

BASIC SURGICAL SKILLS

Compulsory subject for second-year students of the Faculty of Medicine

Teacher in charge of the course: Prof. habil. Mihály Boros, M.D., Ph.D., D.Sc., Head of Department

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Course code: AOK-ONKV651 (lecture), AOK-ONKV652 (practice)

Course credit: 3

Course hours per week: 1-hour lectures + 2-hour practices

Prerequisite of registration: Completion of the first three semesters at the Faculty of Medicine. The subject should be taken up and accomplished in 4th semester.

The aim of the subject: To achieve the general level of theoretical surgical knowledge and practical skills necessary for the implementation of invasive techniques that are essential for a general physician.

Acquired competence: By applying principles of asepsis, the student is autonomously able to perform bed-side (hospital) hand disinfection, surgical attire, gowning, gloving, surgical knotting and basic surgical stitches as well as wound management under simulated sterile operating conditions and to autonomously carry out these procedures under sterile clinical conditions (i.e. in the operating theatre) under supervision.

Method: online lectures (7 x 120 min) + online workshops (5 x 60 min) + practices (online and contact practices) (9 x 120 min) according to the individual schedule of the groups (see more on Coospace).

Topics of the lectures (7 x 120 min):

- 1. Asepsis and antisepsis.** Historical background. Surgical infections, sources of infections. Types, classification, risks and prevention of wound contaminations. Sterilization, disinfection. Preparation of the patient before operation: scrub preparation and isolation of the surgical site. Scrubbing, disinfection, gowning and gloving of the operating team. Personnel attire and movement. Basic rules of asepsis in the operating room. Postoperative wound management. Surgical antisepsis. Design and equipments of the operating room, basic technical background. Operating room personnel and their duties. Positioning of the patient on the operating table. Positioning.
- 2. Surgical instruments.** Basic surgical instruments, special surgical tools and technologies, suture materials. Wound closure (sutures, clips, adhesive strips). Imperfections of suturing techniques. Removal of sutures. Drainage.
- 3. The operation.** Basic surgical interventions. Indications for an operation, informed consent, operative risk, the surgeon's responsibility. Preoperative investigations. Perioperative fluid balance, fluid requirements and fluid therapy. Preoperative preparation of the patient. Local anesthesia (drugs, types of local anesthesia, complications).
- 4. Wounds.** Types and classification of accidental wounds. Wound healing, scar formation. Surgical wounds. Wound closure and its complications. Management of accidental wounds. Dressings, types of bandages. Innovations in wound treatment.
- 5. Bleeding.** Types and classification of hemorrhage. Signs and consequences of blood loss. Bleeding in surgery (pre-, intra- and postoperative bleeding). Factors influencing operative blood loss. Surgical hemostasis (mechanical, thermal, chemical-biological methods). Blood replacement in surgery, autotransfusion.
- 6. Complications.** Definition and classification of complications. Complications related to surgery and anaesthesia. Complications of wound healing. Haemorrhagic complications. Pathophysiology, signs and treatment of hemorrhagic shock
- 7. Basics of minimally invasive surgical interventions.** Historical background. Components of the laparoscopic tower, laparoscopic instruments. Basic procedures, pathophysiological background. Complications.

Schedule of the workshops:

- 1A. Surgical scrubbing and hospital hand disinfection, 1B. Surgical gowning and gloving
- 2A. Basic surgical suturing methods, 2B. COVID gating
- 3A. Cleansing and isolation of the operative field. Positions held in the OR, 3B. Surgical (hand- and instrument-tied) knotting
- 4A. Basic laparoscopic coordination exercises, 4B. Basic laparoscopic suturing and knotting techniques
- 5A. Wound management and bandaging, 5B. Surgical bleeding management

Topics of the practices:

1. Scrubbing, gowning and gloving (personal attendance)
2. Suturing, knotting with an instrument (online)
3. Tying surgical knots with hands (online)
4. Scrubbing, gowning and gloving + isolation of the operative field + suturing + knotting (recap) (personal attendance)
5. Suturing (recap), loading a conventional needle and suturing, continuous/running sutures (online)
6. Tying surgical knots with hands and instruments (recap), knotting under tension + management of bleedings (online)
7. Practical exam (optional)

Criteria for completing the course:**Requested attendance:**

Lectures: at least 75% of lecture video links uploaded to Coospace should be reached.

Workshops: attendance can be verified by fulfilling tasks uploaded to Coospace (answering at least 75% of the tasks) in time.

Practices (according to schedule, for 3 groups at once, in small groups): Rotation between 3 topics within a 3-week period:

For 1 group with personal attendance (if permitted by the actual epidemiological regulations) (optional for students who are in Szeged, not obligatory). This rotation is repeated twice during the semester.

For 2 groups in online (real-time zoom meetings in small groups).

Instruments and materials necessary for surgical suturing and knotting are given to all of the students which have to be used during the ONLINE practices.

Evaluation:

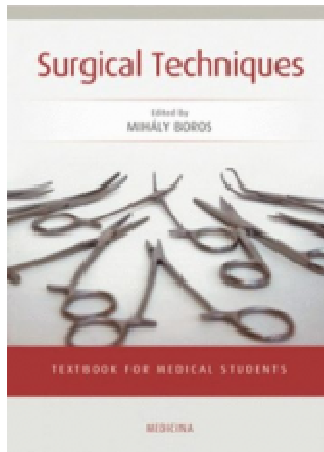
Lecture: end semester examination mark: online Coospace test (5-grade), practice: signature (prerequisite of signature: fulfilling the tasks uploaded to Coospace in time (answering at least 75% of self-evaluating questions)).

Compulsory literature:

Lecture ppts uploaded to Coospace.

Recommended literature:

Tutorial videos.



Surgical Techniques

Textbook for medical students

Mihály Boros (ed.)

Medicina, Budapest, 2009.



Practical Skills Syllabus

Mihály Boros (ed.)

Innovariant Kft., Szeged, 2008.