The University of Pécs
Medical School

DENTISTRY
major

STUDY PROGRAM
2009/2010

Subjects of the
Preclinical module
(obligatory subjects)
## Table of contents

<table>
<thead>
<tr>
<th>Subject</th>
<th>Code</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine Propaedeutics</td>
<td>OSPBPR</td>
<td>3</td>
</tr>
<tr>
<td>Prosthodontics: Basics</td>
<td>OSPFPP</td>
<td>5</td>
</tr>
<tr>
<td>Orthodontics: Basics</td>
<td>OSPFSP</td>
<td>9</td>
</tr>
<tr>
<td>Prosthodontics 1</td>
<td>OSPFL1</td>
<td>11</td>
</tr>
<tr>
<td>Pathophysiology 1</td>
<td>OSPKO1</td>
<td>13</td>
</tr>
<tr>
<td>Pathophysiology 2</td>
<td>OSPKO2</td>
<td>18</td>
</tr>
<tr>
<td>Clinical Radiology</td>
<td>OSPKRA</td>
<td>22</td>
</tr>
<tr>
<td>Microbiology 1</td>
<td>OSPMI1</td>
<td>26</td>
</tr>
<tr>
<td>Operative Dentistry - Propaedeutics</td>
<td>OSPOFO</td>
<td>29</td>
</tr>
<tr>
<td>Oral Radiology</td>
<td>OSPORR</td>
<td>33</td>
</tr>
<tr>
<td>Pathology for dental students 1</td>
<td>OSPPA1</td>
<td>35</td>
</tr>
<tr>
<td>Pathology 2 - Oral Pathology</td>
<td>OSPPA2</td>
<td>48</td>
</tr>
<tr>
<td>Surgical Propaedeutics</td>
<td>OSPSPR</td>
<td>67</td>
</tr>
<tr>
<td>Oral Surgery: Basics</td>
<td>OSPSZP</td>
<td>69</td>
</tr>
</tbody>
</table>
INTERNAL MEDICINE PROPÆDEUTICS

Course director: 2\textsuperscript{nd} Department of Internal Medicine and Nephrology Center

<table>
<thead>
<tr>
<th>DR. ISTVÁN WITTMANN, professor</th>
</tr>
</thead>
</table>

3 credit • Pre-clinical • spring • semester exam

Number of hours/semester: $14 + 28 + 0 = 42$

Prerequisite: OSAEL1 completed + OSANEA completed

Topic

Introducing into internal medicine. The main aim of this topic to develop skills in history taking and physical examinations.

Conditions for acceptance of the semester

The maximum permitted number of absences is 2 practices.

Making up for missed classes

The maximum permitted number of absences is 2 practices. Each further missed practice has to be made up for during the semester period.

Reading material


Lectures

1. Introduction. The principles of physical examination.
2. Techniques of physical examination. Physical examination of the head and neck region.
3. History taking in chest and lung diseases.
4. Physical examination of the chest and lung.
5. Disorders of the respiratory system (pneumonia, bronchial asthma, pleural effusion, tumors).
7. Physical examination of the cardiovascular system II.
8. Symptoms and signs of common cardiovascular diseases (ischemic heart disease, valvular diseases, heart failure).
11. Common diseases of the gastrointestinal tract.
12. Symptoms and signs of the metabolic disorders.
13. Symptoms and signs of common renal diseases (glomerulonephritis, nephrotic syndrome, urinary tract infections, nephrolithiasis.).
Practices
The themes of the practices follow the themes of the lectures.

Seminars

Exam topics/questions
The exam is at bedside and focus on the skill of the student about history taking and physical examination.
PROSTHODONTICS: BASICS

Course director: DR. GYULA SZABÓ, professor
Department of Dentistry, Oral-, Maxillofacial Surgery

3 credit • Pre-clinical • autumn • semester exam

Number of hours/semester: 28 + 14 + 0 = 42

Prerequisite: OSAEL2 completed + OSANEA completed + OSAANY completed

Topic
The aim of this course is to inform students about clinical and technological aspects of fixed and removable partial dentures.

Conditions for acceptance of the semester
According to the Code of Studies.

Making up for missed classes
Not possible.

Reading material

Lectures
1. Principles of removable partial dentures fabrication.
2. Stone cast fabrication and the importance of prosthetic equator.
3. Treatment plan and design of clasp-retained dentures
4. Establishment of occlusal elations
5. Retention of denture bases. Design of retaining elements
6. The odontotechnology of clasps
7. Preliminary arrangement of artificial teeth
8. Clinical requirements of trial denture
9. Flasking and processing of dentures
10. Clinical aspects of RPD insertion
11. Principles of complete denture fabrication
12. Anatomic and functional impression
13. CR recording and trial denture fabrication
14. Repairs and additions os dentures
15. Biomechanical principles of crown preparation
16. Odontotechnology of crowns
17. Working casts and dies
18. Casting of crowns and the casting armamentarium
19. Metal-ceramic crowns, preparation of metal-ceramic crowns
20. Odontotechnology of ceramic layer on porcelain-fused-to-metal restorations
21. Types of jacket crowns. Full ceramic crown preparation
22. Odontotechnology of full ceramic restorations
23. Fixed prosthodontics for devitalised teeth  
24. Odontotechnology of dovel core  
25. Biomechanics of bridges  
26. Odontotechnology of bridges  
27. Consultation  
28. Consultation

**Practices**

1. Impression taking for RPD, design of clasp-retained dentures  
2. Making of record base and occlusion rims  
3. Recording of CR and mounting on articulator  
4. Arrangement of artificial teeth  
5. Arrangement of artificial teeth, clasp bending  
6. Fabrication of custom impression tray  
7. Flaking and processing of denture  
8. Repair of denture  
9. Full veneer crown preparation on molars  
10. Impression, sectional cast and mounting the cast on the articulator  
11. Wax pattern fabrication  
12. Full ceramic crown preparation on upper front teeth  
13. Dovel core preparation on extracted tooth  
14. Direct modelling of dovel core

**Seminars**

**Exam topics/questions**

1. Full metal crown preparation  
2. Odontotechnology of casted crowns  
3. Porcelain-fused-to-metal crown preparation  
4. Odontotechnology of metal-ceramic crowns  
5. Clinical procedures of casted crown fabrication  
6. Odontotechnical procedures of casted crown fabrication  
7. Jacket crown preparation  
8. Odontotechnology of jacket crowns  
9. Types of impression trays and their flavour  
10. Steps of acrylic crown fabrication in dental laboratory  
11. Clinical procedures of casted bridge fabrication  
12. Odontotechnical procedures of casted bridge fabrication  
13. Direkt modelling and the armamentarium of dovel core  
14. Core and root canal preparation for dovel core  
15. Types of impression taking for fixed prosthodontics
16. Methods and armamentarium of working casts and dies fabrication
17. Instrumentation of crown preparation
18. Wax pattern fabrication for fixed prosthodontics
19. Parts of RPD
20. Types of clasps
21. Impression taking for RPD and the design of RPDs
22. Odontotechnology of RPD: waxing the partial denture framework and the casting procedure
23. The general guidelines of rests, seats and retainers of RPD
24. Usage of dental
25. The flavours of record base
26. Types of articulators, mounting the cast on the articulator
27. Recording of CR in CD and RPD
28. Guidelines of static and dynamic arrangement of artificial teeth
29. Perfection and verification of jaw relation record
30. Processing of RPD. Main features of acrylic processing
31. Clinical procedures of RPD fabrication
32. Odontotechnical procedures of RPD fabrication
33. The clinical anatomy of the edentulous maxilla
34. Preparing of denture with self-curing acrylic. The failure of autoplastic acrylic processing
35. Clinical anatomy of edentulous mandibule
36. Different methods of relining and rebasing
37. Clinical and laboratori steps of CD fabrication
38. Materials and fabrication of custom tray
39. The functional impression, materials and methods
40. The relief and the methods of relief during functional impression and on the cast

Practical exam questions

1. Full metal crown preparation on upper molar tooth
2. Metal-ceramic crown preparation on upper premolar tooth
3. Full veneer crown preparation on upper front tooth
4. Impression and cast fabrication for full veneer crown
5. Full-ceramic crown preparation
6. Core and root canal preparation, direct modelling of dovel core
7. Impression, cast fabrication for bridgework
8. Mounting sectional cast on the articulator, the split-cast technique
9. Carving of wax rim, mounting the cast on the articulator
10. Wax pattern fabrication for bridgework
11. Impression from the upper and lower jaws for RPD, cast fabrication, relief
12. Clasp bending
13. Relief on upper and lower casts and record base fabrication
14. Repair of denture base
15. Defining the borders of the custom tray
16. Repair of broken clasp
17. Repair of missing tooth
18. Defining the prosthetic equator
Orthodontics: Basics

Course director: Dr. Gyula Tamás Szabó, teaching assistant
Department of Dentistry, Oral- Maxillofacial Surgery

3 credit • Pre-clinical • autumn • semester exam

Number of hours/semester: 14 + 28 + 0 = 42

Prerequisite: OSANEA completed + OSAEL2 completed + OSAANY completed

Topic

Conditions for acceptance of the semester
According to the Code of Studies and Examinations.

Making up for missed classes
Not possible.

Reading material

Lectures
1. The base of orthodontics, normal development I (embriology)
2. The base of orthodontics, normal development II (perinatal, postnatal development)
3. The base of orthodontics, normal development III (development of face)
4. Orthodontic terminology
5. Development anomalies of the teeth
6. Orthodontic materials
7. Biological base of toothmovement I
8. Biological base of toothmovement II
9. Orthodontic appliances I
10. Orthodontic appliances II
11. Orthodontical diagnosis I (clinical examination)
12. Orthodontical diagnosis II (orthodontic anomalies)
13. Orthodontical diagnosis III (x-ray methods)
14. Orthodontical diagnosis IV (modell, function, profil)

Practices
1. Plaster moulding
2. Wire bending I. (Adams clip)
3. Wire bending II. (Adams clip)
4. Wire bending III. (simple hook)
5. Wire bending IV. (double hook)
6. Wire bending V. (labial arch)
7. Preparing an orthodontic appliance (demonstration)
8. Measurements on cephalometrical x-ray I.
9. Measurements on cephalometrical x-ray II.
10. X-ray (OP, PA, CT) examinations
11. Measurements on modells I.
12. Measurements on modells II.
13. Measurements on modells III.
14. Array

Seminars

Exam topics/questions
1. Base of orthodontics
2. Odontogenesis
3. Perinatal development of the jaws and the face
4. Normal process of the development from the perinatal period to the complete deciduous dentition
5. Normal development of the jaws from the deciduous dentition until the end of growth
6. Development and change of the dentition
7. Periods of growth and its forecast
8. Development anomalies of the teeth
9. Orthodontical anomalies
10. Biological base of toothmovement
11. Removable orthodontical appliances, structure, preparation
12. Fixed orthodontical appliances, structure, preparation
13. Steps of orthodontical diagnosis
14. Orthodontic x-ray diagnosis
15. Cephalometrics
16. Employment and elaboration of materials in the Orthodontics
17. Types of multiband appliances
PROSTHODONTICS 1
Course director: DR. GYULA SZABÓ, professor
Department of Dentistry, Oral-, Maxillofacial Surgery

3 credit • Pre-clinical • spring • semester exam
Number of hours/semester: 14 + 28 + 0 = 42
Prerequisite: OSPOFO parallel + OSPFPP completed + OSPSZP parallel

Topic
Conditions for acceptance of the semester
According to the Code of Studies and Examinations.

Making up for missed classes
Not possible.

Reading material

Lectures
1. Anamnesis and the treatment plan
2. Clinical anatomy of the edentulous lower jaw
3. Clinical anatomy of the upper jaw
4. Retention of the complete denture
5. The rehabilitation of occlusion and articulation in edentulous patients
6. Functional impression on the upper jaw, the selective pressure technique
7. Protective methods for preventing the non stress bearing places. Test
8. Recording of CR in edentulous state
9. Arrangement of artificial teeth. Static and dynamic arrangement
10. The trial denture
11. Processing of complete denture. The remounting
12. Maintenance of the complete denture
13. Relining and rebasing. Repair of CD. Test
14. Consultation

Practices

Class 1-28: Fabrication of upper and lower complete denture

Seminars

Exam topics/questions
1. Consequences of edentulous state
2. Clinical anatomy of the maxilla
3. Clinical anatomy of the mandible
4. Retention of the upper CD
5. Retention of the lower CD
6. Examination of the edentulous patient. Anatomic impression and the cast
7. Different methods for functional impressions
8. Functional impression on the maxilla
9. Functional impression on the mandible
10. Processing of CD. The remounting technique
11. Functional impression on edentulous lower jaw
12. Protective methods for preventing the non stress bearing places. The acrylic base method
13. Recording the vertical dimension of CR
14. Recording the horizontal dimension of CR
15. Occludors, articulators
16. Movements of the mandibule and their importance in prosthodontics
17. The Christensen effect and its importance
18. Arrangement of artificial teeth
19. The trial denture
20. Processing of complete denture. The remounting
21. Copy of the denture
22. Maintenance of the complete denture
23. Relining and rebasing. Repair of CD. Test
24. Recording of the neutral zone
25. Reasons of edentulous state
Pathophysiology-1 connects basic functional and clinical subjects. Together with other preclinical subjects, it deals mainly with etiology, time-course, clinical symptoms and possible pharmacological or other interventions related to abnormalities of the cardiovascular, respiratory, hematological and renal systems, as well as with disorders of salt/water and pH balance.

