



Principle of the Diseases II

PRD-106

Student Guide



Prepared by

Pathology Department

Revised by
Medical Education Department Sohag University

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Basic Information about the Block

Program on which the course is given:

Bachelor of Medicine and Surgery (M.B. B.Ch.).

Elements (major or minor) of the program:

Undergraduate

Department offering the course:

Pathology Department

Academic year/level:

1st year, 2nd semester.

Date of specification approval: 2024-2025

Title: Principle of the Diseases II

Code: PRD-106

Credit points: 6

Weeks: 4 weeks

Lectures: 26 hours

Practical: 28 hours

group discussions (GD) , cases: 28 hours

8 hours formative assessment

Student learning activities: 90 hours including self-directed learning (SDL),

Total: 180 hours

Block Map

Block	Points	Weeks	Learning activities		
			Contact hours/points	Formative assessment/ feedback	Assignments
Principles of the Disease II PRD 106	6	4 weeks	82 h 2.7 points	0.3 points	3 points

NARS competencies covered by the block

NARS areas covered by the block

The competency areas of the NARS-Medicine competency framework are

- 1- The graduate as a health care provider.
- 2- The graduate as a health promoter.
- 3- The graduate as a professional.
- 4- The graduate as a scholar and scientist.
- 5- The graduate as a member of the health team and a part of the health care system.
- 6- The graduate as a lifelong learner and researcher.

Sub competencies

Competency Area I: The graduate as a health care provider

- 1.1 Take and record a structured, patient centered history.
- 1.2 Adopt an empathic and holistic approach to the patients and their problems.
- 1.3 Assess the mental state of the patient.
- 1.4 Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive.
- 1.5 Prioritize issues to be addressed in a patient encounter.
- 1.6 Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors.

Competency Area II: The graduate as a health promoter

- 2.1 Identify the basic determinants of health and principles of health improvement.
- 2.2 Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing.
- 2.3 Discuss the role of nutrition and physical activity in health.
- 2.4 Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases.

Competency Area III: The graduate as a professional

The graduate should adhere to the professional and ethical codes, standards of practice, and laws governing practice.

The graduate should be able to:

- 3.1 Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect.
- 3.2 Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate.
- 3.3 Respect the different cultural beliefs and values in the community they serve.
- 3.4 Treat all patients equally, and avoid stigmatizing any regardless of their social, cultural or ethnic backgrounds, or their disabilities.

3.5 Ensure confidentiality and privacy of patients' information.

Competency Area IV : The graduate as a scholar and scientist

4.1 Describe the normal structure of the body and its major organ systems and explain their functions.

4.2 Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis.

4.3 Recognize and describe main developmental changes in humans and the effect of growth development and aging on the individual and his family.

4.4 Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease.

Competency Area V: The graduate as a member of the health team and part of the health care system

5.1 Recognize the important role played by other health care professionals in patients' management.

5.2 Respect colleagues and other health care professionals and work cooperatively with them, negotiating overlapping and shared responsibilities and engaging in shared decision-making for effective patient management.

5.3 Implement strategies to promote understanding, manage differences, and resolve conflicts in a manner that supports collaborative work.

5.4 Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system.

Professional Information

Block Aims



Overall Aims:

This block aims to provide students with the basic principles of PATHOLOGY as basic concepts for understanding pathogenesis of diseases.

Intended Learning Outcomes of the Block:

A-Knowledge and understanding:

Upon completion of the course, students should be able to:

