REQUIREMENTS

Semmelweis University, Faculty of Medicine
Name of the managing institute (and any contributing institutes):
Asklepios Campus Hamburg (ACH) of the Semmelweis University

Name of the subject:

in English: Neurosurgery

in German: Neurochirurgie

Credit value: 1

Number of lessons: 6 blocks, in total 14 x 45 min **lecture: practical course: 7 x 45 min**

seminar: 7 x 45 min

Subject type: compulsory course elective course optional course

Academic year: 2022/23

Subject code:

(In case of a new subject, it is filled by the Dean's Office, after approval)

Name of the course leader:

Prof. Dr. Paul Kremer

Dr. Birco Schwalbe

His/her workplace, phone number:

Asklepios Klinik Nord Heidberg, Tangstedter Landstraße 400, 22417 Hamburg, Tel: +49 (0)40 1818 87 33 48

Position:

Chief Physician, MD, Neurosurgery

Date and registration number of their habilitation:

2003

Objectives of the subject, its place in the medical curriculum:

This course is aimed at students with a particular interest in neurosurgery and should deepen their knowledge in this subject. Since neurosurgery has only a small part in the neurology-neurosurgery subject, this course is an outstanding opportunity to get detailed insight into this field. So techniques that can only be touched slightly in the compulsory curriculum, like microsurgical techniques, computer assisted neuronavigation, intraoperative neuromonitoring and introperative fluorescent guided surgery methods for monitoring the blood flow in cerebral vessels will be presented.

Place where the subject is taught (address of the auditorium, seminar room, etc.):
Asklepios Klinik Nord Heidberg Tangstedter Landstraße 400, 22417 Hamburg

Successful completion of the subject results in the acquisition of the following competencies:

- Minimally invasive microsurgical techniques and endoscopically assisted neurosurgical procedures
- Computer assisted neuronavigation

- Intraoperative neuromonitoring
- Fluorescent guided surgery for tumor resection control as well as for monitoring the blood flow in cerebral vessels
- Intraoperative magnetic resonance imaging

Course prerequisites:

Completion of semester 8, intended for students in their 9th and 10th semester.

Number of students required for the course (minimum, maximum) and method of selecting students:

Smallest number of participants: min 4
Largest number of participants: max 10
Method of selecting the participants: Students that applied for the course will be selected by a random number generator, if necessary

How to apply for the course:

Online registration via O365 at a definite time

Detailed curriculum:

(Theoretical and practical lessons shall be given separately by numbering the lessons (by weeks). Please provide the names of the teachers of the lectures and practical lessons and indicate guest lecturers. Do not use attachments!
Always attach a CV for guest lecturers!)

Block 1 (2.3 lessons), Dr. Schwalbe:

Block 2 (2.3 lessons), Dr. Schwalbe:

Block 3 (2.3 lessons), Dr. Schwalbe:

Block 4 (2.3 lessons), Dr. Schwalbe:

Block 5 (2.3 lessons), Dr. Schwalbe:

Block 6 (2.3 lessons), Dr. Schwalbe:

Alternatively Block 7 (multiple lessons), Dr. Schwalbe:

Block 1: 2.3 lessons, Dr. Schwalbe:

- Neuroanatomy to understand neurological deficits in Glioma
- Grading of brain tumors
- Neuronavigation a nessasary tool for brain tumor resection
- How a neurosurgeon interpretes the information
- How does neuromonitoring help the surgeon
- postoperative Therapy (X-Ray, Chemotherapy, Tumor Treating Fields versus best supportive care)

Block 2: 2.3 lessons, Dr. Schwalbe:

- Neuroanatomy, neuromonitoring relevant barin regions
- What to messure (MEP, SEP, AEP, VEP)
- How to use neuromonitoring for operations.
- How a neurosurgeon interpretes the information
- How does neuromonitoring help the surgeon

Block 3: 2.3 lessons, Dr. Schwalbe:

- neurosurgical specials
- wake op (useful tool or hype)?
- intraoperative MRT (useful tool or hype)?
- Fluorescent guided surgery for tumor resection

- Putting all infornmations together to plan a brain tumor resection
- Final questions.

Block 4: 6 lessons, Dr. Schwalbe:

- SHT Grading
- Neurosurgical treatment of SHT
- Pitfalls in SHT management
- Treatment of brain oedema (when to use dexametason?)
- Brain pressure and neurological deficits
- Types of Herniation

Block 5: 2.3 lessons, Dr. Schwalbe:

- Neuroanatomy cerebral blood vessels
- Aneurysm of the brain
- Treatment of aneurysm Coiling/Clipping
- Postoperative treatment (monitoring the blood flow in cerebral vessels)
- Complications
- subarachnoidal bleeding Riscs
- Treatment of different bleedings (surgery or not)

Block 6: 2.3 lessons, Dr. Schwalbe:

- Pathophysiology of the Hydrocephalus
- What is Liquor and why we need it?
- Clinical symptomes of a hydrocephalus.
- Diagnostic of hydrocephalus
- Therapy for acute hydrocephalus (external ventrical drainidge EVD)
- Permanet Therapy of Hydrocephalus (ventriculoperitoneal-/ventriculoartrial-shunt)

Block 7: multiple lessons depending on the operation, Dr. Schwalbe:

As an alternative to several blocks, use in the neurosurgical operating theater

- Examination of the patient
- Planing the operation steps.
- Discussium of the radiological images
- Operation
- Postoperative examination
- Discussion of the operation including planning of further treatment
- Questions

Other subjects concerning the border issues of the given subject (both compulsory and optional courses!). Possible overlaps of themes:

- Neurology-Neurosurgery

Special study work required to successfully complete the course:
(E.g. field exercises, medical case analysis, test preparation, etc.)

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Requirements for participation in classes and the possibility to make up for absences:

- 75% attendance
- Missed classes will be made up for in self-study.

Methods to assess knowledge acquisition during term time:
(E.g. homework, reports, mid-term test, end-term test, etc., the possibility of replacement and improvement of test results)

- Oral contributions

Requirements for signature:

- 75% attendance
- Signed register

Type of examination:

- Oral exam

Requirements of the examination:
(*In case of a theoretical examination, please provide the topic list; in case of a practical exam, specify the topics and the method of the exam)*

- In the oral exam the theory and different methods of neurosurgery will be tested.*

Method and type of evaluation:
(*Method of calculating the final mark based on the theoretical and practical examination. How the mid-term test results are taken into account in the final mark.)*

- 25% Oral contribution
- 75% oral exam

How to register for the examination?:

- 75 % attendance is sufficient as a basic requirement to be admitted to the exam

Possibilities for exam retake:

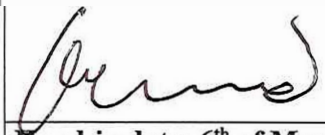
- 2 +1 times

Printed, electronic and online notes, textbooks, guides and literature (URL address for online material) to aid the acquisition of the material:

- BASICS Neurochirurgie

Signature of the habilitated instructor (course leader) who announced the subject:

Signature of the Director of the Managing Institute:



Hand-in date: 6th of May, 2022

Opinion of the competent committee(s):
Comments of the Dean's Office:
Dean's signature:

* potential exam questions:

1.) Why do you have to operate on an acute herniated disc with paresis and not without paresis
2.) What is intraoperative neuromonitoring and neuronavigation used for?
3.) Why is it currently not possible to cure glioblastoma