Conditions for acceptance of the semester
Active participation in the lectures and seminars, less than 15% (maximum 3 weeks) absence from seminars, minimum 50% score on the 2 mid-semester tests.

Making up for missed classes
Minimum 50% test score on the respective seminar topics.

Reading material
Basic Concepts in Pathophysiology (ed.: M. Székely), ÁOK PTE, 2007

Lectures
1. Heart failure.
2. Peripheral circulatory failure: vasovagal syncope, circulatory shock (definition, forms and their causes, phases).
5. Hypertension.
6. Pathophysiology of the regulation and mechanics of breathing.
8. Restrictive/obstructive respiratory disorders, dyspnea.
9. Pathophysiology of the glomerular and tubular functions.
10. Chronic renal failure, uremia, uremic coma.
11. Pathophysiology of the salt-water balance.
12. Disorders of the pH regulation.
13. Pathophysiology of the red blood cell system.

Practices
Seminars

1. Heart failure.
2. The basic principles of ECG.
3. Vasovagal syncope, circulatory shock (definition, forms and their respective causes, phases).
4. Disorders of stimulus formation.
5. Pathophysiology of coronary circulation.
6. Disorders of the cardiac conduction system.
7. Pathophysiology of pulmonary circulation.
8. Repolarisation disorders, acute myocardial infarction.
10. ECG summary.
11. Alveolar hypoventilation.
13. Respiratory failure I.
14. Respiratory failure II.
15. Cardio-respiratory adaptation to physical exercise I.
16. Cardio-respiratory adaptation to physical exercise II.
17. Pathophysiology of glomerular and tubular functions.
19. Uremia, uremic coma I.
20. Uremia, uremic coma II.
21. Abnormalities of the volume and osmoregulation I.
22. Abnormalities of the volume and osmoregulation II.
23. Metabolic acidosis.
24. Metabolic alkalosis, respiratory acidosis and alkalosis.
25. Anemias I.
27. Pathophysiology of hemostasis.
Exam topics/questions
Cardiovascular adaptation in health and disease.
Causes and forms of heart failure.
Forward failure symptoms (left- and right-sided) in heart failure.
Backward failure symptoms (left- and right-sided) in heart failure.
High output cardiac failure.

Collaps, vasovagal syncope, and other circulatory abnormalities leading to loss of consciousness.
Definition and classification of circulatory shock. Pathophysiology of development, phases and characteristics of microcirculation.
Hypovolemic shock: causes and hemodynamics.
Cardiogenic shock: causes and hemodynamics.
Distributive shock: causes and hemodynamics.

Organ manifestations of shock.
Pathomechanism and consequences of acute myocardial infarction.
Mechanisms and consequences of chronic ischemic heart disease.
Regulation of cerebral circulation in health and disease.
Cerebral hypoxia, ischemia, stroke.

Characteristics and disorders of splanchnic blood flow.
Pulmonary hypertension.
General pathophysiology and classification of systemic hypertension. Age and blood pressure.
Hypertension and the kidneys (reciprocal connection).
Hypertension and the adrenal gland.

Primary hypertension: characteristics and etiological factors.
Consequences of hypertension.
Disorders of stimulus formation in the heart.
Disorders of the cardiac conduction system.
Abnormal repolarisation (primary and secondary, acute and chronic).
ECG in acute myocardial infarction.
Characteristics and parameters of abnormal breathing mechanics.
Disorders of the control of breathing. Sleep-apnea syndrome.
The work of breathing. Abnormalities of elastic resistance, restrictive disorders.

Alveolar hypoventilation: causes and consequences.
Acute and chronic alveolar hyperventilation.
Ventilation-perfusion mismatch (V/Q): causes and consequences.
Disorders of alveolo-capillary diffusion.
Global and partial respiratory failure.

Disorders of oxygen transport (abnormal hemoglobin, CO-poisoning, methemoglobinemia).
Forms and mechanisms of hypoxia. Ways of compensation. Cyanosis.
Dyspnea.
Forms, general pathophysiology and consequences of anemia.
Deficiency anemia.
Hemolytic anemia.

Polycythemia.
Bleeding abnormalities due to platelet or vascular factors.
Congenital and acquired coagulopathies.
Thrombosis: causes and consequences.
Disseminated intravascular coagulation (DIC).

Granulocytes in inflammatory processes.
Pathophysiology of glomerular filtration.
Disorders of tubular functions.
Proteinuria.
Hyposthenuria, asthenuria, osmotic diuresis.

Chronic renal failure: causes, characteristics and progression.
Metabolic disorders and organ dysfunctions in uremia.
Uremic coma.
Acute renal failure: occurrence, general features.
Compensation of pH-abnormalities (plasma and intracellular puffers, respiration, kidney) and their disturbances.
Metabolic acidosis: causes, compensation, consequences.
Metabolic alkalosis: causes, compensation, consequences.
Respiratory acidosis and alkalosis: causes, compensation, consequences.
Mechanisms and disturbances of volume regulation. States of decreased extracellular volume, and their consequences.
States of elevated extracellular volume: causes, mechanisms and consequences.

Hyperosmolarity, hypertonicity. Forms, causes, consequences.
Hypotonicity: pathogenesis and consequences.

Note: At the oral exam the students take 3 questions.
Pathophysiology 2

Course director: Dr. Ákos KOLLER, professor
Department of Pathophysiology and Gerontology

3 credit • Pre-clinical • spring • semester exam

Number of hours/semester: 14 + 0 + 28 = 42

Prerequisite: OSPKO1 completed

Topic
Pathophysiology 2 deals with the etiology, time-course and clinical symptoms, as well as with possible pharmacological and other interventions in disorders of the gastrointestinal system, energy balance, intermediary metabolism and the endocrine systems.

Conditions for acceptance of the semester
Active participation in the lectures and seminars, less than 15% (maximum 3 weeks) absence from seminars, minimum 50% score on the 2 mid-semester tests.

Making up for missed classes
Minimum 50% test score on the respective seminar topics.

Reading material
Basic Concepts in Pathophysiology (ed.: M. Székely), ÁOK PTE, 2007

Lectures
1. Gastroenterology (pathophysiology of the esophageal and gastric functions).
2. Diarrhoea
3. Pathophysiology of liver functions (intermediary metabolism, jaundice).
5. Overfeeding, obesity.
6. Pathophysiology of thermoregulation.
7. Etiology and pathogenesis of diabetes mellitus syndromes.
8. Chronic consequences of diabetes mellitus syndromes.
10. Abnormalities of lipid metabolism.
12. Abnormalities if the thyroid functions (hypofunction).

Practices
Seminars

1. Gastroenterology (vomiting, peptic ulcer).
2. Diarrhoea.
4. Pancreatitis (acute, chronic).
5. Pathophysiology of liver function (portal hypertension, ascites, cirrhosis).
7. Total starvation.
8. Partial starvation.
10. Complications of obesity, metabolic syndrome.
11. Cold-defence and cold-induced disorders. Warm-defence and heat-induced disorders.
12. Fever and sickness-behavior.
14. Acute complications of diabetes mellitus syndromes II.
15. Chronic complications of diabetes mellitus syndromes.
17. Disorders of amino acid metabolism I.
19. Abnormalities of lipid metabolism.
20. Pathomechanisms of atherosclerosis.
22. Disorders of thyroid functions (hyperfunctions).
23. Hypo- and hyper-functions of the adrenal medulla.
24. Hypo- and hyper-functions of the adrenal cortex.
25. Parathyroidea, disorders of calcium metabolism and bone remodelling I.
26. Parathyroidea, disorders of calcium metabolism and bone remodelling II.
27. Complex topics: tissue injury, trauma, sepsis.
28. MODS (multiple organ dysfunctions).
Exam topics/questions

Saliva production and its role in dental health and oral mucosal protection.
Vomiting (acute, chronic).
Disorders of gastric juice production. Peptic ulcer.
Utilization of nutrients and its disorders. Maldigestions. Specific malabsorption syndromes (level or substrate of disorder).

Complex malabsorption syndromes.
Diarrhoea: causes, pathophysiological forms, consequences.
Bowel obstruction.
Acute pancreatitis: pathophysiology and consequences.
Pathophysiology of chronic pancreatitis.

Disorders of intermediary metabolism in general liver cell damage.
Jaundice.
Portal hypertension, ascites. Hepatorenal syndrome.
Hepatic coma.
Hypo- and hypervitaminosis, micronutrients.

Water-soluble vitamins.
Fat-soluble vitamins.
Complete starvation: occurrence and process.
Partial starvation, accelerated forms of energetic insufficiency. Anorexia nervosa.
Protein deficiency. Protein-calorie malnutrition. Consequences of excessive protein intake.

Etiology and pathogenesis of obesity.
Consequences of obesity. Therapeutic possibilities.
Metabolic syndrome.
Cold-defense and cold-induced disorders.
Warm-defense and heat-induced disorders.

Heat stroke and malignant hyperthermia.
Pathogenesis of fever. Fever and sickness-behavior. The biological value of fever.
Hyperglycemia and glucose-tolerance tests. Diagnosis of diabetes mellitus.
General pathobiochemistry of diabetes mellitus syndrome.
Etiology and pathogenesis of DM1.
Etiology and pathogenesis of DM2.
Diabetic ketoacidosis (DKA) and ketoacidotic coma.
Diabetic hyperosmolar syndrome (HHS) and coma.
Late complications of diabetes mellitus.
Hypoglycemia.

Hypo-, hyper- and dys-proteinemia.
Disturbances of amino acid metabolism.
Disorders of nucleic acid metabolism. Gout.
Pathobiochemistry of LDL-metabolism. Primary hyperlipoproteinemia.
Secondary hyperlipoproteinemia. Atherosclerosis.

Disorders of the hypothalamo-pituitary system. Pituitary insufficiency.
Hyperprolactinemia.
Pathophysiology of growth.
Hyperthyroidism.
Hypothyroidism.

Goiters.
Disturbances of the adrenal medulla and the sympathetic system. Pheochromocytoma.
Adrenal (cortex) insufficiency.
Primary and secondary hyperaldosteronism.
Glucocorticoid hyperfunctional states.

Pathophysiological aspects of glucocorticoid therapy.
Parathyroid abnormalities.
Hypocalcemia, hypercalcemia.
Mechanisms and disturbances of bone remodeling. Osteoporosis, osteomalacia.
Basic pathophysiological concepts of gerontology.

Tissue injury, trauma, sepsis. MODS (multiple organ dysfunctions).

Note: The oral exam consists of 3 questions.
CLINICAL RADIOLOGY

Course director: DR. ISTVÁN BATTYÁNI, associate professor
Department of Radiology

2 credit • Pre-clinical • spring • semester exam

Number of hours/semester: 14 + 14 + 0 = 28

Prerequisite: OSPPA1 completed + OSPSPR parallel

Topic
The object of the subject is to teach the students the diagnostic algorithm of the main diseases. The basic principles are the cost-effectiveness, and the risk-benefit ratio. The basic principles of the ionizing radiation, radiation protection, and the ALARA principle.

Of course the students have to learn the different basics of the imaging methods, the information content of the exams, the indications and contraindications, and the possible side effects. As well as the basics of the vascular and non-vascular interventional radiology is in the interest of the course.

After the course the students as a practitioner with a help of the known clinical data will be able to draw up the application sequence (examination shift) of the picture making diagnostic methods required for the diagnosis of certain diseases (in case of need based on the consultation with the specialist). At any time with this end in view the proportions of the smallest risk, the invested amount compare to the greatest benefit of diagnostic.

Conditions for acceptance of the semester
To get the gradebook signed, a maximum of 2 (two) seminars (4 hours) may be missed and they are not replaceable by any kind, even by participating in others seminar, since the subjects may go non-parallel in various groups. Missed seminars, caused by disease, can be certified by a written certificate obtained from the treating physician (booked in the log of his/her office)! This can be done at the next seminar on the forthcoming week, only.

Making up for missed classes
Not possible.