- A1- Recognize the different terminology and definitions of pathological study and fundamental bases of disease processes.
- A2- Mention an overview of cellular responses to physiological stress and injurious stimuli
- A3- List causes and mechanisms of cell injury and its effects.
- A4- Define necrosis; describe pathological changes in tissues affected with necrosis, mention types of necrosis and its fate. Define the term apoptosis, enumerate conditions where it occurs and morphological changes associated with it.
- A5- Identify types of cellular accumulations and their causes, mechanisms and describe the gross and microscopic features of cloudy swelling, hydropic swelling, fatty change, amyloidosis, hyalinosis and pathological calcification.
- A6- Recognize adaptations of cellular growth and differentiation. Define each term with examples, the causes of excessive growth (hypertrophy and hyperplasia) and decreased growth (agenesis, hypoplasia, aplasia and atrophy). Distinguish between the disorders of differentiation of the cells (dysplasia and metaplasia)
- A7- Define inflammation and mention its purpose, Causes, types of inflammation, describe pathogenesis of acute inflammation, inflammatory fluid exudates, chemotaxis, phagocytosis, chemical mediators, cardinal signs of acute inflammation, fate, Types of acute inflammation, Types of acute suppurative inflammation, Types of acute nonsuppurative inflammation and pathology of each type.
- A8- Define the term chronic inflammation and mention its characteristics and causes. Mention the types of chronic inflammation and their pathologic features. Describe the contribution of the inflammatory cells to the development of chronic inflammation and the role of type IV hypersensitivity.
- A9- Define the term granuloma; describe features and types of granulomatous inflammation. Give examples of diseases associated with this pattern of response.
- A10- Define repair and its types. Mention the factors that affect wound healing. Define the term regeneration and give examples. Enumerate pathological processes where repair occurs by fibrosis and mention the phases of repair. Describe the phases of wound healing List the mechanisms that control repair, and complications of wound healing.
- A11- Describe hemodynamic disorders as thrombosis, embolism ischemia, infarction, hemorrhage, gangrene and edema and mention their causes and effects on different organs.
- A12- Define neoplasia and Describe the different points related to neoplasia regarding its definition, characters and behavior of tumor, classifications to benign and malignant epithelial

tumors, benign and malignant connective tissue tumors, grading and staging of cancer, the spread of tumors, prognosis of tumors and its effects on the host.

A13- Describe the histological classification of the most common neoplasm, their features and examples for benign and malignant tumors. Identify various types of benign and malignant tumors, both by histopathological and by gross picture examination in the museum.

A14- Describe Tumor etiology, carcinogenesis, their types, molecular basis and laboratory diagnosis of cancer.

B- Intellectual skills

B1- Predict the signs and symptoms of a disease based on the underlying gross & microscopic tissue changes .

B2- Interpret a pathology report and integrate gross and microscopic findings with the underlying etiology

B3- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis

C- Practical/ Professional skills:

C1- Write adequate pathological description concerning main features of gross appearance of a museum specimen

C2- Use the light microscope to examine and identify microscopic findings of some selected examples of studied diseases.

C3- Learn proper handling of and processing tissue specimens sent for pathological examination

C4- Write a pathological report.

D- General and transferable skills

D1- Appreciate the importance of lifelong learning and show a strong commitment to it.

D2- Frame a question, search the literature, collect, analyze, critically appraise and utilize the obtained information to solve a particular clinical problem according to the principles of evidenced based medicine

D3- To maintain a professional image in manner, dress, speech and interpersonal relationships that is consistent with the medical profession's accepted current standards in the community

D4- To identify difficult ethical situations and how to properly deal with them

D5- To express themselves freely and adequately by improving their descriptive capabilities and enhancing their communication skills

D6- To respect his colleagues and a commitment to cooperate with others.

Structure of the block

	Lectures	Practical	Tutorial/Small group discussions Cases	Formative assessment	SDL	Total
Hours	26	28	28	8	90	180
Credit Points	0.86	0.92	0.92	0.3	3	6

Learning Methods

- 1- Lectures for knowledge and intellectual skill outcomes.
- 2- Practical sessions to gain practical skills aided with the practical book.
- 3- Self directed learning (SDL) for the topics studied in lectures or related topics; including libraries, E-learning (practical photographs and questions of different topics available online for student's assessments) and consulting professors for gathering information.
- 4- Group discussions (GD).
- 5- Cases.
- 6- Tutorials

Methods of Student Assessment

1. Formative:

This is used to monitor student's learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

It's given at least once in the form of quizzes that is made available for the students at the E-learning site at the end of the block.

Answers are presented instantly after the attempts and discussed on the students groups or in person with the teaching staff

Questions should be consistent with the level of the final exam. The student's attendance is a condition for entering the summative exams. The electronic or paper achievement file must be used to follow up on the students' evaluation, and its completion is a condition for entering the final exams

1. Summative:

It is used to evaluate student's achievements at the end of an instructional unit. The grades tell whether the student achieved the learning goal or not.

