

GUIDELINES FOR ELECTIVE CLASSES
«MICROSURGICAL TECHNIQUE»
FOR 3RD YEAR STUDENTS OF THE FACULTY OF FOREIGN STUDENTS

PRACTICAL STUDY №1

Topic: INTRODUCTION TO MICROSURGERY

I. Questions

1. Microsurgical technique as a modern trend in operative surgery.
2. Objects of the microsurgical operations.
3. Principles of microsurgical operations.
4. Optical devices for microsurgical operations, structure and working principles.
5. Instruments in microsurgery and specific requirements to it.
6. The needles and suture material in microsurgery.

II. The practical part

1. Structure of operating microscope.

PRACTICAL STUDY №2

Topic: TECHNICAL SUPPORT OF MICROSURGICAL OPERATIONS

I. Questions

1. Workplace of the microsurgeon.
2. The external and internal factors of the hand's tremor.
3. Manual training of microsurgeon (gymnastics for hands).
4. Installation of configurations of the operative microscope at different magnifications.
5. Manipulations with needle and filament during microsurgical operations.

II. The practical part

1. Installation of the microscope and organization of microsurgeon`s workplace.
2. Stereotactic skills training.

PRACTICAL STUDY №3

Topic: BASICS OF MICROSURGICAL TECHNIQUE

I. Questions

1. Manipulations with needle and filament during microsurgical operations.
2. Methods for forming microsurgical loops and nodes.
3. Training exercises in the formation of knots and loops for microsurgical operations.
4. Single microsurgical sutures.
5. Continuous microsurgical sutures.
6. Assisting during microsurgical operations.

II. The practical part

1. Training exercises in the formation of knots and loops.
2. Training exercises in the formation of single and continuous microsurgical sutures.

PRACTICAL STUDY №4

Topic: MICROSURGICAL TECHNIQUE IN OPERATIONS ON BLOOD VESSELS

I. Questions

1. Types of arteries and veins. Features of the structure of the vascular wall.
2. Traditional vascular suture in surgery: requirements, techniques. The features of working with the artery and vein in microsurgical vascular suture.
3. Types of microvascular anastomoses. Features of microsurgical technique with arterial and venous anastomosis ("end to end", "end to side").
4. Microvascular grafts (arterial, venous) and their use for replacement of defects of arteries and veins.

II. The practical part

1. Uninterrupted manual suture technique on the blood vessel.
2. Interrupted manual suture technique on the blood vessel.

PRACTICAL STUDY №5

Topic: MICROSURGICAL TECHNIQUE IN OPERATIONS ON THE LYMPH VESSELS AND NODES

I. Questions

1. Topographic-anatomical features of the structure of lymphatic vessels, lymph nodes.
2. Diagnostics of diseases and pathologies of the lymphatic system.
3. Microsurgical technique of lympho-venous anastomoses.

4. Microsurgical transplantation of vascularized lymph nodes.
5. Alternative ways to treat lymphedema.

II. The practical part

1. Technique of overlay microsurgical suture on the venous vessel (with the use of laboratory animal).

PRACTICAL STUDY №6

Topic: MICROSURGICAL TECHNIQUE IN OPERATIONS ON PERIPHERAL NERVES.

I. Questions

1. Formation of somatic nerve plexus, structure of peripheral nerves.
2. Types of microsurgical operations on peripheral nerves.
3. Types of sutures on the peripheral nerves (epineural, perineural and combined).
4. Transplantation of nerve (technique preparation of graft and its transplant).
5. Evaluation of the adequacy of the nerve suture.

II. The practical part

1. Technique of epineural and perineural sutures formation.

PRACTICAL STUDY №7

Topic: MICROSURGICAL TECHNIQUES FOR TENDONS SURGERY

I. Questions

1. The structure of the flexor and extensor tendons on the hand.
2. Clinical characteristics of tendon injuries.
3. Basic principles of treatment of open and closed tendon injuries of the hand and fingers.
4. Types of tendon sutures, their assessment.

PRACTICAL STUDY №8

Topic: MICROSURGICAL TECHNIQUES IN TRAUMA AND GENERAL SURGERY

I. Questions

1. Topographical features of neurovascular bundles hand, forearm, leg and foot.
2. Clinical characteristics of hand and fingers injuries.
3. Basic principles of debridement of open injuries of hand and finger.
4. Microvascular free muscle transplantation.
5. Microvascular free transplantation of bones and joints.

II. The practical part

1. The experimental operations on the animal muscle.

PRACTICAL STUDY №9

Topic: REPLANTATIONS OF LIMBS

I. Questions

1. The concept about the limb replantation, indications and preclinical stage.
2. Stages of replantation, features of technology-linking tendons, nerves, blood vessels, skin defects closure.
3. Postoperative complications of limb replantation (arterial anastomosis failure, venous anastomosis failure, infection and tissue necrosis).
4. Transplantation of the great toe to the hand.

II. The practical part

1. The vascular anastomosis by uninterrupted suture using a simulator.

PRACTICAL STUDY №10.

Тема: FINAL LESSON.

I. Questions

1. Test.
2. Submission of practical skills.

BASIC BOOKS:

1. O'Brien B. M. C. Microvascular reconstructive surgery.
2. Jay I. Sandlow Microsurgery for fertility specialists.
3. Philippe A. Liverneaux, Stacey H. Berner. Telemicrosurgery.
4. Maria Z. Siemionow, Marita Eisenmann-Klein. Plastic and reconstructive surgery.
5. Maria Z. Siemionow. Tissue Surgery.