Reading material
In English:
- G. M. Roberts, J. P. Hughes, and M. D. Hourihan: Clinical Radiology for Medical Students

In Hungarian:
- Fráter, Palkó, Makó, Kollár, Battyáni: Radiológia (Medicina, 2003)

Recommended:
- Daffner, Richard H.: Clinical Radiology: The Essentials, Williams & Wilkins, 1993
- Davit Sutton: Textbook of Radiology and Imaging (7th edition), ELSEVIER
Lectures

1. Basic physics of radiation (dosages, image quality)
2. Ultrasonography, CT
3. MRI, Contrast materials and their application (reaction and side effects).
4. Radioisotops, and their applications
7. Imaging methods of the GI tract, necessary clinical information, indications. Radiology of the oesophagus, stomach and duodenum. The relation of the endoscopic and radiologic methods. Imaging methods of the small bowel and the large bowel, their indications, the necessary clinical information. Diseases and their radiological diagnosis.
10. Imaging of the bones and joints. Imaging of the facial bones. Inflammatory diseases of the bone and joins. Benign and malignant tumors
11. Interventional radiology in the vascular system (embolisation, selective blood sampling, foreign body removal, thrombolysis, thrombus aspiration, catheter therapy in atherosclerosis. stents.) Interventional oncoradiology. Tissue sampling
12. Radiation protection.
14. Maxillofacial malignancies. Radiology of the maxillofacial region (trauma, inflammatory diseases, tumors)
Practices

1. Basic physics of radiation (dosages, image quality)
2. Ultrasonography, CT
3. MRI, Contrast materials and their application (reaction and side effects).
4. Radioisotops, and their applications
7. Imaging methods of the GI tract, necessary clinical information, indications. Radiology of the oesophagus, stomach and duodenum. The relation of the endoscopic and radiologic methods. Imaging methods of the small bowel and the large bowel, their indications, the necessary clinical information. Diseases and their radiological diagnosis.
10. Imaging of the bones and joints. Imaging of the facial bones. Inflammatory diseases of the bone and joins. Benign and malignant tumors
11. Interventional radiology in the vascular system (embolisation, selective blood sampling, foreign body removal, thrombolysis, thrombus aspiration, catheter therapy in atherosclerosis. stents.) Interventional oncoradiology. Tissue sampling.
12. Radiation protection.
14. Maxillofacial malignancies. Radiology of the maxillofacial region (trauma, inflammatory diseases, tumors)

Seminars
Exam topics/questions

2. The differential absorption and its role in diagnostic and therapeutic medicine.
3. Compton dispersion, pair formation.
5. The units of the diagnostic x-ray equipment.
7. The basic principles of x-ray imaging.
8. Contrast materials, their side effects, complications and treatments.
11. Imaging of the bone and joint. Basic pathologic changes.
12. Imagings and diseases of the facial bones.
13. Indications and methods of chest X-ray
15. Indications and methods in pleural diseases.
16. Imaging methods of the heart and great vessels.
17. Imaging methods of the mediastinum.
18. Radiological examinations of the GI tract. Basic morphological changes.
20. Uroradiology (stones, tumors)
21. Basic principles and indications of angiography
22. Basic principles and indications of CT
23. Basic principles and indications of US
27. Diagnostic and therapeutic applications of the isotops.
29. Transcatheter embolisation.
30. Local thrombolysis. PTA. Atherectomy. Stent implantation.
MICROBIOLOGY 1

Course director: DR. JÚLIA SZEKERES, professor
Department of Medical Microbiology and Immunology

5 credit • Pre-clinical • autumn • semester exam

Number of hours/semester: 42 + 28 + 0 = 70

Prerequisite: OSPPA1 parallel + OSABK2 completed + OSAIMM completed

Topic

During the course the morphology, physiology of microbes, the techniques of disinfection and sterilization, the basics of antimicrobial therapy and the drugs used will be discussed. The host-parasite interactions, the factors playing roles in the pathogenesis of infections, the defense mechanisms of the host and the modes of prevention will be detailed. The systematic microbiology part of the course will discuss the microbiological aspects of various infections caused by specific pathogens. Special emphasize will be put on the indigenous flora of the oral cavity, as well as on microorganisms playing a role in the diseases of the oral cavity and the teeth.

The objective is to provide a solid microbiological basis to understand the pathogenesis and clinical aspects of oral diseases if infectious etiology, as well as those of diseases of other organ systems of stomatological relevance.

Conditions for acceptance of the semester

According to the Code of Studies and Examinations. The Department insists on the active participation in all the practices, since necessary knowledge and skills to take and handle microbiological samples can only be mastered there.

The subject of the examinations is the information provided on the lectures and practices during the semester.

Making up for missed classes

Reading material

Samaranayake LP: Essential Microbiology for Dentistry


Lectures
1. Introduction the subject and history of microbiology
2. Morphology and structure of bacteria
3. Morphology and structure of bacteria
4. The physiology of bacteria
5. Sterilization and disinfection
6. Sterilization and disinfection
7. Chemotherapy
8. Chemotherapy
9. Chemotherapy
10. Microbial genetics
11. Pathogenicity, Infection
12. Vaccinology
13. Immunology of infectious disease
14. Immunology of infectious disease
15. Immunology of infectious disease
16. Immunology of infectious disease
17. Virology
18. Virology
19. Virology
20. Virology
21. Virology
22. Pyogenic bacteria
23. Pyogenic bacteria
24. Pyogenic bacteria
25. Enteric bacteria and gastrointestinal pathogens
26. Enteric bacteria and gastrointestinal pathogens
27. Enteric bacteria and gastrointestinal pathogens
28. Pathogens in respiratory tact - Mestyán Gyula Dr.
29. Pathogens in respiratory tact - Mestyán Gyula Dr.
30. Mycobacteria
31. Aerobic and anaerobic spore forming bacteria
32. Aerobic and anaerobic spore forming bacteria
33. Spirochaetes
34. Rickettsia, Chlamydia
35. Mycology - Mestyán Gyula Dr.
36. Parazitology
37. Oral microbiology
38. Oral microbiology
39. Oral microbiology
40. Oral microbiology
41. Oral microbiology
42. Oral microbiology

Practices
1. Introduction, safety regulations. The microscope, native and stained preparation
2. Introduction, safety regulations. The microscope, native and stained preparation
3. Cultivation of bacteria, media
4. Cultivation of bacteria, media
5. Biochemical reaction in the identification
6. Biochemical reaction in the identification
7. Antibiotic sensitivity
8. Antibiotic sensitivity
9. Serology
10. Serology
11. Molecular diagnostics
12. Molecular diagnostics
13. Bacteriological diagnostics of pyogenic infections; blood cultures
14. Bacteriological diagnostics of pyogenic infections; blood cultures
15. Bacteriological diagnostics of urinary tract infections
16. Bacteriological diagnostics of urinary tract infections
17. Bacteriological diagnostics of gastrointestinal infections
18. Bacteriological diagnostics of gastrointestinal infections
19. Bacteriological diagnostics of respiratory tract infections and meningitis
20. Bacteriological diagnostics of respiratory tract infections and meningitis
21. Anaerobic infections
22. Anaerobic infections
23. Diagnostic virology
24. Diagnostic virology
25. Diagnostic mycology and parasitology
26. Diagnostic mycology and parasitology
27. Diagnostic oral microbiology
28. Diagnostic oral microbiology

Seminars

Exam topics/questions
THE WRITTEN EXAM CONSISTS OF MULTIPLE CHOICE QUESTIONS
Operative Dentistry - Propedeutics

Course director: Dr. Edina Lempel, teaching assistant
Department of Dentistry, Oral-, Maxillofacial Surgery

3 credit • Pre-clinical • spring • semester exam

Number of hours/semester: $28 + 14 + 0 = 42$

Prerequisite: OSAEL2 completed + OSAANY completed + OSPFPP completed

Topic

Students should acquire the basic treatment methods of carious lesions.

Conditions for acceptance of the semester

According to the Code of Studies and Examinations

Making up for missed classes

Not possible

Reading material

Restorative Dentistry
Operative Dentistry

Lectures

1. General rules of cavity preparation
2. The aim of endodontic procedures, clinical diagnosis, Isolation, Anesthesia
3. Class I. cavity preparation for amalgam filling
4. Morphology of pulp chamber and canal
5. Equipments of dental office. The position of patient and dentist during the treatment. Classification of cavities, nomenclature
6. Trepanation and the armamentarium for trepanation
7. Class III. cavity preparation for composite filling
8. Vitalexstirpation, the armamentarium of root canal preparation, the lubrication
9. Instruments for cavity preparation
10. Determination of working length, step-back technique, anticurvature filling, point control
11. Matrix and matrix retainer. Isolation
12. Drying of root canal, provisional cavity liners, definite canal filling instrumentation
13. Class V. cavity preparation
14. Permanent root canal filling with lateral condensation technique
15. Amalgam restorations
16. Root canal therapy of extracted tooth (practice)
17. Composite restorations. Glass-ionomer cement restorations
18. Anatomy of extracted teeth (practice)
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<td>19.</td>
<td>Class I. cavity preparation for cast inlay</td>
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<td>Cavity for trepanation on extracted tooth</td>
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<td>21.</td>
<td>Class II. cavity preparation for cast inlay. Class V. cavity preparation for cast inlay. Inlay modeling</td>
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<td>22.</td>
<td>Root canal instrumentation with step-back technique</td>
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<td>Direct inlay modeling. Impressions for inlays</td>
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<td>24.</td>
<td>Root canal instrumentation with step-back technique, point control x-ray</td>
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<td>25.</td>
<td>Instruments, materials and methods of polishing. Slice preparation</td>
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<td>26.</td>
<td>Root canal filling with lateral condensation technique</td>
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<td>Consultation</td>
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**Practices**

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<td>1.</td>
<td>Class I. cavity preparation in lower first molar for amalgam and composite filling</td>
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<td>Class V. cavity preparation for composite filling in upper canine and lower first molar</td>
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<td>Class V. cavity preparation for composite filling in upper canine and lower first molar</td>
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<td>Class III., IV. and V. fillings</td>
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<td>8.</td>
<td>Class I. cavity preparation for cast inlay in lower second molar, direct wax modeling</td>
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10. Class II. MOD cavity preparation for cast inlay in lower first premolar, direct wax modeling
10. Class II. MOD cavity preparation for cast inlay in lower first premolar, direct wax modeling
10. Class II. MOD cavity preparation for cast inlay in lower first premolar, direct wax modeling
11. Class II. MOD cavity preparation for composite inlay in upper second molar Class V. cavity preparation for composite inlay in upper first molar
11. Class II. MOD cavity preparation for composite inlay in upper second molar Class V. cavity preparation for composite inlay in upper first molar
11. Class II. MOD cavity preparation for composite inlay in upper second molar Class V. cavity preparation for composite inlay in upper first molar
12. Class II. MOD cavity preparation for ceramic inlay in extracted tooth
12. Class II. MOD cavity preparation for ceramic inlay in extracted tooth
12. Class II. MOD cavity preparation for ceramic inlay in extracted tooth
13. Class II. MO cavity preparation for ceramic onlay in upper second molar Direkt modeling of onlay from composite
13. Class II. MO cavity preparation for ceramic onlay in upper second molar Direkt modeling of onlay from composite
13. Class II. MO cavity preparation for ceramic onlay in upper second molar Direkt modeling of onlay from composite
14. Indirect onlay modeling from self curing acrylic resin
14. Indirect onlay modeling from self curing acrylic resin
14. Indirect onlay modeling from self curing acrylic resin

Seminars

Exam topics/questions
1. Equipments and instruments of the dental office
2. Position of patient and dentist during treatment
3. Nomenclature, general rules of cavity classification
5. Mechanical instruments for cavity preparation
6. Isolation, matrix systems
7. Class I. cavity preparation for plastic filling
8. Class II. cavity preparation for amalgam filling
9. Class II. cavity preparation for composite filling
10. Class III. cavity preparation for aesthetic filling
11. Class IV. cavity preparation for composite filling
12. Class V. cavity preparation
13. Steps of amalgam filling
14. Steps of composite fillings
15. Steps of glass-ionomer filling
16. Particular cavity preparation, parapulpal posts
17. Class I. cavity preparation for cast inlay
18. Class II. cavity preparation for cast inlay
19. Cavity preparation for composite inlay
20. The aim of endodontics, step-back technique, morphology of root canals
21. The endodontic working length determination, the point control
22. Drying of root canal, provisional and permanent root canal filling

Practical exam questions
1. Class I. cavity preparation for amalgam filling in molar tooth on vestibular and occlusal surface, making of the filling
2. Class I. cavity preparation for composite filling in molar tooth on vestibular and occlusal surface, making of the filling
3. Class II. MO cavity preparation for amalgam filling in molar or premolar tooth, making of the filling
4. Class II. OD cavity preparation for amalgam filling in molar or premolar tooth, making of the filling
5. Class II. MOD cavity preparation for amalgam filling in molar or premolar tooth, making of the filling
6. Class II. MO cavity preparation for composite filling in molar or premolar tooth, making of the filling
7. Class II. OD cavity preparation for composite filling in molar or premolar tooth, making of the filling
8. Class II. MOD cavity preparation for composite filling in molar or premolar tooth, making of the filling
9. Class III. cavity preparation for composite filling in upper front tooth, making of the filling
10. Class IV. cavity preparation for composite filling in upper front tooth, making of the filling
11. Class V. cavity preparation for composite and amalgam filling, making of the filling
12. Class II. MO cavity preparation for cast inlay, wax modeling
13. Class II. OD cavity preparation for cast inlay, wax modeling
14. Class II. MOD cavity preparation for cast inlay, wax modeling
15. Class I. and II. composite inlay making with direct method
16. Making of Class II. MO direct composite inlay in molar or premolar tooth
17. Making of Class II. OD direct composite inlay in molar or premolar tooth
18. Making of Class II. MOD direct composite inlay in molar or premolar tooth
19. Class II. MOD cavity preparation for ceramic inlay, impression taking, cast fabrication, direct modeling from self curing acrylic resin
ORAL RADIOLOGY

Course director: DR. GYULA MARADA, teaching assistant
Department of Dentistry, Oral-, Maxillofacial Surgery

3 credit • Pre-clinical • autumn • semester exam

Number of hours/semester: $14 + 28 + 0 = 42$

Prerequisite: OSPFPP parallel + OSAORB completed + OSANEA completed

Topic
Students should acquire all radiologic diagnostic methods used in dentistry. Students should be able to make intraoral x-ray.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations.