The student's performance will be assessed according to the following:

الدور الاول

Assessment task	Type of assessment	Proportion of total assessment	
		%	Marks
Portfolio	- Practical activities (department assignment) - Case discussion/presentation	10	9
End block exam	MCQ	20	18
Final written exam	MCQ (50%) + 50% Short answer questions & modified Essay questions	40	36

Practical	Slides & Jars	30	27
Total		100	90

الدور الثاني

<u>Final</u>	60%	<u>54 marks</u>
<u>Practical</u>	40%	<u>36 marks</u>

Block evaluation:

- Students 'results
- Students' feedback
- Tutors 'feedback

Block Contents

Lecture Topics and Their Intended Learning Outcomes

No	Contact Hours	Lectures Titles	ILOs
1	1h	Introduction to pathology and cell injury	A1, B2 A2, A3, B1, B2, B3.
2	1h	Necrosis and apoptosis	A4, B1, B2, B3
3	1h	Cellular accumulations (I)	A5, B1, B2, B3
4	1h	Cellular accumulations (II)	A5, B1, B2, B3
5	1h	Cellular adaptation(I)	A6, B1, B2, B3
6	1h	Cellular adaptation(II)	A6, B1, B2, B3
7	1h	Inflammation (I)	A7, B1, B2, B3
8	1h	Inflammation (II): Acute inflammation	A7,B1,B2,B3
9	1h	Inflammation (III): Acute suppurative inflammation	A7, B1, B2, B3
10	1h	Inflammation (IV): Acute Non suppurative inflammation	A7, B1, B2, B3
11	1h	Chronic inflammation	A8, A9, B1,B2,B3
12	1h	Granulomatous Disease (I):TB	A8, A9, B1, B2, B3
13	1h	Granulomatous Disease (II):Bilh.	A8, A9, B1, B2, B3
14	1h	Tissue repair (I): types and mechanisms	A10, B1, B2, B3
15	1h	Tissue repair (II): Factors affecting and complications	A10, B1, B2, B3
16	1h	Hemodynamic disorders (I): Hyperemia, congestion and thrombosis	A1, B1, B2, B3
17	1h	Hemodynamic disorders (II): Embolism, ischemia and infarction	A11, B1, B2, B3
18	1h	Hemodynamic disorders (III): ischemia and infarction ..cont.	A11, B1, B2, B3
19	1h	Hemodynamic disorders (IV): Gangrene, heamorrhage and edema	A11, B1, B2, B3
20	1h	Neoplasia (I): Classification	A12, A13, B1,B2,B3
21	1h	Neoplasia (II): Tumors spread	A12, A13, B1, B2, B3



22	1h	Neoplasia (III): Tumor behavior	A12, A13, A14, B1,B2,B3
23	1h	Neoplasia (IV): Common examples of benign tumors	A12, A13, B1, B2, B3
24	1h	Neoplasia (V): Carcinogenesis and tumor etiology	A12, A13, B1, B2, B3
25	1h	Neoplasia (VI): Common examples of malignant tumors	A12, A13, B1, B2, B3
26	1h	Neoplasia (VII): Locally malignant, developmental and embryonic tumors	A12, A13, B1, B2, B3
		Revisions and Exams	
<i>Total</i>	26 hrs		

Practical Topics and Their Intended Learning Outcomes



No	Contact Hours	Practical Topics	ILOs
1	2	Tissue processing and microscopic examination	C1,C2, C3, C4, B1, B2, D1
2	2	Museum specimen examination	C1,C2, C3, C4, B1, B2, D1
3	2	Cell injury, necrosis and Cellular accumulations (I)	C1,C2, C4, D1, D3, D6, B1, B2
4	2	Cell injury , necrosis and cellular accumulations (II)	C1,C2, C4, D1, D3, D6, B1, B2
5	4	Acute inflammation	C1,C2, C4, D1, D3, D6 B1, B2
7	2	Chronic inflammation	C1,C2, C4, D1, D3, D6 B1, B2
8	2	Granulomatous disease (TB)	C1,C2, C4, D1, D3, D6 B1, B2
9	2	Granulomatous disease (Bihl)	C1,C2, C4, D1, D3, D6 B1, B2
10	2	Hemodynamic disorders	C1,C2, C4, D1, D3, D6 B1, B2
11	2	Benign epithelial tumors	C1,C2, C4, D1, D3, D6 B1, B2
12	2	Benign Mesenchymal tumors	C1,C2, C4, D1, D3, D6 B1, B2
13	2	Malignant epithelial tumors	C1,C2, C4, D1, D3, D6 B1, B2
14	2	Malignant mesenchymal tumors	C1,C2, C4, D1, D3, D6 B1, B2
		Revisions and Exam	
Total	28		

