

„D” module: Microsurgery

Aims

- To teach basic microsurgical techniques, instruments and materials.
- To improve dexterity and eye-hand coordination
- Final aim: the students are going to be able to prepare a vessel or nerve with an external diameter of 0.7-1.2 mm and perform anastomosis on them.

Microsurgery – schedule (postgradual)

Day 1.	L1 (60 min)	Introduction (theoretical, technical and clinical background)
Day 1.	P1 (60 min)	1. Adjustment of the operation microscope 2. Handling of instruments (3. lacing of a thread of a gauze pad)
Day 1.	P2 (60 min)	4. Suturing of a rubber pad 5. Microsurgical knotting (two-handed knotting technique)
Day 1.	L3 (60 min)	Anastomosis techniques - lecture
Day 1.	P3. (60 min)	6. Suturing of silicone tubes (2 mm), end-to-end and end to side anastomoses, microsurgical knotting
Day 1.	P4. (60 min)	7. Suturing of silicone tubes (1 mm), end-to-end and end to side anastomoses, microsurgical knotting
Day 2.	P5. (360 min)	8. (Vessel anastomosis <i>ex vivo</i>) 9. End-to-end vessel anastomosis <i>in vivo</i> (a. carotis)
Day 3-5.	P6 (300 min)	10. End-to-end vessel anastomosis <i>in vivo</i> (a. femoral) 11. Nerve anastomosis <i>in vivo</i>
Day 5.	T (60 min)	Evaluation, test

Microsurgery – schedule (gradual)

Day 1-3.	L1 (3x120 min)	Introduction (theoretical, technical and clinical background)
Day 4.	P1 (120 min)	1. Adjustment of the operation microscope 2. Handling of instruments (3. lacing of a thread of a gauze pad)
Day 5.	P1 (120 min)	Macroscopic knotting
Day 6-7.	P2-3 (2x120 min)	4. Suturing of a rubber pad 5. Microsurgical knotting (two-handed knotting technique)
Day 8.	L3 (120 min)	Anastomosis techniques - lecture
Day 8-10.	P4-5. (2x120 min)	6. Suturing of silicone tubes (2 mm), end-to-end and end to side anastomoses, microsurgical knotting
Day 11-12.	P6-7. (2x120 min)	8. <i>Vessel anastomosis ex vivo</i>
Day 13.	T (60 min)	Evaluation, test

Microsurgery –(gradual)

2010/2011					
	I. semester		II. semester		Total
	Hungarian	English	Hungarian	English	
Enter for the course	40	30	24	16	110
Fulfill the course	40	30	23	15	108
In percentage	100	100	96	94	98
Mean of the marks	5	4,9	4,9	4,7	

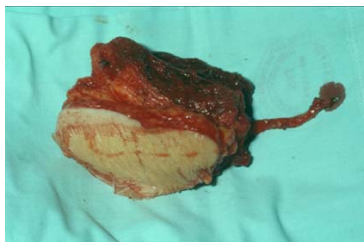
Introduction-III. (clinical applications)

Free pedicled flaps (e.g. latissimus dorsi flap)



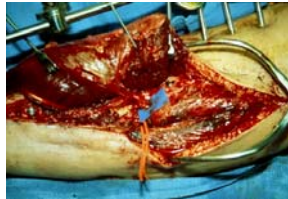
Introduction-IV. (clinical applications)

Free pedicled flaps (e.g. iliac crest flap – OMC)



Introduction-V. (clinical applications)

Free pedicled flaps (e.g. fibular flap – OMC)



Special requirements related to microsurgery

- Special instruments, materials



approximators



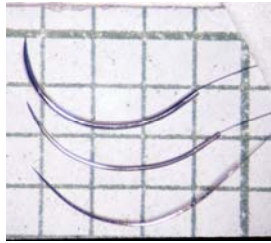
jeweler forceps



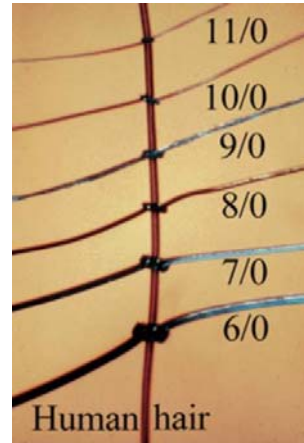
„depth of field“

Special requirements related to microsurgery

- Special instruments, materials



Non-absorbable atraumatic material (polyamide=nylon)



Methodological introduction-I.

Adjustment of the operation microscope



Instrument handling



Lacing



Two-handed knotting technique

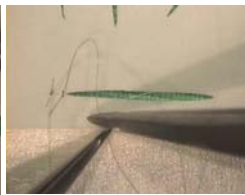


Suturing of rubber pad and tubes

Grabbing of a needle



Suturing a rubber pad

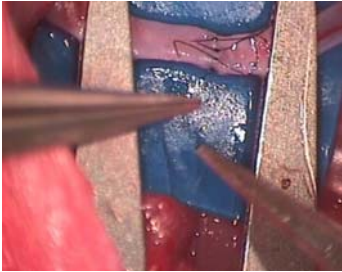


Suturing tubes



Suturing of vessels and nerves

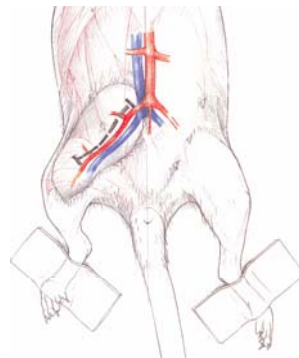
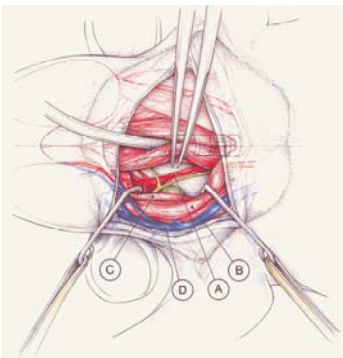
Vessel: end-to-end and end-to-side