Making up for missed classes
Not possible.

Reading material

Lectures
1. Principles of Radiology. Equipments
2. Radiation detectors. Exposure
3. Intraoral techniques. The bisecting angle technique
4. Extraoral techniques
5. Orthopantomograph, cephalometric x-ray
6. Radiation protection
9. Diseases of apical and marginal periodontium
10. Traumatic diseases of jaws and teeth
11. Prosthodontic aspects of radiology
13. Endodontic aspects of radiology
14. Radiological failures

Practices
Class 1-28: Intraoral x-ray exposure and processing

Seminars
Exam topics/questions
1. Oral radologic equipments
2. Radiograph of teeth. The rule of bisecting angle and parallel technique
3. Radiographic features of periapical conditions on the lower arch
4. Radiographic features of periapical conditions on the upper arch
5. Radiographs of the crown
6. Occlusal radiographs
7. Pediatric dental radiographs
8. Extradental radiographs
9. Radiographs of the maxilla
10. Radiographs of the mandible
11. Rules of contact radiographs. Cephalographs
12. Panoramic radiographs
13. Exposure
14. Processing of dental radiographs
15. Automatic processing
16. Reliable visualization of radiographs
17. Density and contrast
18. Radiation failures. Failures before processing
19. Failures of film processing
20. Radiation protection
21. Protection of patients
22. Protection of staff
23. Assessment of alveolar bone
24. Anatomy of teeth
25. Assessment of perapical radiographs
26. Development of teeth
27. Endodontic procedures and their radiologic aspects
28. Radiological aspects of tooth extraction
29. Malpositions, eruption anomalies
30. Caries
31. Inflammation of apical periodontium
32. Diseases of the marginal periodontium
33. Dental trauma
34. Traumatism of the jaws
35. Osteomyelitis
36. Sialolith
37. Fillings, fix and removable partial dentures
Practical exam: intraoral radiograph taking for patients
Pathology for Dental Students 1

Course director: Dr. László Pajor, professor
Department of Pathology

6 credit • Pre-clinical • autumn • semester exam

Number of hours/semester: 56 + 0 + 28 = 84

Prerequisite: OSABK2 completed + OSANEA completed

Topic

The pathology course will form a basis for latter clinical studies by teaching the students general pathological knowledge, including the etiology and pathomechanism of diseases and the entire verticum of pathological diagnostics from macroscopy and microscopy to special ancillary techniques (ultrastructural analysis, molecular pathology). There is a special emphasis on the clinicopathological view of the diseases, i.e., understanding the interrelationship of the clinical symptoms, macroscopical and microscopical changes of the diseased organs. To this end, basic clinicopathological thinking and the capability of differential diagnostics are partly required by the end of this term. During the last week of the second semester, a clinicopathological competition will be organised. The pathology subject involves the principles of general pathology: cellular injury and cellular death, degeneration, pathological accumulation and adaptation, inflammation and repair, hemodynamic disorders, genetic disorders, diseases of immunity and neoplasia.

Conditions for acceptance of the semester

According to the Code of Studies of Examination. Absences exceeding 15% of the histopathology classes in semester will result in not signing the gradebook. One macropreparation, one histological preparation and a theoretical question will be given to the student on the examination of the first semester.

Making up for missed classes

Reading material


Lectures

I. Introduction – Postmortem changes - cell death (5 lectures; lecturer: Dr. Pajor)
   1. Introduction to pathology. Historical overview. The role of pathology in sciences.
   2. The role of diagnostic pathology in modern medicine. The methodology of pathology.
      Necrosis vs apoptosis
   4. The types of necrosis: microscopic and macroscopic changes.
   5. Pathology of myocardial infarction
II. Degeneration, pathological accumulation, pigments, calcification (10 lectures; lecturer: Dr. Pajor)
   1. The types of degeneration, relation between necrosis and degeneration. Parenchymal and fatty degeneration.
   2. Lipid accumulation. Atherosclerosis.
   3. Exogenous pigment accumulation.
   4. Endogenous, hemoglobinogenic pigment accumulation.
   5. Endogenous, non-hemoglobinogenic pigment accumulation.

III. Growth disturbances (5 lectures; lecturer: Dr. Pajor)
   1. Regressive changes: atrophy. Organ examples.
   3. Progressive changes: hypertrophy. Left and right ventricular hypertrophy and their hemodynamic significance
   4. Regeneration. Wound healing

IV. Circulation (6 lectures; lecturer: Dr. László Terézia)
   1. Edema, hyperemia, congestio
   2. Types and pathomechanism of hemorrhage
   3. Hemorrhage, organ manifestations
   5. Embolisation, disseminated intravascular coagulation

V. Inflammation (10 lectures; lecturer: Dr. Pajor)
   1. Definition of inflammation, historical overview.
   6. Granulomatous inflammation (sarcoidosis, foreign body type giant cell reaction), organ examples.
   8. Clinicopathological presentations of tuberculosis.
   9. Autoimmune chronic inflammation. Rheumatoid arthritis
VI. Immunopathology (5 lectures; lecturer: Dr. Pajor)
1. Type I. and II. hypersensitivities and related disorders
2. Type III. and IV. hypersensitivity reactions and related disorders
3. Transplantation immunity
4. Pathogenesis of autoimmune diseases.
5. Systemic lupus erythematoses (SLE)
6. Congenital immunodeficiency syndromes
7. Acquired immunodeficiency syndrome (AIDS)

VII. Genetics (5 lectures; lecturer: Dr. Pajor)
1. The incidence of genetic disorders, types of mutations and the 4 prototypes of the genetic disorders.
2. The Mendelian disorders: autosomal dominant and recessive disorders.
3. X-linked inheritance. Disorders with polygenic inheritance

VIII. Oncology (10 lectures; lecturer: Dr. Pajor)
1. Characterisation of benign and malignant tumours
2. The classification of tumours according to their histogenesis. The basis of immunohistochemical differential diagnostics.
3. Chemical and irradiation cancerogenesis.
4. The role of oncogenes in tumorgenesis.
5. The role of tumour suppressor genes in tumorgenesis.
6. Interpretation of tumor growth kinetics at the cell cycle level.
8. Host defence against tumors.
9. The pathological diagnostics of tumours
10. Staging and grading of tumours.

Practices

Seminars
1. Postmortual changes - necrosis: Adipocera /P/, Postmortual emphysema of the liver /P/, Normal and postmortual pancreas (HE) /S/
2. Necrosis-apoptosis: Karyorrhexis in inadequately handled sample (HE) /S/, Necrosis and its subtypes (oncosis, apoptosis) (photo)
3-4. Coagulative necrosis: Anaemac infarct of the heart /P/, Anaemac infarct of the spleen and splenomegaly /P/, Pylethrombosis(thrombosis of the portal vein) /P/, Myotic enteritis /P/, Phthisis renalis (caseation) /P/, Sacral decubitus /P/, Gangraena sicca of the toes /P/, Anaemac infarct of the myocardium (HE) /S/, Hemorrhagic infarct of the lung (HE) /S/,
3-4. Coagulative necrosis: Anaemac infarct of the heart /P/, Anaemac infarct of the spleen and splenomegaly /P/, Pylethrombosis(thrombosis of the portal vein) /P/,
Mycotic enteritis /P/, Phthisis renalis (caseation) /P/, Sacral decubitus /P/, Gangraena sicca of the toes /P/, Anaemic infarct of the myocardium (HE) /S/, Hemorrhagic infarct of the lung (HE) /S/,

5. Liquefactive necrosis: Cysta post encephalomalaciam - chr. endocarditis /P/, Cerebral abscess /P/, Pancreas fat necrosis – acute pancreatitis /P/ Encephalomalacia alba (HE) /S/, Acute pancreatitis – fat necrosis (HE) /S/

6. Degeneration: Insular fatty degeneration of the myocardium /P/, Steatosis hepatic /P/,

7. Pathological accumulation: Fatty infiltration of the myocardii /P/, Aortic athersclerosis – complicated plaques in abdominal aorta /P/, Aortic atheromatosis (Oil Red) /S/

8. Pigment accumulation – Endogenous pigments: Haemochromatosis universalis (Prussian blue) /P/, Brown induration of the lung /P/, Brown atrophy of the heart /P/, Malignant melanoma /P/, Ochronosis /P/ Haemosiderosis of liver (Prussian blue and HE) /S/, Bile pigment in cirrhotic liver (HE) /S/, Brown induration of the lung (Prussian blue) /S/, Malignant melanoma (HE) /S/

9. Pigment accumulation - Exogenous pigments: Miliary and tumorous silicosis of the lung /P/, Miliary silicosis of the lung (HE) /S/, Anthracosis of lymph node (HE) /S/ Protein accumulation: Amyloidosis with plasmacell dyscrasia /P/, Renal amyloid (Congo) (presentation)

10. Calcification, lithiasis: Cholelithiasis – empyema /P/, Table of frequent stones, Petrified myoma of the uterus /P/, Microcalcification of the breast (mammography), Urolithiasis – hydronephrosis /P/, Nodular calcified aortic stenosis /P/ Calcification in breast cancer (Kossa reaction) (presented with mammograph) /S/, Psammom bodies (Carcinoma papillare) (HE) /S/

11. Growth disturbances: Brown atrophy of the heart /P/, Cerebral atrophy /P/, Atrophy of the kidney, nephrosclerosis /P/Concentric hypertrophy of the left ventricule of the heart /P/, Dilatative hypertrophy of the left ventricule of the heart /P/, Chronic cor pulmonale /P/ Neonatal (diploid nuclei) and hypertrophic (polyploid nuclei) cardiac muscle (HE) /S/

13. Circulation I.: Hemorrhage: Epidural hemorrhage /P/, Chronic subdural hemorrhage /P/,

14. Edema, congestion: Cerebral edema, incarceration of cerebellar tonsils /P/, Brown induration of the lung /P/ Hepar moschatum adiposum (HE) /S/, Pulmonary edema (HE) /S/

15. Thrombosis: Abdominal aortic aneurysm – parietal thrombosis /P/, Endocarditis – left atrial "ball" thrombus /P/, Septic endocarditis /P/, Lung infarct /P/ Thrombosis of femoral artery with recanalisation (HE) /S/, DIC (fibrinthrombi in kidney) (fibrin stain) /S/

17. Fibrinous, fibrinopurulent inflammation: Fibrinous pericarditis - cor villosum /P/, Concretio pericardii /P/, Lobar pneumonia /P/, Bronchopneumonia /P/ Fibrinous pericarditis - cor villosum (HE) /S/, Lobar pneumonia (HE) /S/, Bronchopneumonia (HE) /S/ Purulent inflammation: Purulent meningitis /P/, Pulmonary abscess /P/, Hepatic abscess /P/, Cerebral abscess /P/, Purulent meningitis (HE) /S/, Cerebral abscessus (HE) /S/

18. Gangrenous inflammation: Foreign body in bronchi /P/, Acute appendicitis (HE) /S/ Chronic non specific inflammation: Chronic cholecystitis /P/, Chronic pyelonephritis /P/ Chronic endocarditis and cysta post encephalomalatiam /P/, Chronic cholecystitis (HE) /S/

19. Specific granulomatous inflammation: Miliary tuberculosis of the lungs /P/, Generalised tuberculosis /P/, Phtisis cavernosa /P/, Phtisis renalis /P/, Miliary tuberculosisonf the lung (HE) /S/, Mycobacterial infection demonstration (ZN) /S/

20. Specific granulomatous inflammation: Pulmonary sarcoïdosis – BHL /P/, Sarcoïdosis in lymph node (HE) /S/, Lipogranuloma in breast (HE) /S/, Foreign body granuloma (HE) /S/ Reparation: Pleural callus /P/,

21. Immunopathology: Follicular hyperplasia (lymph node) (HE) /S/, Paracortical hyperplasia (lymph node) (HE) /S/, Eosinophil cell reaction in nasal polyp (HE) /S/, Hashimoto thyreoiditis (HE) /S/, Bronchial asthma (HE and PAS) /S/

