostics and differential diagnosis of mediastinum tumors Principles of treatment of mediastinum tumors

4.8. **Renal carcinoma and retroperitoneal tumors**


4.9. **Lymphomas**


4.10. **Liver (primary and metastatic) and pancreatic tumors**
Clinical presentation of pancreatic tumors of different localizations in pancreas. Diagnosis of pancreas cancer. Treatment.

5. QUESTIONS OF ADJACENT DISCIPLINES

5.1. ANESTHESIOLOGY AND REANIMATOLOGY

5.1.1. Types of modern Anesthesia.
Types of modern General Anesthesia (GA). Stages and clinical signs of GA. Common and special components of the GA. Types of modern inhalation and noninhalation anesthetics. Indications, contraindications for GA. Complications, their prevention and treatment.

5.1.2. Preparation for anesthesia.

5.1.3. Methods of the patient's monitoring applied in anesthesiology and intensive care.
Methods of the patient's condition objective control, applied in anesthesiology and intensive care. The list of necessary monitoring parameters for elective and emergency surgery.

5.1.4. Resuscitation and intensive care in the early postoperative period
Phases of the postoperative period. Importance of a painful syndrome in the mechanism of functional disorders development in the postoperative period.
The basic forms of acid-base balance disorders, pathophysiology. Clinical manifestations, correction principles.
The main types of water and electrolyte balance disorders, pathophysiology. Clinical signs, intensive therapy.

5.1.5. Terminal conditions. Cardio-pulmonary resuscitation (CPR)
5.1.6. Intensive therapy of Acute Circulatory Disorders
Shock. Classification of shock (Hypovolemic, Cardiogenic, Distributive), pathophysiology, principles of diagnostics and intensive therapy. Cardiogenic shock. Pathophysiology, principles of diagnostics and intensive therapy.

5.1.7. Intensive therapy of Acute Respiratory Failure (ARF)

5.1.8. Sepsis

5.1.9. Acute poisoning
Modern clinical toxicology. General principles of acute poisoning treatment (gastric lavage, method of forced diuresis, antidote use, extracorporeal detoxication). The choice of method of detoxication, depending on the nature of the poison and the clinical situation.

5.2. UROLOGY

5.2.2 Chronic renal failure: etiology and pathogenesis, stages, treatment.
5.2.3. Acute urinary retention: causes, symptoms, diagnosis, first aid. Catheter types.
5.2.4. Macrohematuria: types, causes, diagnostic and treatment approach.
5.2.7. Chronic pyelonephritis: etiology and pathogenesis, stages, diagnosis, treatment, follow up.
5.2.9. Micturation disorders, causes, treatment approach.
5.2.10. Acute orchiepididymitis: symptoms, diagnosis, treatment approach.
5.2.11. Acute and chronic prostatitis: classification, symptoms, diagnosis, treatment.
5.2.13. Renal and bladder tumors: symptoms, diagnosis.
5.2.18. Cryptorchidism. Symptoms. Treatment.

5.3. NEUROSURGICAL DISEASES

5.3.1. Classification of traumatic brain injury.
5.3.4. Fractures of the roof and base of the skull. Clinic, diagnostics, treatment.
5.3.5. Severe traumatic brain injury. Clinic, diagnostics, principles of treatment.
5.3.8 Diffuse axonal injury: the biomechanics of injury, pathogenesis, clinical manifestations, diagnosis, treatment principles.
5.3.9. Depressed fractures of the cranial vault: clinic, treatment principles.
5.3.10 Epidural hematoma (stage, clinical picture, diagnosis, treatment).
5.3.11 Subdural hematoma (stage, clinical picture, diagnosis, treatment).
5.3.12 Surgical treatment of traumatic intracranial hematomas.
5.3.13 Traumatic and spontaneous intracerebral hematoma: clinical, surgical treatment principles.
5.3.14 Metastatic brain tumor: etiology, clinical features, diagnosis, treatment principles.
5.3.15 Brain abscesses: etiology, clinical features, differential diagnosis, treatment.
5.3.16. Classification of brain tumors.
5.3.18. Pituitary adenomas: clinical features, diagnosis, surgical treatment principles.

5.3.19 Aneurysmal subarachnoid hemorrhage: periods, clinic, diagnostics, treatment.

5.3.20 Arterial (saccular) aneurysm of the brain. Periods, clinical picture, diagnosis, treatment principles.

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