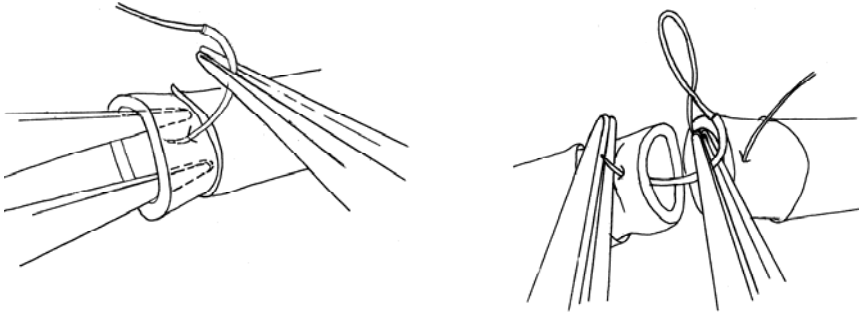
Nerve: epineural and perineural techniques



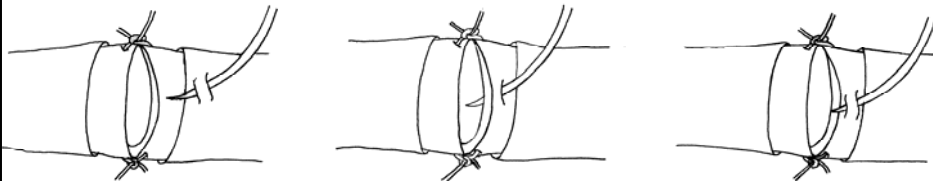
Preparation of animals



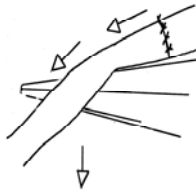
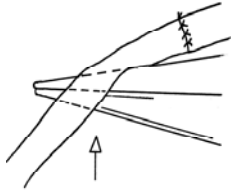
Sutures at „3 o'clock”



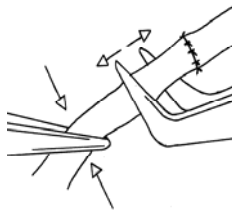
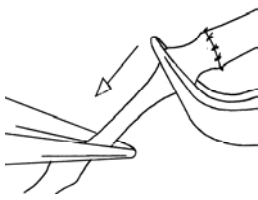
The right depth of the stitches



Patency tests

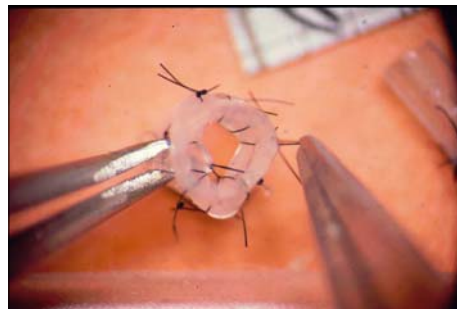
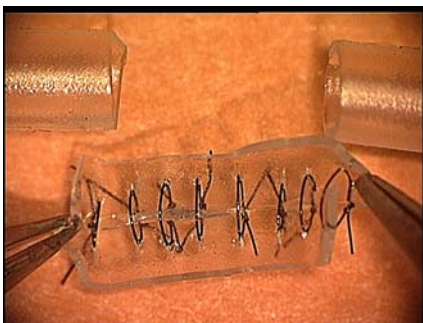


The „up-lift test“



The „emptying-refill test“

Major complications





Background Photo	4	50%	FRANCE	22	2
Name	Y	Group	Country you are from	Age	Gender

OPINION POLL

Your opinion about the course: *Very good (5-)*

Specific suggestions: *Do like kind of lessons and practice in France!*

- Evaluate the course: *5-*

- Evaluate the instructors: *5*

- Evaluate your achievement: *4*

(Very good (5), good (4), average (3), acceptable (2), unsatisfactory (1))

Which of the statements below apply to you? (please feel free to choose more)

- A. I chose the course because I needed the credit.
- B. I was good at other courses at this institute and I wanted to evaluate my skills during more challenging exercises than is why I chose this course.
- C. I want to be a surgeon and I wanted to improve my dexterity (that is why I chose this course).
- D. Based on my experience during the course I would like to do microsurgery in the clinical practice.
- E. Based on my experience during the course I do not feel myself be able to do microsurgery.
- F. The course convinced me that I would be a good surgeon.
- G. Other specific reasons you chose this course: *Free time and love of surgery. No possibilities to do it in France.*