22. Immunopathology: Acut rejection in kidney /P/, Honeycomb lung /P/, Amyloidosis with plasmacell dyscrasia /P/, Acut rejection in kidney (HE and PAS) /S/, CMV lung (HE) /S/, Renal amyloid (Congo) (slide presentation)


24. Disorders with polygenic inheritance: Anencephaly /P/, Spina bifida and meningomyelocele /P/


25. Metaplasia - dysplasia: Leukoplakia of the cervical portion /P/, Extirpated pregnant uterus because of cervical carcinoma /P/ Cervical intraepithelial neoplasia CIN III (PAS) /S/ Morbiditaly most frequent tumors: Fibroadenoma of breast /P/, Carcinoma of the breast /P/, Bronchial planocellular carcinoma /P/, Rectal polyp /P/, Rectal adenocarcinoma /P/

26. Other tumors: Leiomyoma of uterus /P/, Cysta dermoides /P/, Meningeoma /P/, Carcinoma planocellularare of lower lip (HE) /S/

27. Local and metastatic tumour spreading: Pulmonary metastases /P/, Lymphangitis carcinomatosa /P/, Linitis plastica and Krukenberg tumor /P/, Carcinoma ventriculi (lymph node metastasis) (HE)

28. Clonality, prognosis, histogenesis: Myeloma multiplex (kappa, lambda IPO) /S/, Invasive breast carcinoma (lymph node metastasis) (PR + HE) /S/, Polypus adenomatosus coli (p53) /S/
Exam topics/questions

Exam questions

I. Introduction – Postmortem changes - cell death

1. The objectives of pathology and its place among the biomedical disciplines. Significance of biopsy (surgical pathology) and autopsy in the everyday medical practice. Brief summary of the historical development of pathology (humoral- and solidarpathology, Morgagni, Virchow, molecular pathology)

2. Methodology of pathology (light-, polarisation- and electronmicroscopy, histo- and cytochemistry, immunhistology, in situ molecular biological methods, flow cytometry; examples which were discussed or demonstrated during lectures and seminars).


5. Coagulative necrosis, organ manifestations

6. Clinicopathology of the acute myocardial infarction (AMI)

7. Liquefactive necrosis, organ manifestations

II. Degeneration, pathological accumulation, pigments, calcification

8. The definition and types of degenerations. Parenchymal and fatty degeneration. Organ examples.

9. Pathomorphology, pathogenesis and complications of atherosclerosis

10. Exogenous and endogenous pigments. Histochemical characteristics of the different pigments

11. Anthracosis and silicosis


13. Hemoglobinogenic pigments II. Different forms of jaundice and cholostasis, morphology, differential diagnostics.


15. Endogenous non-hemoglobinogenic pigments: lipofuscin, melanin, homogentisic acid.

16. Dystrophic calcification. Causes, pathomechanism and organ manifestations

17. Metastatic calcification. Causes, pathomechanism, organ manifestations.

18. Pathomechanism and clinicopathological forms of stone formation.

19. Definition and general characterisation of amyloidosis. Physico-chemical, ultrastructural and histochemical nature of amyloid. Types of amyloid fibrils

20. Clinicopathological forms of amyloidosis, organ manifestations (gross morphology and light microscopy)
III. Growth disturbances
21. Causes of atrophy; general gross morphology and microscopical characteristics.
   Pathomechanism of atrophy
22. Definition of atrophy, hypoplasia, aplasia, agenesis. Osteoporosis.
23. Cerebral atrophy - Alzheimer disease.
24. Definition, types and organ examples of hyperplasia.
25. Glandular cystic hyperplasia of the endometrium. Bone marrow hyperplasia
26. Prostate hyperplasia. Lymph node hyperplasia (follicular and paracortical)
27. Definition of hypertrophy (causes, morphology, changes at cell cycle)
28. Left ventricular hypertrophy. Causes, sequential compensatory changes and functionally consequences.
29. Cor pulmonale chronicum.
30. Healing by primary and secondary intention (Sanatio per primam et per secundam intentionem)

IV. Thrombosis, embolism, edema, hemorrhages
31. Definition of edema, pathomechanism (Starling law), clinical forms.
32. Pathomechanism of hemorrhages.
33. Clinical presentation of hemorrhages.
34. Pathomechanism of hemorrhagic diathesesises, clinical forms.
35. Definition and forms of thrombosis, factors affecting thrombus formation.
36. Clinical consequences of thrombosis, the fate of thrombus.
37. Disseminated intravascular coagulation (DIC): definition, pathomechanism
38. Definition and forms of embolism
40. Clinicopathological classification of hypertension and complications

V. Inflammation
41. Vascular and humoral mechanisms of acute inflammations
42. Cellular mechanism of acute inflammation.
44. Clinicopathological classification of the acute inflammations II.: Purulent, haemorrhagic and gangrenous inflammation. Organ examples.
45. Definition, cellular and humoral mechanisms and classification of chronic inflammations
46. Pathogenesis and pathomorphology of tuberculosis
47. Clinicopathological presentation of tuberculosis
48. Foreign body type of inflammatory response (characteristics and examples)
49. Autoimmune chronic inflammations. Rheumatoid arthritis
VI. Immunopathology

50. Type I. and type II. hypersensitivity reactions, mechanisms and related disorders.
51. Type III. and type IV. hypersensitivity reactions, related disorders.
52. Transplantation immunity
53. Pathogenesis of autoimmune disorders
54. Systemic lupus erythematoses (SLE)
55. Congenital immundeficiency syndromes
56. Aquired immundeficiency syndrome (AIDS)

VII. Genetics

57. The incidence of genetic disorders and the basic types of mutations.
58. The four types of the genetic disorders. Autosomal dominant inheritance: characteristics and examples
59. Autosomal recessive and X-linked inheritance: hallmarks and examples.
60. Multifactorial inheritance and examples.
61. Marfan and Ehlers-Danlos syndromes.
62. Familiar hypercholersterinaemia
63. Cystic fibrosis
64. The lysosomal storage disorders

VIII. Oncology

66. The definition of metaplasia, examples. Interrelationship of metaplasia and dysplasia
67. The definition and morphological characteristics of dysplasia - anaplasia, organ examples for dysplasia..
68. General characteristics of benign and malignant tumours. Terminology and histogenetic classification of tumours.
69. Characteristics and analysis of kinetics of tumour cell growth. Clonality of tumours, methods to investigate clonality
70. Local and metastatic tumour spreading
71. Hereditary and acquired predisposition for cancer and pathomechanisms.
72. Overall cancer epidemiology (the most frequent tumours, geographic and age related differences)
73. The role of oncogenes and tumor suppressor genes in the cancerogenesis
74. Chemical and radiation cancerogenesis
75. Viral cancerogenesis
76. Oncopathological diagnostic strategy, grading, staging
Preparations

I. Postmortal changes - necrosis
   1. Adipocera
   2. Postmortal emphysema of the liver
   3. Necrosis and its subtypes (oncrosis, apoptosis) (photo)
   4. Anaemic infarct of the heart
   5. Anaemic infarct of the spleen and splenomegaly
   6. Pylethrombosis, (thrombosis of the portal vein)
   7. Mycotic enteritis
   8. Phthisis renalis (caseation)
   9. Sacral decubitus
  10. Gangraena sicca of the toes
  11. Cysta post encephalomalaciam - chr. endocarditis
  12. Cerebral abscess
  13. Pancreas fatnecrosis – acute pancreatitis

II. Degeneration, pathological accumulation, pigments, calcification
  14. Insular fatty degeneration of the myocardium
  15. Steatosis hepatis
  16. Hepar moschatum adiposum
  17. Fatty infiltration of the myocardii
  18. Aortic athersclerosis – complicated plaques in abdominal aorta
  19. Haemochromatosis universalis (Prussian blue)
  20. Brown induration of the lung
  21. Brown atrophy of the heart
  22. Malignant melanoma
  23. Ochronosis
  24. Miliary and tumorous silicosi of the lung
  25. Amyloidosis with plasmacell dyscrasia
  26. Cholelithiasis - empyema
  27. Table of frequent stones
  28. Petrified myoma of the uterus
  29. Microcalcification of the breast (mammography)
  30. Urolithiasis – hydronephrosis
  31. Nodular calcified aortic stenosis
III. Growth disturbances
32. Brown atrophy of the heart
33. Cerebral atrophy
34. Atrophy of the kidney, nephrosclerosis
35. Concentric hypertrophy of the left ventricule of the heart
36. Dilatative hypertrophy of the left ventricule of the heart
37. Chronic cor pulmonale
38. Prostatic hyperplasia

IV. Circulation
39. Epidural hemorrhage
40. Chronic subdural hemorrhage
41. Subarachnoid hemorrhage
42. Cerebral apoplexy
43. Cerebral purpura
44. Cerebral edema, incarceration of cerebellar tonsils
45. Brown induration of the lung
46. Abdominal aortic aneurysm – parietal thrombosis
47. Left atrial “ball” thrombus
48. Lung infarct

V. Inflammation
49. Fibrinous pericarditis - cor villosum
50. Concretio pericardii
51. Lobar pneumonia
52. Bronchopneumonia
53. Purulent meningitis
54. Pulmonary abscess
55. Hepatic abscess
56. Cerebral abscess
57. Chronic cholecystitis
58. Chronic pyelonephritis
59. Chronic endocarditis and cysta post encephalomalatiam
60. Miliary tuberculosis of the lungs
61. Generalised tuberculosis
62. Phtisis cavernosa
63. Phtisis renalis (repetition)
64. Pulmonary sarcoidosis - BHL
65. Pleural callus
66. Foreign body in bronchi
VI. Immunpathology
   67. Acut rejection in kidney
   68. Honeycomb lung

VII. Genetics
   69. Anencephaly
   70. Spina bifida (meningomyelocele)
   71. Mucoviscidosis (meconium ileus)

VIII. Oncology
   72. Leukoplakia of the cervical portion
   73. Cervical carcinoma
   74. Fibroadenoma of breast
   75. Carcinoma of the breast
   76. Bronchial carcinoma
   77. Rectal polyp
   78. Rectal adenocarcinoma
   79. Leiomyoma of uterus
   80. Cysta dermoides
   81. Meningeoma
   82. Pulmonary metastases
   83. Lymphangitis carcinomatosa
   84. Linitis plastica and Krukenberg tumor

Slides

I. Postmortal changes - necrosis
   1. Normal and postmortal pancreas (HE)
   2. Karyorrhexis in inadequately handled sample (HE)
   3. Anaemic infarct of the myocardium (HE)
   4. Hemorrhagic infarct of the lung (HE)
   5. Caseous lymphadenitis (HE)
   6. Encephalomalacia alba (HE)
   7. Acute pancreatitis – fat necrosis (HE)

II. Degeneration, pathological accumulation, pigments, calcification
   8. Insular fatty degeneration of the myocardium (Oil Red)
   9. Steatosis hepatis (HE and Oil Red)
  10. Aortic atheromatosis (Oil Red)
  11. Haemosiderosis of liver (Prussian blue and HE)
  12. Bile pigment in cirrhotic liver (HE)
  13. Brown induration of the lung (Prussian blue)
  14. Malignant melanoma (HE)
15. Miliary silicosis of the lung (HE)
16. Anthracosis of lymph node (HE)
17. Renal amyloid (Congo) (presentation)
18. Calcification in breast cancer (Kossa reaction) (presented with mammograph)
19. Psammom bodies (Carcinoma papillare) (HE)

III. Growth disturbances
20. Neonatal (diploid nuclei) and hypertrophic (polyploid nuclei) cardiac muscle (HE)
21. Glandular cystic hyperplasia of the endometrium (HE)
22. Prostatic hyperplasia (HE)

IV. Circulation
23. Hepar moschatum adiposum (HE)
24. Pulmonary edema (HE)
25. Thrombosis of femoral artery with recanalisation (HE)
26. Partial pulmonary embolisation – pulmonary infarct (HE)
27. DIC (fibrin thrombi in kidney) (fibrin stain)
28. Fat emboli in kidney (lipid stain)

V. Inflammation
29. Fibrinous pericarditis - cor villosum (HE)
30. Lobar pneumonia (HE)
31. Bronchopneumonia (HE)
32. Purulent meningitis (HE)
33. Cerebral abscessus (HE)
34. Acute appendicitis (HE)
35. Chronic cholecystitis (HE)
36. Foreign body granuloma (HE)
37. Miliary tuberculosis of the lung (HE)
38. Mycobacterial infection demonstration (ZN)
39. Sarcoidosis in lymph node (HE)
40. Lipogranuloma in breast (HE)

VI. Immunopathology
41. Follicularis hyperplasia (lymph node) (HE)
42. Paracorticalis hyperplasia (lymph node) (HE)
43. Eosinophil cell reaction in nasal polyp (HE)
44. Hashimoto thyreoiditis (HE)
45. Bronchial asthma (HE and PAS)
46. Acut rejection in kidney (HE and PAS)
47. CMV lung (HE)
VII. Genetics
   48. Mucoviscidosis (HE)
   49. Thesaurismosis: Gaucher disease (HE)

VIII. Oncology
   50. Cervical intraepithelial neoplasia CIN III (PAS)
   51. Carcinoma planocellulare of lower lip (HE)
   52. Carcinoma coli (lymph node metastasis) (HE)
   53. Myeloma multiplex (kappa, lambda IPO)
   54. Invasive breast carcinoma (lymph node metastasis) (PR + HE)
   55. Polypus adenomatosus coli (p53)
Pathology 2 - Oral Pathology

Course director: Dr. László Pajor, professor
Department of Pathology

7 credit • Pre-clinical • spring • final exam

Number of hours/semester: 56 + 0 + 42 = 98
Prerequisite: OSPPA1 completed

Topic

The pathology course will form a basis for latter clinical studies by teaching the students organ specific pathological knowledge, including the etiology and pathomechanism of diseases and the entire verticum of pathological diagnostics from macroscopy and microscopy to special ancillary techniques (ultrastructural analysis, molecular pathology). There is a special emphasis on the clinicopathological view of the diseases, i.e., understanding the interrelationship of the clinical symptoms, macroscopical and microscopical changes of the diseased organs. To this end, basic clinicopathological thinking and the capability of differential diagnostics are required by the end of the academic year. The pathology subject involves the principles of organ pathology: cardiovascular pathology, lung pathology, neuropathology, hematopathology, gastroenterology, liver- biliary tract- and pancreas pathology, kidney disorders, male genital system pathology, female genital system and breast pathology, endocrine system disorders, skin-skeletal system- and soft tissue pathology.