Self-Directed Learning, Group Discussion and Cases Topics

No	Contact Hours	Practical Topics	ILOs
1	2	Introduction to pathology, how to prepare and examine pathologic specimen	A1, B1, B2, B3, D1-D6
2	2	Cell injury, Necrosis and apoptosis	A3, A4, A5 B1, B2, B3, D1-D6
3	2	Cellular accumulations	A5, B1, B2, B3, D1-D6
4	2	Cellular adaptations	A6, B1, B2, B3, D1-D6
5	2	Acute inflammation	A7, B1, B2, B3, D1-D6
7	2	Chronic inflammation	A8, A9, A10, A11, B1, B2, B3, D1-D6
8	2	Granulomatous disease (TB&Bilh,)	A8, A9, A10, A11, B1, B2, B3, D1-D6
9	2	Repair	A8, A9, A10, A11, B1, B2, B3, D1-D6
10	2	Hemodynamic disorders	A11, B1, B2, B3, D1-D6
11	2	Classification and characters of tumors Difference between benign and malignant tumors	A12-A13, A14, B1, B2, B3, (D1-D6)
12	2	Mechanisms of spread of malignant tumors Routs of spread of malignant tumors	A12-A13, A14, B1, B2, B3, (D1-D6)

13	2	Etiology of cancers and laboratory diagnosis of tumors	A12-A13, A14, B1, B2, B3, (D1-D6)
14	2	Types of benign and malignant tumors Demonstrate how to write a final gross and microscopic pathological report on tumors	A12-A13, A14, B1, B2, B3, (D1-D6)
		Revisions and Exam	
Total	28		

Formative assessment

This is used to monitor student's learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

It's given at least once in the form of quizzes that is made available for the students at the E-learning site at the end of the block.

Answers are presented instantly after the attempts and discussed on the students groups or in person with the teaching staff

Questions should be consistent with the level of the final exam. The student's attendance is a condition for entering the summative exams. The electronic or paper achievement file must be used to follow up on the students' evaluation, and its completion is a condition for entering the final exams

Blueprint of the block

weeks	No	List of Topics	Contact Hours	Weight	Total marks	End of the block	Final exam
First week	1	Introduction Cell injury	1 1	4% 4%	2 3	1 2	1 1
	2	Cellular Accumulations	2	7%	4	3	1
	3	Cellular adaptation	2	7%	4	2	2
	4	<u>Inflammation:</u> Acute inflammation	4	15%	8	5	3
second week	5	Chronic Inflammation	1	4%	2	1	1
	6	Granulomatous disease (TB&Bil.)	2	8%	4	2	2
	7	Repair	2	7%	4	2	2
Third week	8	<u>Circulatory disturbances</u>	4	15%	8		8
	9	<u>Neoplasia (I):</u> characters of benign and malignant tumors. Routs and mechanism of spread of tumors	4	15%	8		8
Fourth week	10	<u>Neoplasia 2:</u> _examples of benign and malignant tumors and etiology of cancer	3	14%	7		7
			26	100	54	18	36

weeks	No	List of Topics	Contact Hours	Weight	Final exam
First week	1	Museum specimen and microscopic examination	4	14%	4
	2	Cell Injury and necrosis Cellular accumulations	4	14%	4
second week	3	Acute inflammation	4	14%	4
	4	Chronic inflammation &	2	7%	2
Third week	5	Granulomatous Disease	4	14%	4
	6	Hemodynamic disorders	2	7%	2
Fourth week	7	Benign Tumors	4	15%	4
	8	Malignant Tumors	4	15%	3
Total			28	100%	27

Exam	Final (60%)	Practical (40%)	Total
Pathology department	54	36	90
Total	54	36	90



Study Resources

1. Atlas in practical pathology: including the photographs of the slides and jars in pathology laboratory and museum
2. Essential books (Text books): **Robbins Basic Pathology, Kumar, Abbas, Aster.**
3. web sites on pathology:
 - www.webpath.com
 - www.pathmax.com
 - www.virtualpathology.leeds.ac.uk
 - www.pathology.outline.com

Outlines of the Lectures

Lecture (1): Introduction to pathology and cell injury.