Conditions for acceptance of the semester

According to the Code of Studies of Examination.

Absences exceeding 15% of the histopathology classes semester will result in not signing the gradebook.

Making up for missed classes

Reading material

Lectures

I. Diseases of the heart and blood vessels (5 lectures; lecturer: Dr. L. Pajor)
   1. Ischemic heart diseases. Sudden cardiac death.
   2. Valvular disorders, myocarditis.
   3. Cardiomyopathies, tumours of the heart and pericardial disorders.
   5. Vasculitides. Vascular tumours. Diseases of the veins and the lymphatic system

II. Hematopathology (5 lectures; lecturer: Dr. Pajor)
   1. Ontogenesis of the lymphoid cells: pheno- and genotypic characteristics of the precursor and peripheral cell populations.
   2. Reactive lymph node changes: lymphadenitis, lymphadenopathies.
   3. The WHO classification of the tumors of haemopoietic and lymphoid tissues: basic principles and major categories.
   4. Non-Hodgkin and Hodgkin lymphomas
   5. Chronic myeloproliferative disorders (CMPDs)
   6. Myelodysplastic syndromes (MDS) and acute myeloid leukaemias (AML)

III. Pulmonology (6 lectures; lecturer: Dr. László)
   3. The clinical characteristics of chronic obstructive disorders, types, morphology. Infectious lung diseases
   4. The general characteristics of chronic restrictive disorders, types, morphology.
   5. Tumours of the lung
   6. Pleural and mediastinal disorders

IV. Gastroenterology (6 lectures, lecturer: Dr. L. Pajor)
   1. Congenital malformations of face, inflammatory - tumor-like conditions and tumours of the oral cavity
   2. Inflammatory diseases and tumours of the salivary glands
   3. Congenital and acquired diseases of the oesophagus
   4. Pathology of the stomach
   5. Pathology of the small intestines
   6. Pathology of the colon and rectum
V. Liver - biliary tract - pancreas (6 lectures; lecturer: Dr L. Pajor)
   1. Circulatory disorders of the liver. Non-viral inflammations in the liver. Drug hepatopathies
   2. Acute viral hepatitis
   3. Chronic viral hepatitides
   4. Cirrhosis and hepatic failure
   5. Tumor-like conditions and true neoplasia of the liver.
   6. Pathology of the extrahepatic bile ducts and exocrine pancreas

VI. Male genital and urinary tract (3 lectures; lecturer: Dr. Kálmán)
   1. Renal neoplasms. Pathology of the bladder and ureter.
   2. Pathology of the testis and the appendices.
   3. Pathology of the prostate.
   4. Pathology of the penis.

VII. Female genital tract (7 lectures; lecturer: Dr. Kálmán)
   1. Pathology of the vulva and the vagina. Inflammatory lesions of the female genital tract and STD.
   2. Pathology of the cervix.
   3. Pathology of the uterine corpus.
   4. Pathology of the ovaries.
   6. Pathology of the breast

VIII. Neuropathology (6 lectures; lecturer: Dr. Gömöri)
   1. General characteristics of the cells of the central nervous system and their reactions to injury. Pathophysiologic alterations of the central nervous system (edema of the brain, herniations, hydrocephalus)
   3. Cerebrovascular disorders (focal and global ischaemic lesions, intracranial haemorrhage and hypertensive vascular lesions of the brain)
   4. Degenerative disorders and dementia (Alzheimer disease, Pick disease and Parkinson disease)
   5. Demyelinisation disorders: multiple sclerosis
   6. Infectious diseases of the CNS (bacterial infections, virus encephalitis, opportunistic infections, AIDS, parasitic and fungal infections).
   7. Prion disease
   8. Neuroepithelial tumours
   9. Meningiomas. Primary brain lymphoma, metastases of the brain
IX. Endocrinology and soft tissue lesions (4 lectures; lecturer: Dr. Tornóczky)
   1. Pathological conditions of the hypothalamo-hypophyseal system
   2. Pathology of the thyroid gland (developmental abnormalities, hyperplasia, thyreoiditis)
   3. Pathology of the thyroid gland (tumours). Pathology of the parathyroid glands
   4. Pathology of the adrenal gland. MEN
   5. Pathogenesis of the soft tissue tumors. Fibrous, fibrohistiocyter neoplasms of the soft tissues.
   6. Tumors of the fat tissue, smooth- and striated muscle.
   7. Synovial neoplasms, tumors of the peripherial nerves.

X. Nephrology (5 lectures; lecturer: Dr. Kereskai)
   1. Renal failure
   2. Pathogenesis of glomerulonephritides
   3. Classification of glomerulonephritides
   4. Tubulointerstitial and vascular diseases
   5. Cystic diseases of the kidney. Nephrolithiasis

XI. Pathology of the skin and bones (3 lectures; lecturer: Dr. Pajor)
   1. Benign and malignant tumours of the skin, premalignant lesions
   2. Naevus – malignant melanoma
   3. Hereditary, inflammatory and metabolic bone diseases
   4. Benign and malignant bone tumours

Practices

Seminars

I. Diseases of the heart and blood vessels:
   1. Cardiology: ischemic heart disease: Aneurysma thrombostisatum ventriculi sinistri cordis /P/, Endocarditis:Endocarditis septica /P/, Endocarditis chronica - mitral stenosis /P/, Löffler, s endocarditis /P/, Myocarditis: Acut rheumatic myocarditis (HE) /S/, Cardiomyopathies: Congestive cardiomyopathy /P/, Hypertrophic cardiomyopathy /P/, Hypertrophic cardiomyopathy (HE) /S/, Congenital heart diseases:Foramen ovale late apertum /P/, Roger, s disease /P/, Ductus Botalli persistens /P/
   2. Diseases of the blood vessels: Degeneration: Dissecting aortal aneurysm /P/, Vasculitis: Luetic aortitis /P/, Arteritis temporalis (HE) /S/, Vascular tumors: Cavernous haemangioma of the liver /P/, Haemangioma cavernosum hepatitis (HE) /S/, Kaposi sarcoma (HE) /S/
II. Hematopathology:

3. Reactiv changes (lymph node): Lymphadenitis with small granulomas (Toxoplasma lymphadenitis) (HE) /S/, Infectious mononucleosis aspiration cytology (picture), flow cytometry, slide-demonstration, Lymphomas: Burkitt, s lymphoma /P/, Lymphomatous polyposis of small and large intestine /P/, B-CLL, smear (HE) /S/, CLL liver-infiltration (HE) /S/, CLL crista biopsy demonstration (HE) /S/, CLL bone marrow (HE) /S/, Hodgkin, s disease, MC (HE) /S/, Large B-cell lymphoma with Russel and Dutcher bodies (HE and PAS) /S/.

4. Plasmacell dyscrasia: Multiple myeloma /P/, Multiple myeloma – bone marrow and kidney (kappa and lambda) /S/, Myeloproliferative disorders: CML - extreme splenomegaly /P/, CML, CP, smear (MGG) /S/

III. Pulmonology:

5. Upper respiratory tract: Foreign body in bronchi /P/, Carcinoma of the larynx – supra- and subglottic involvement (2 preparations), Tracheobronchitis diptherica /P/, Pulmonary fibrosis, restrictive disorders: BOOP (HE) /S/.


7. Tumors: Bronchial carcinoma /P/, Microcellular carcinoma of the lung (HE) /S/, Planocellular carcinoma of the lung (HE) /S/, Bronchioloalveolar carcinoma (HE) /S/.

8. Vasculitis, granulomatosis: Wegener granulomatosis (HE) /S/, Pleural disorders: Mesothelioma /P/

IV. Gastroenterology:

9. Oral cavity, salivary glands: Pleiomorphic adenoma (HE) /S/, Esophagus: Esophageal diverticulum /P/, Achalasia /P/, Esophageal carcinoma /P/

10. Stomach: Giant hypertrophic – Menetrier, s gastritis /P/, Penetrating, chronic, ventricular ulcer (penetrating into pancreas) /P/, Exophytically growing carcinoma of the stomach /P/, Pyloric carcinoma /P/, Helicobacter pylori infection (Whartin-Starry) /S/.

11. Small intestine: Crohn, s disease /P/, Coeliakia – subtotal/total villus atrophy (Marsh 3c) (HE) /S/, Crohn disease (HE) /S/.

12. Large intestine: Colic diverticulosis /P/, Ulcerative colitis /P/, Rectal polyp with stalk /P/, Rectal adenocarcinoma /P/, Carcinoid of the appendix (HE) /S/, Rectal adenocarcinoma (HE) /S/.

V. Liver – biliary tract – pancreas:

13. Liver: Congenital disorders: Polycystic disease of liver and kidney /P/, Fibroepithelial liver lesion (HE) /S/, Circulatory disturbances: Pylethrombosis /P/, Central haemorrhagic necrosis (Mock hepatitis) (HE) /S/, Non hepatotropic infectious diseases: Echinococcus cysts in the liver /P/, Hepatotropic infectious diseases: Atrophia hepatis flava /P/, Postnecrotic, macronodular cirrhosis /P/, HBs-antigen positivity (HE and Shikata) /S/.
14. Alcoholic liver diseases: Alcoholic hepatitis (HE) /S/, Tumors: Focal nodular hyperplasia /P/, Hepatocellular carcinoma and cirrhosis /P/, Hepatocellular carcinoma in cirrhosis (HE) /S/, Gallbladder: Cholecyst adenocarcinoma with multiple liver metastases /P/, Pancreas: Pancreas carcinoma /P/

VI. Male genital tract:

15. Prostate: Prostatic hyperplasia and vesica trabeculata /P/, Prostate adenocarcinoma /P/, Prostate adenocarcinoma (HE) /S/


VII. Female genital tract:

17. Vulva: Carcinoma of the vulva /P/, Cervix and uterus: Uterus bicornis /P/, Acute cervicitis /P/, Carcina of the cervix /P/, Endometrial polyp /P/, Carcinoma of the uterine corpus /P/, Uterine leiomyoma /P/, Endometrial adenocarcinoma (curettage) (HE) /S/

18. Diseases of the tuba: Tuboovarial abscess /P/, Serous papillary adenocarcinoma of Fallopian tube /P/

19. Cysts and tumors of the ovaries: Mucinous, multilocular cystadenoma of the ovary /P/,

20. Breast Pathology: Fibroadenoma of the breast /P/, Carcinoma of the breast /P/, Mastitis carcinomatosa /P/, Paget-disease /P/, Intraductal papilloma (HE) /S/, Paget-disease (HE) /S/,

VIII. Neuropathology:

21. Cerebral vascular disorders: Hydrocephalus internus, Ependymoblastoma /P/, Cerebral purpura /P/, Duret haemorrhage, haematocephalus /P/, Infections: cerebral abscess /P/, Prion disease, spongiform encephalopathy (HE) /S/, Demyelination: Multiple sclerosis /P/

22. Tumors: Meningioma /P/, High grade astrocytoma /P/, Brainstem glioma /P/,

IX. Endocrinology and soft tissue lesions:

23. Endocrinology: Craniopharyngeoma /P/, Suprarenal cortical adenoma /P/, Papillary carcinoma of the thyroid gland /P/, Subacut granulomatous thyreoiditis (De Quervain) (HE) /S/, Papillary carcinoma of the thyroid (HE) /S/, Parathyroid adenoma (HE) /S/, Graves disease (HE) /S/,

24. Soft tissue pathology: Leiomyosarcoma (HE) /S/, Myxoid liposarcoma (HE) /S/, GIST (HE) /S/,

X. Nephrology and urinary tract pathology:

25. Nephropathology: congenital anomalies: Polycystic kidney (infantile sponge kidney) /P/,

26. Uropathology: Urothelial carcinoma of the bladder /P/, Urothelial carcinoma of the pyelon (HE) /S/
XI. Pathology of the skin and bones:

27. Pathology of the skin: Melanoma of the eye /P/, Malignant melanoma with metastases /P/, Turban tumor /P/

28. Bone pathology: Osteogenesis imperfecta /P/, Osteogenic sarcoma /P/, Chondrosarcoma /P/, Osteogenic sarcoma – radiologic picture, Osteoclastoma – radiologic picture, Giant cell tumor of bone (osteoclastoma) (HE) /S/,

1. Developmental disorders of the jaws, teeth and soft tissues: Abnormalities of teeth: alteration in number, shape, size and eruption. Structural disorders.