By the end of the lecture the student will be able to:

- Define and understand the following terms; pathology, etiology and predisposing factors.
- Know classification of the diseases
- Define and understand the following terms; pathogenesis, fate and complications of a disease
- Identify types of pathological specimens and how it is prepared and examined.
- introduction to cell injury; Mention an overview of cellular responses to physiological stress and injurious stimuli.
- List the causes and mechanisms of cell injury and its effects.

Lectures (2): Necrosis and apoptosis

By the end of the lecture the student will be able to:

- Define necrosis and describe pathological changes in tissues affected with necrosis.
- Mention types of necrosis and its fate.
- Define the term apoptosis, enumerate conditions where it occurs and morphological changes associated with it.
- Describe mechanisms contributes greatly to variability in responses

Lectures(3):Cellular accumulations (I): cloudy swelling, hydropic degeneration and fatty changes.

By the end of the lecture the student will be able to:

- Define cloudy swelling; mention its mechanisms, pathological feature and fate.
- Define hydropic swelling , mention its mechanisms, pathological feature and fate .
- Define fatty change, enumerate causes leading to this injury and pathological features.
- Give examples of organs commonly affected with fatty changes. In each organ give brief description of the pathological features of fatty changes in that organ and effects on its function

Lecture(4):Cellular accumulations (II).

By the end of the lecture the student will be able to:

- Define the term amyloidosis, mention the nature of amyloid deposits.
- Enumerate types of amyloidosis and give examples of sites affected
- Enumerate organs that commonly affected with amyloidosis with description of gross and microscopic features of each of them
- Define the term hyalinosis and mention its types
- Define pathological calcification and mention its types with examples for each type

Lecture(5):Cellular adaptation(I): Disorders of cell growth.

By the end of the lecture the student will be able to:

- Identify the Types of cellular adaptation
- Mention Factors affecting cell growth
- Define atrophy and provide examples and differentiate between atrophy, hypoplasia and involution
- Define hypertrophy and provide examples.
- Define hyperplasia and provide examples.

Lecture (6): Cellular adaptation (II):Disorders of cell maturation and introduction to Neoplasia:

By the end of the lecture the student will be able to:

- Define metaplasia, provide examples and identify its clinical significance.
- Define dysplasia and identify its sites, grades, microscopic features and clinical significance and describe main difference between in situ and invasive malignancy
- Define the term Neoplasia and identify other important terminologies
- Identify main features of neoplasms
- Mention the differentiate between hyperplasia and Neoplasia

Lecture (7): Inflammation: definition&causes&pathogenesis&signs.

By the end of the lecture the student will be able to:

- Define inflammation and mention its purpose.
- Mention Causes of inflammation.
- Describe types of inflammation.
- Define acute inflammation.
- Mention pathogenesis of acute inflammation

Lectures (8): Acute inflammation: mechanisms and formation of exudate. By the end of the lecture the student will be able to:

- Describe inflammatory exudate formation.
- Define chemotaxis and phagocytosis.
- Mention chemical mediators and their role
- List Cardinal signs of acute inflammation.
- Mention systemic effects of acute inflammation.
- Mention course (fate) of acute inflammation.

Lectures(9):Acute suppurative inflammation

By the end of the lecture the student will be able to:

- Classify the types of acute inflammation.
- Describe types of acute suppurative inflammation.
- Define abscess, carbuncle, furuncle and cellulitis

Lectures(10):Acute non suppurative inflammation

By the end of the lecture the student will be able to:

- List types of acute non suppurative inflammation with examples.
- Mention pathology of each type.