5. Inflammatory diseases of the oral mucosa. Stomatitis aphtosa, stomatitis herpetica, herpes labialis, infectious mononucleosis.


7. Role of the HPV subtypes in the pathogenesis of oral cancer.


9. Malignant epithelial and non-epithelial tumours of the oral cavity.

10. Inflammatory diseases of the salivary glands: sialoadenitis. Sialolithiasis, Mikulicz syndrome.


Exam topics/questions
Preparations
I. Cardiovascular system
   1. Aneurysma thrombotisatum ventriculi sinistri cordis
   2. Endocarditis septica
   3. Endocarditis chronica - mitral stenosis
   4. Löffler’s endocarditis
   5. Congestive cardiomyopathy
   6. Hypertrophic cardiomyopathy
   7. Foramen ovale late apertum
   8. Roger’s disease
   9. Ductus Botalli persistens
  10. Dissecting aortal aneurysm
  11. Luetic aortitis
  12. Cavernous hemangioma of the liver
II. Hematopathology
  13. Burkitt’s lymphoma
  14. Multiple myeloma
  15. CML - extreme splenomegaly
  16. Lymphomatous polyposis of small and large intestine
III. Pulmonology
  17. Foreign body in bronchi (repetition)
  18. Carcinoma of the larynx – supra- and subglottic involvement (2 preparations)
  19. Tracheobronchitis diphterica
  20. IRDS, corrosion preparation
  21. Bronchial carcinoma (repetition)
  22. Mesothelioma
IV. Gastrointestinal pathology
  23. Esophageal diverticulum
  24. Achalasia
  25. Esophageal carcinoma
  26. Giant hypertrophic – Menetrier’s gastritis
  27. Penetrating, chronic, ventricular ulcer (penetrating into pancreas)
  28. Exophyticly growing carcinoma of the stomach
  29. Pyloric carcinoma
  30. Crohn’s disease
  31. Colonic diverticulosis
  32. Ulcerative colitis
  33. Rectal polyp (repetition)
34. Rectal adenocarcinoma (repetition)

V. Hepatology, biliary system, pancreas
35. Polycystic disease of liver and kidney
36. Echinococcus cysts in the liver
37. Atrophy hepatis flava
38. Macronodular (postnecrotic) cirrhosis
39. Focal nodular hyperplasia
40. Hepatocellular carcinoma
41. Adenocarcinoma of the gall bladder with multiple liver metastases
42. Pancreas carcinoma

VI. Male genital and urinary tract
43. Clear cell carcinoma of kidney
44. Oncocytoma
45. Wilms’ tumor
46. Urothelial carcinoma of the bladder
47. Prostate adenocarcinoma
49. Mixed germ-cell tumor; seminoma and teratoma
50. Penile carcinoma

VII. Female genital tract
51. Carcinoma of the vulva
52. Uterus bicornis
53. Acute cervicitis
54. Carcinoma of the cervix
55. Endometrial polyp
56. Carcinoma of the uterine corpus
57. Tuboovarial abscess
58. Mucinous, multilocular cystadenoma of the ovary
59. Thecofibroma of the ovary
60. Dermoid cyst (repetition)
61. Dysgerminoma
62. Hydatidiform mole
63. Fibroadenoma of the breast (repetition)
64. Carcinoma of the breast (repetition)
65. Mastitis carcinomatosa
66. Paget disease
67. Serous papillary adenocarcinoma of fallopian tube
68. Teratoma of the ovary (embryonal)
VIII. Neuropathology
   69. Hydrocephalus internus, Ependymoblastoma
   70. Cerebral purpura (repetition)
   71. Secondary hemorrhage of the pons, hematocephalus
   72. Meningioma
   73. High grade astrocytoma
   74. Brainstem glioma
   75. Glioblastoma
   76. Medulloblastoma
   77. Multiple brain metastases
   78. Cerebral atrophy (repetition)
   79. Multiple sclerosis

IX. Endocrinology and soft tissue lesions
   80. Craniopharyngeoma
   81. Suprarenal cortical adenoma
   82. Papillary carcinoma of the thyroid gland

X. Nephrology
   83. Polycystic kidney (infantile sponge kidney)
   84. Polycystic kidney (adult type)
   85. Horseshoe kidney
   86. Pyelonephritis abscedens. Necrosis of papilla.
   87. Chronic pyelonephritis (repetition)
   88. Nephrosclerosis
   89. Hydronephrosis

XI. Pathology of the skeletal system and the skin
   90. Melanoma of the eye
   91. Malignant melanoma with metastases (repetition)
   92. Turban tumor
   93. Osteogenesis imperfecta
   94. Osteogenic sarcoma
   95. Chondrosarcoma
   96. Osteogenic sarcoma – radiologic picture
   97. Osteoclastoma – radiologic picture
SLIDES

I. Cardiovascular system
   1. Acut rheumatic myocarditis (HE)
   2. Hypertrophic cardiomyopathy (HE)
   3. Arteritis temporalis (HE)
   4. Haemangioma cavernosum hepatis (HE)
   5. Kaposi sarcoma (HE)

II. Haematopathology
   6. Toxoplasma lymphadenitis (HE)
   7. CLL, smear (MG)
   8. CLL liver-infiltration (HE)
   9. CLL bone marrow (HE)
  10. CLL crista biopsy demonstration (HE)
  11. Hodgkin’s disease, MC (HE)
  12. Multiple myeloma – kidney (HE)
  13. CML, CP, smear (MG)
  14. Large B-cell lymphoma with Russel and Dutcher bodies (HE and PAS)
  15. Infectious mononucleosis aspiration cytology (picture), flow cytometry

III. Respiratory system
  16. BOOP (HE)
  17. Hyalin membrane disease (PAS)
  18. Aspergillosis of the lung (HE, PAS)
  19. Pneumocystis carinii (Grocott)
  20. Wegener granulomatosis (HE)
  21. Microcellular carcinoma of the lung (HE)
  22. Planocellular carcinoma of the lung (HE)
  23. Bronchioloalveolar carcinoma (HE)

IV. Gastrointestinal pathology
  24. Pleiomorphic adenoma (HE)
  25. Helicobacter pylori infection (Whartin-Starry)
  26. Coeliakia – subtotal/total villus atrophy (Marsh 3c) (HE)
  27. Crohn disease (HE)
  28. Carcinoid of the appendix (HE)
  29. Rectal adenocarcinoma

V. Hepatology, biliary system, pancreas
  30. Fibrocystic liver lesion (HE).
  31. Central hemorrhagic necrosis (HE)
  32. HBs-antigen positivism (Shikata-orcein)
  33. Alcoholic hepatitis (HE)
34. Hepatocellular carcinoma in cirrhosis (HE)

VI. Male genital and urinary tract
35. Clear cell carcinoma of the kidney (HE)
36. Urothelial carcinoma of the pyelon (HE)
37. Prostatic adenocarcinoma (HE)
38. Seminoma (HE)

VII. Female genital tract
40. Endometrial adenocarcinoma (curettage) (HE)
41. Serous papillary cystadenocarcinoma of the ovary (HE)
42. Hydatidiform mole (HE)
43. Intraductal papilloma (HE)
44. Paget-disease (HE)
45. Invasive ductal carcinoma (HE)
46. Mucinous carcinoma (HE)

VIII. Neuropathology
47. Prion disease, spongiform encephalopathy (HE)
48. Meningoendothelial meningioma (HE)
49. Ependymoma (HE)
50. Glioblastoma (HE)
51. Senile plaques and neurofibrillary degeneration in hippocampus (Silver impregnation)

IX. Endocrinology and soft tissue lesions
52. Subacute granulomatous thyreoiditis (De Quervain) (HE)
53. Papillary carcinoma of the thyroid (HE)
54. Graves disease (HE)
55. Parathyroid adenoma (HE)
56. Phaeochromocytoma (HE)
57. Leiomyosarcoma (HE)
58. Myxoid liposarcoma (HE)
59. GIST (HE)

X. Nephropathology
60. Rapidly progressive GN with crescents (HE)
61. Hyalinised glomeruli (HE)
62. Kimmelstiel Wilson syndrome (PAS)

XI. Pathology of the skeletal system and the skin
63. Giant cell tumor of bone (osteoclastoma) (HE)
64. SSM
EXAM QUESTIONS
Selected exam questions of Pathology I.
I. Introduction – Postmortem changes – cell death
   1. The objectives of pathology and its place among the biomedical disciplines. Significance of biopsy (surgical pathology) and autopsy in the everyday medical practice. Brief summary of the historical development of pathology (humoral- and solidarpathology, Morgagni, Virchow, molecular pathology
   2. Clinicopathology of the acute myocardial infarction
II. Degeneration, pathological accumulation, pigments, calcification
   1. Pathogenesis, pathomorphology and complications of atherosclerosis
   3. Hemoglobinogenic pigments II. Pathological forms of iron storage.
   5. Clinico-pathological forms of amyloidosis, organ manifestation (gross morphology and light microscopy)
III. Growth disturbances
   1. Left ventricular hypertrophy. Causes, sequential compensatory changes and functionally consequences.
   3. Cor pulmonale chronicum.
   4. Healing by primary and secondary intention (Sanatio per primam et per secundam intentionem). Organ examples.
IV. Thrombosis, embolism, edema, hemorrhages
   1. Definition of edema, pathomechanism (Starling law), clinical forms
   2. Pathomechanism of hemorrhagic diatheses, clinical forms
   3. Definition and forms of thrombosis, factors affecting thrombus formation, clinical consequences of thrombosis, the fate of thrombus
   4. Disseminated intravascular coagulation (DIC): definition, pathomechanism
   5. Causes and pathomechanism of shock
V. Inflammation
   1. Vascular, humoral and cellular mechanisms of acute inflammations
   2. Pathogenesis, pathomorphology and clinicopathology of tuberculosis
   3. Autoimmune chronic inflammations. Rheumatoid arthritis
VI. Immunopathology
   1. Systemic lupus erythematoses (SLE)
   2. Acquired immunodeficiency syndrome (AIDS)
VII. Genetics
1. Marfan and Ehlers Danlos syndromes
2. Familial hypercholesterinaemia
3. Cystic fibrosis
4. The lysosomal storage disorders

VIII. Oncology
2. Oncopathological diagnostic strategy, grading, staging

I. Cardiovascular system
1. Angina pectoris, chronic ischemic heart disease, sudden cardiac death.
2. Pathology of the valvular disorders (inflammatory and degenerative ones).
3. Cardiomyopathies. Tumors and tumor-like conditions of the heart.
5. Congenital heart diseases.
6. Arteriosclerosis. Types and clinicopathology of the aneurysms.
7. Pathogenesis, classification and clinicopathology of vasculitides. Vascular tumours

II. Hematopathology
8. The WHO classification of the tumors of haemopoietic and lymphoid tissues: basic principles and major categories.
11. T/NK cell lymphomas.
13. Chronic myeloproliferative disorders (CMPDs). Clinicopathology and molecular pathogenesis of CML
14. Lymphadenitis and lymphadenopathies

III. Respiratory system
15. Non-tumorous disorders of upper airways (rhinitis, sinusitis, rhinoscleroma, necrotising inflammation)
16. Tumours of upper airways
17. Laryngeal oedema. Laryngitis. Tumours of the larynx.
18. Congenital anomalies of the lungs, atelectasis.
19. IRDS, ARDS.
20. General characteristics and types of chronic obstructive lung diseases.
21. Chronic restrictive lung diseases: general characteristics, etiological classification
23. Pneumonias, pulmonary abscess.
25. Characterisation and classification of lung tumours
26. Pleural and mediastinal disorders

IV. Gastrointestinal tract
27. Infectious and tumorous diseases of the oral mucosa. Odontogenic tumours
28. Pathology of the salivary glands
29. Diseases of the oesophagus
30. Inflammatory and ulcerative disorders of the stomach.
31. The benign and malignant tumours of the stomach
33. Diverticulosis of the colon. Pathology of intestinal polyps.
34. Crohn’s disease and ulcerative colitis
35. Colorectal malignancies and their relationship to polypous lesions.
36. Diseases of the appendix and the peritoneum (appendicitis, mucocele, peritonitis, retroperitoneal sclerosis, pseudomyxoma)

V. Hepatology, biliary system, pancreas
37. Hepatic lesions caused by circulatory disorders
38. Non-viral inflammatory diseases of the liver. Drug-hepatopathies
39. Acute viral hepatitis (aetiology, pathomorphology, complicated forms)
40. Chronic hepatitis (aetiology, types; pathomorphology and differential diagnostics, detection of virus associated antigens and their significance)
41. Cirrhosis and hepatic failure.
42. Tumours and tumor-like conditions of the liver.
43. Cholelithiasis (aetiology and complications) and pathology of the biliary tract.
44. Acute and chronic pancreatitis. Tumours of the pancreas

VI. Male genital and urinary tract
45. Renal tumours (cortical adenoma, juxtaglomerular tumour, oncocytoma, clear cell renal cancer, papillary carcinoma, nephroblastoma)
46. Cystitides, tumours of the bladder and ureter, urothelial carcinoma of the renal pelvis
47. Congenital malformations, inflammations and tumors of the penis
48. Prostatitides. Hyperplasia of the prostate, complications
49. Tumours of the prostate
50. Congenital abnormalities and inflammatory diseases of the testes
51. Pathology of the appendices of the testis (epididymis, spermatic cord) Tumours of the gonadal stroma and secondary tumours.
52. Testicular germ cell tumours, classification, tumour markers
VII. Female genital tract

53. Vulvovaginitides. (Syphilis. Gonorrhoea. Lymphogranuloma venereum, HSV, HPV) PID.

54. Benign epithelial lesions of the vulva. Tumors of the vulva and vagina.

55. Inflammations, tumourlike lesions and tumours of the cervix. Carcinoma of the cervix (pathogenesis, pathomorphology, screening).