Lecture(11):Chronic inflammation: definition and types

By the end of the lecture the student will be able to:

- Mention causes and morphological features of chronic inflammation.
- Identify the pathogenesis of chronic inflammation and tabulate the difference between it and acute inflammation.
- Classify chronic inflammation and mention the main pathological features.
- Define the term granuloma, its classification and its pathological features.
- Differentiate between acute and chronic inflammation.

Lecture(12): Granulomatous Disease (I): Tuberculosis and sarcoidosis.

By the end of the lecture the student will be able to:

- Give examples of diseases characterized by granuloma formation .
- Define tuberculosis and mention methods of tuberculous infection and the sites/organs affected by primary infection.
- Describe the tissue reaction to tuberculosis, the structure of tuberculous granuloma, role of type IV hypersensitivity and the fate of the tubercle.
- Mention the pathological features, components and fate of primary complex.
- identify the main difference between TB and sarcoidosis.

Lecture(13):Granulomatous Disease (II): Bilharziasis and others...etc.

By the end of the lecture the student will be able to:

- Define schistosomiasis (Bilharziasis) and enumerate the main species affecting the human body

- Describe the pathological features of bilharziasis and mention the most common sites affected.
- Mention other examples of granuloma (actinomycosis, leprosy, fungus...etc).

Lecture(14):Tissue repair (I): types and mechanisms

By the end of the lecture the student will be able to:

- Define repair and mention its types
- list the types of cells according to ability to regenerate
- Define the term regeneration and give examples of repair by regeneration.
- Enumerate pathological processes where repair occurs by fibrosis
- Mention the phases and mechanisms of repair.

Lecture(15):Tissue repair (II): Factors affecting and complications

By the end of the lecture the student will be able to:

- List the mechanisms that control repair and factors that affect it
- Describe the phases of healing of a surgical wound and that of gaping wounds (e.g. lacerated wound or abscesses)
- List the complications of wound healing.

Lecture(16): Hemodynamic disorders (I)

Hyperemia,congestion and thrombosis

By the end of the lecture the student will be able to:

- Mention the difference between the term hyperaemia and congestion with examples for each.
- Enumerate causes of general chronic venous congestion and describe pathological features of organs affected with such condition.
- Define the term thrombus and list its types.
- Describe the events in thrombus formation and list the factors that predispose to thrombus formation.
- Enumerate fate and complications of a thrombus formation.

Lecture(17): Hemodynamic disorders (II); Embolism& introduction to ischemia and infarction

By the end of the lecture the student will be able to:

- Define the term embolus and list types of emboli and its effects.
- Enumerate causes and effects of pulmonary embolism.
- Define the terms ischaemia and infarction. List their major causes and types.

Lecture(18): Hemodynamic disorders (III); Ischemia and infarction

By the end of the lecture the student will be able to:

- Describe the changes that occur in infarcted tissue
- Enumerate causes of infarction and the pathological features in infarctions of the kidney, lung, spleen, intestine, brain and lung

Lecture(19): Hemodynamic disorders (IV); Gangrene, heamorrhage and edema

By the end of the lecture the student will be able to:

- Define gangrene, enumerate its types and mention the causes, pathological features and fate of each type
- Compare between dry and moist gangrene
- Define hemorrhage and enumerate its causes, types of heamorrhage and effects.
- Define edema and enumerate its causes, types and subtypes

Lecture(20):Neoplasia (I): Classification, epidemiology & characters of benign and malignant tumors
By the end of the lecture the student will be able to:

- Know common tumor worldwide and common tumors in Egypt (Cancer epidemiology)
- Classify the tumors
- Identify Tumor nomenclature.
- Recognize Tumor growth: rate of growth and mode of growth of benign and malignant tumors
- Identify general tumor morphology (gross features and microscopic features)

Lecture(21):Neoplasia (II): Tumor spread

By the end of the lecture the student will be able to:

- Identify and explain how the tumor spread locally (Direct spread or Invasion of nearby tissue)
- Identify and explain how the tumor metastasize (Distant spread or metastasis)
- Identify routs of spread of malignant tumors (Lymphatic, Haematogenous, Transcelomic, others...).
- Know common course of tumor cell (course of tumor emboli)

Lecture (22): Neoplasia (III): Tumor behavior

By the end of the lecture the student will be able to:

- Identify the Grading and staging of malignant tumors.
- Enumerate the main complications of benign and malignant tumors (effects on the host).
- Mention the causes of death in malignant tumors.
- Compare between benign and malignant tumors

Lecture (23): Neoplasia (IV): Common examples of benign tumors

By the end of the lecture the student will be able to:

- Classify benign tumors (epithelial and mesenchymal)
- Describe definition and morphology (gross and microscopic features) of papilloma with examples
- Describe definition, morphology (gross and microscopic features) and types of adenoma
- Describe definition, morphology (gross and microscopic features) and types of leiomyoma

Lecture (24): Neoplasia (V):Carcinogenesis and tumor etiology and diagnosis

By the end of the lecture the student will be able to:

- Discuss carcinogenesis (Tumor genetics: proto-oncogenes, cancer suppressor genes, apoptosis regulating genes and DNA repair genes)
- Mention the etiology of cancer (carcinogens, co carcinogens, precancerous lesions)
- Explain multistep carcinogenesis
- Identify clinical aspects of cancer diagnosis and early detection of cancer

Lecture (25): Neoplasia (VI): Common examples of malignant tumors:

By the end of the lecture the student will be able to:

- Classify malignant tumors (epithelial and mesenchymal).
- Define squamous cells carcinoma and describe its morphology (gross and microscopic features)
- Define transitional cell carcinoma, enumerate its sites and describe its morphological features
- Define adenocarcinoma and mention its types and morphological features.
- Define the term sarcoma and enumerate common types of sarcomas.
- Main differences between carcinoma and sarcoma

Lecture (26): Neoplasia (VII): Locally malignant, developmental and embryonic tumors

By the end of the lecture the student will be able to:

- Define locally malignant tumors and mention main characters and common examples
- Describe sites and morphological features of basal cell carcinoma
- Define developmental tumors with examples
- Define hamartomas and describe gross and microscopic features of hemangiomas.
- Define embryonal tumors (blastomas) and mention common examples.
- Enumerate germ cell tumors and identify types of teratomas.

Outlines of Topics for Group Discussion(GD), Self-directed Learning (SDL) and Cases

Topic (1)

Introduction to pathology and Cell injury, Necrosis& apoptosis

ILOs:

- Identify how pathological specimen is prepared and examined techniques used in pathology
- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of a case of necrosis.
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis
- Memorize causes and mechanisms of cell injury and its effects
- Compare and contrast necrosis and apoptosis.

Topic(2)

Cellular accumulations

ILOs:

- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of a case of hydropic swelling, fatty changes, amyloidosis, hyalinosis, calcification
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.

Topic(3)

Cellular adaptation

ILOs:

- Recall the causes of excessive growth (hypertrophy and hyperplasia) and decreased growth (agenesis, hypoplasia, aplasia and atrophy).
- Distinguish between the disorders of differentiation of the cells (dysplasia and metaplasia).
- Distinguish between hyperplasia and Neoplasia.
- Distinguish between CIS& locally malignant tumor.

Topic(4)

Acute inflammation

ILOs:

- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of a case of acute inflammation.

- Describe the pathogenesis of acute inflammation inflammatory fluid exudate formation , and role of Chemotaxis, phagocytosis and chemical mediators

- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.
- Predict the signs and symptoms of a disease based on the underlying gross & microscopic tissue changes

Topic(5)

Acute suppurative & non suppurative inflammation

ILOs:

- Compare and contrast causes, and types of acute suppurative and acute non suppurative inflammation
- Describe the pathogenesis of acute non suppurative inflammation

Topic(6)

Chronic inflammation

ILOs:

- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of a case of chronic inflammation.
- Compare between acute and chronic inflammation
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.

Topic(8)

Granulomatous disease

ILOs:

- Predict the signs and symptoms of a disease based on the underlying gross & microscopic tissue changes on chronic inflammation with reference to T.B. and Bilharziasis.
- Compare between TB& sarcoidosis.
- Compare between primary & secondary TB.