57. Epithelial benign und malignant tumours of the uterine corpus.

58. Mesenchymal tumours of the uterine corpus. Diseases of the tuba.

59. Cysts and tumours of the ovaries (surface epithelial, germ cell, sex cord-stromal tumours, metastases.

60. Pathology of pregnancy (implantation disorders, gestosis, trophoblastic tumours).


VIII. Neuropathology

63. General characteristics of the cells of the central nervous system and their reactions to injury. Pathophysiologic alterations of the central nervous system (oedema of the brain, herniations, hydrocephalus)

64. Malformations of the brain.

65. Cerebrovascular disorders I. (focal and global hypoxic lesions)

66. Cerebrovascular disorders II (haemorrhages, hypertensive brain lesions)

67. Degenerative disorders of the CNS and dementia (Alzheimer and Pick disease, Parkinson disease).

68. Demyelination disorders: multiple sclerosis

69. Infectious diseases of the CNS I. (bacterial infections, brain abscess, subdural empyema)

70. Infectious diseases of the CNS II. (viral and fungal infections)

71. Prion disease

72. Neuroepithelial tumours of the CNS I. (glial tumours)

73. Neuroepithelial tumours of the CNS II. (neuronal and embryonal /medulloblastoma/ tumours)

74. Meningiomas. Primary brain lymphoma, metastases of the brain
IX. Endocrinology and soft tissue lesions
75. Anterior lobe pituitary tumours and their consequences. Posterior lobe syndromes
76. Disorders associated with hypopituitarism (Sheehan’s syndrome, chromophobic adenoma, empty sella syndrome, suprasellar tumours)
77. Disorders associated with hyperplasia of the thyroid gland (Basedow-Graves’ disease, diffuse and nodular goitre)
78. Thyreoiditis (aetiology, pathogenesis, morphology). Acute bacterial thyreoiditis, Hashimoto thyreoiditis, De Quervain’s disease, subacute lymphocytic thyreoiditis. Postpartum thyreoiditis. Riedel’s struma
79. Tumours of the thyroid gland (well and poorly differentiated types, aetiology and characteristics)
80. Pathology of the parathyroid glands (hyperplasia, adenoma, causes of hypoparathyroidism)
81. Causes and clinical consequences of hyperplasia and atrophy of the suprarenal gland. Cortical tumours of the suprarenal gland (morphology, clinical syndromes)
82. Causes of insufficiency of the adrenal cortex. Multiple endocrine neoplasia. Tumours of the adrenal medulla
83. Pathogenesis and frequency of the soft tissue tumours. Fibrous tumours and tumour-like lesions (nodular and proliferative fasciitis, myositis ossificans, keloid, fibrosarcoma) Fibromatoses.
84. Fibrohistiocytic tumours (dermatofibroma, dermatofibrosarcoma protuberans, MFH).
85. Tumours of the fat tissues (lipoma, angiomyolipoma, liposarcoma, types)
86. Tumours of the smooth- and striated muscle (leiomyoma, leiomyosarcoma, rhabdomyoma and rhabdomyosarcoma, types)
87. Tumours of the synovia (synovial sarcoma, benign synovial tumours). Tumors of the peripheral nerves (Schwannoma, neurofibroma, neurofibromatosis, MPNST).

X. Nephrology
88. Renal failure, uraemia
89. Glomerulonephritis: classification according to clinical symptoms. Histologic alterations in glomerulonephritides
90. Circulating immune complex glomerulonephritis. In situ immune complex glomerulonephritis: Masugi nephritis and Heyman nephritis
91. Nephritic syndrome (acute poststreptococcal glomerulonephritis). Rapidly progressive glomerulonephritis.
92. Nephrosis syndrome I: minimal change, membranous glomerulonephritis
93. Nephrosis syndrome II: focal segmental glomerulosclerosis, membranoproliferative glomerulonephritis
94. IgA nephropathy, chronic glomerulonephritis. Glomerular lesions associated with systemic disorders (SLE, Henoch-Schönlein purpura, Wegener’s granulomatosis, amyloidosis)

95. Diabetic nephropathy

96. Acute tubular necrosis (ischaemic and toxic). Drug-induced (hypersensitive) interstitial nephritis, analgetic nephropathy, urate nephropathy

97. Acute and chronic pyelonephritis (pathogenesis, morphology, consequences and clinical course)

98. Benign and malignant nephrosclerosis and diffuse cortical necrosis

99. Urolithiasis and obstructive uropathy

100. Congenital malformations and cystic diseases of the kidney

XI. Pathology of the skeletal system and the skin

101. Benign and malignant tumours of the skin, premalignant lesions

102. Nevus – malignant melanoma

103. Hereditary, inflammatory and metabolic bone diseases

104. Benign and malignant bone tumours

TOPICS AND EXAM QUESTIONS IN ORAL PATHOLOGY:

1. Developmental disorders of the jaws, teeth and soft tissues:
   Abnormalities of teeth: alteration in number, shape, size and eruption. Structural disorders.
   Abnormalities of the jaws: alteration in size and localisation, palatal clefts.
   Developmental disorders of the lip, tongue, congenital disorders of oral mucosa.
   Somoskövi I.

   Szalma J.

3. Pathomechanism of periodontal diseases and temporomandibular joint disorders.
   Clinical examination of the periodontium, gingivitis, hyperplasia gingivae, parodontitis, athrophia parodontii.
   TMJ forming, congenital and developmental disorders, mechanical injuries, joint inflammations, degenerative conditions, ankylosis. Joint disfunctions.
   Tóth V

4. Inflammatory diseases of oral mucosa. Stomatitis aphhtosa, stomatitis herpetica, herpes labialis, mononucleosis infectiosa. Bán Á

5. Inflammatory diseases of the oral mucosa. Stomatitis aphhtosa, stomatitis herpetica, herpes labialis, infectious mononucleosis.
7. Role of the HPV subtypes in the pathogenesis of oral cancer.
9. Malignant epithelial and non-epithelial tumours of the oral cavity.
10. Inflammatory diseases of the salivary glands: sialoadenitis. Sialolithiasis, Mikulicz syndrome.
11. Tumour-like lesions of the oral mucosa and the salivar
Surgical Propaedeutics

Course director: Dr. LAJOS KOLLÁR, professor
Department of Surgery - Baranya County Hospital

3 credit • Pre-clinical • spring • semester exam

Number of hours/semester: 28 + 14 + 0 = 42

Prerequisite: OSAEL2 completed + OSANEA completed

Topic

The subject provides an overview of basic principles in general, vascular and orthopedic surgery and intensive therapy. The lectures deal with the diagnosis and treatment of the most important diseases. During practises basic examination methods practised and discussed.

Conditions for acceptance of the semester

Questioning: oral examination.

Making up for missed classes

According to consultation with practice leaders.

Reading material


Lectures

1. History of surgery, asepsis, antisepsis
2. Indication in surgery, assessment of risk, basic principles in operating theatre
3. Wound healing
4. Principles of wound management, first aid
5. Surgical infections
6. Antibiotics in surgery
7. Principles of anaesthesia
8. Types of anaesthesia
9. Preoperative assessment and management
10. Intensive therapy, resuscitation, shock management
11. Principles of trauma management I.
12. Principles of trauma management II.
13. Pulmonary surgery
14. Non-pulmonary thoracic surgery
15. Principles of cardiac surgery I.
16. Principles of cardiac surgery II.
17. Vascular surgery: Occlusive diseases. Diagnosis and management
18. Carotid stenosis and arterial aneurysms
19. Diseases of veins and lymphatics
20. Surgery of liver, gallbladder and bile ducts
21. Surgery of thyroid and parathyroid glands
22. Diseases of breast
23. Surgery of oesophagus, stomach and duodenum
24. Surgery of pancreas and spleen
25. Diseases of small and large bowels
26. Diseases of rectum and anus
27. Surgery of acute abdomen
28. Principles in oncology. Diagnostics and management

Practices
1. General Surgery Dr. Mátrai Gábor
2. General Surgery Dr. Mátrai Gábor
3. General Surgery Dr. Mátrai Gábor
4. Intensive Therapy Dr. Verzár Zsófia
5. Intensive Therapy Dr. Verzár Zsófia
6. Traumatology Dr. Vámhidy László
7. Vascular Surgery Dr. Benkő László
8. Vascular Surgery Dr. Benkő László
9. General Surgery Dr. Orbán Lajos
10. General Surgery Dr. Orbán Lajos
11. General Surgery Dr. Orbán Lajos
12. General Surgery Dr. Benkő László
13. General Surgery Dr. Benkő László
14. General Surgery Dr. Benkő László

Seminars

Exam topics/questions
According to lecture topics.
**ORAL SURGERY: BASICS**

Course director: **DR. LAJOS OLASZ**, associate professor

Department of Dentistry, Oral-, Maxillofacial Surgery

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**2 credit • Pre-clinical • spring • semester exam**

**Number of hours/semester:** $14 + 14 + 0 = 28$

**Prerequisite:** OSAANY completed + OSANEA completed + OSPFPP completed

**Topic**

The aim of this subject is to introduce the fundamentals of oral and maxillofacial surgery. Especially dental local anesthesia and tooth extractions.

Exercising dental local anesthetic methods and to become experienced in daily tooth extractions.

**Conditions for acceptance of the semester**

According to the Code of Studies and Examination.

**Making up for missed classes**

No possibility.

**Reading material**

Stanley F. Malamed: Local Anesthesia (1990), Mosby


**Lectures**

1. Principles of dentoalveolar surgery and the relationship with dental practice
2. Maxillofacial clinical anatomy
3. Principles of asepsis and antisepsis
4. Instrumentation of an clinical oral surgery practice
5. Clinical pharmacology of local anesthesia, physiology of pain
6. Local anesthetic methods in the maxilla.
7. Local anesthetic methods in the mandible
8. Extraoral anesthetic methods, the complications of local anesthesia
9. Typical tooth extractions (using forceps).
10. Instructions and motivating after extractions
11. General systemic diseases in dental practice
12. Prevention and management of medical emergencies in the dental chair
13. Antibiotic prophylaxis and therapy
14. The role of diagnostic methods making diagnosis

**Practices**

To get experience in dental routine anesthesia and extracting more than 30 teeth.
Seminars

Exam topics/questions
1. Asepsis in dental practice. (Disinfection, sterilization and aseptic methods.)
2. The kind of local anesthetic solutions and their pharmacology.
3. The equipment of local anesthesia.
4. Armamentarium for basic oral surgery.
5. Typical tooth extractions.
6. The pharmacology of antibiotics.
7. The complications of dental local anesthesia.
8. Maxillofacial anatomy and the fundamentals of oral surgery.
10. Type of elevators.
11. The physiology of pain.
13. Extraoral anesthetic methods.
15. Extraction forceps.
17. Specification for the use of elevators.
18. The anatomic property of the teeth by extraction.
20. Instructions and motivating after extractions.
21. The armamentarium for tooth removing.
22. Disinfection and sterilization in clinical practice.
23. Anatomy of mandibular nerve (V/3).
25. The branches of carotid artery. (Art. carotis int. and ext.)
26. The connection between upper teeth and the maxillary sinus.
29. The type of diagnostic methods making diagnosis in oral surgery.
30. The lymphatic system of head and neck.