Topic (8)

Repair

ILOs:

- Recall the factors that affect wound healing
- Define the term regeneration and give examples of repair by regeneration .
- Enumerate pathological processes where repair occurs by fibrosis and mention the phases of repair .
- Describe the phases of healing of a surgical wound and that of a gaping wounds (e.g. lacerated wound or abscesses .)
- List the mechanisms that control repair.
- List the complications of wound healing

Topic(9)

Hemodynamic disorders (I) **(congestion, thrombosis, embolism, Infarction)**

ILOs:

- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of cases of thrombosis, embolism.
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.

- Predict the signs and symptoms of a disease based on the underlying gross & microscopic tissue changes
- Outline types of thrombi and emboli and difference between them.
- Memorize fate and complications of a thrombus formation

- List types of emboli and their effects (ischemia, infarction).

Topic(9)

Haemodynamic disorders (II) **(hemorrhage, gangrene and edema)**

ILOs

- Integrate gross and microscopic findings with the underlying etiology and interpret the pathology report of cases of gangrene and edema.
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.
- Mention different types of hemorrhage with examples for each type
- Compare between dry and moist gangrene
- What are the types of edema and pathologic features of each type

Topic (10)

Classification and characters of tumors **Difference between benign and malignant tumors**

ILOs

- Integrate gross and microscopic findings and interpret the pathology report of cases of benign and malignant tumors.
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.
- Predict the behavior of a tumor based on the underlying gross & microscopic tissue changes

Topic (11)

Mechanisms of spread of malignant tumors **Routes of spread of malignant tumors**

ILOs

- Define the term metastasis and describe the steps involved in metastasis (mechanism of spread)
- Outline the main routes by which malignant cells spread and the preferential sites to which particular neoplasms spread.
- Mention factors affecting the distribution of metastasis
- Mention organs which are common sites for selective metastasis
- Mention the effect of metastatic tumour on bone
- Interpret of pathology report of a case of tumor

Topic (12):

Etiology of cancers & laboratory diagnosis of tumors **Types of benign and malignant tumors**

ILOs

- Outline mechanism of carcinogenesis
- Describe how knowledge of proto-oncogene and tumor suppressor genes has helped to explain the carcinogenesis
- Define co-carcinogens and mention examples
- Define hormonal dependent tumors and give examples.
- Enumerate carcinogenic chemicals and give examples
- List oncogenic DNA, RNA viruses and mention neoplastic conditions associated with them

- Mention the role of H-pylori in carcinogenesis
- Describe the role of ultraviolet rays and ionizing radiation in carcinogenesis
- Integrate gross and microscopic findings and interpret the pathology report of cases of benign and malignant tumors.



Topic (13)

Types of benign and malignant tumors

ILOs

- Demonstrate how to write a final gross and microscopic pathological report on tumors
- Integrate gross and microscopic findings and interpret the pathology report of cases of benign and malignant tumors.
- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis.
- Predict the behavior of a tumor based on the underlying gross & microscopic tissue changes
- Interpret of pathology report of a case of tumor

Schedule

	lecture	time	staff member	
Sunday 9/2	introduction inflammation	2 hours	أ.د. فاطمة	
Sunday 16/2	acute inflammation	2hours	أ.د. فاطمة	
Sunday 23/2	tissue repair	2hours	أ.د. عفاف	
Sunday 2/3	acute and chronic inflammation	2 hours	أ.د. فاطمة	
Sunday 9/3	granulomatous diseases	2 hours	أ.د. فاطمة	
Sunday 16/3	necrosis and apoptosis cellular accumulation	1hour 1hour	د. نجوي د. علا	
Sunday 23/3	cellular accumulation cellular adaptation	1hour 1hour	د. غادة د. مایسة	
Sunday 6/4	circulatory	2 hours	أ.د. ایمان	
Sunday 13/4	circulatory	2hours	أ.د. ایمان	
Sunday 27/4	cellular adaptation tumors	1 hour 1 hour	د. مایسة أ.د. احمد رشدي	
Sunday 4/5	tumors	2hour	أ.د. أحمد رشدي	
wednesday 7/5	tumors	2hour	أ.د. احمد رشدي	
Thursday 8/5	tumors	2hours	أ.د. احمد رشدي	