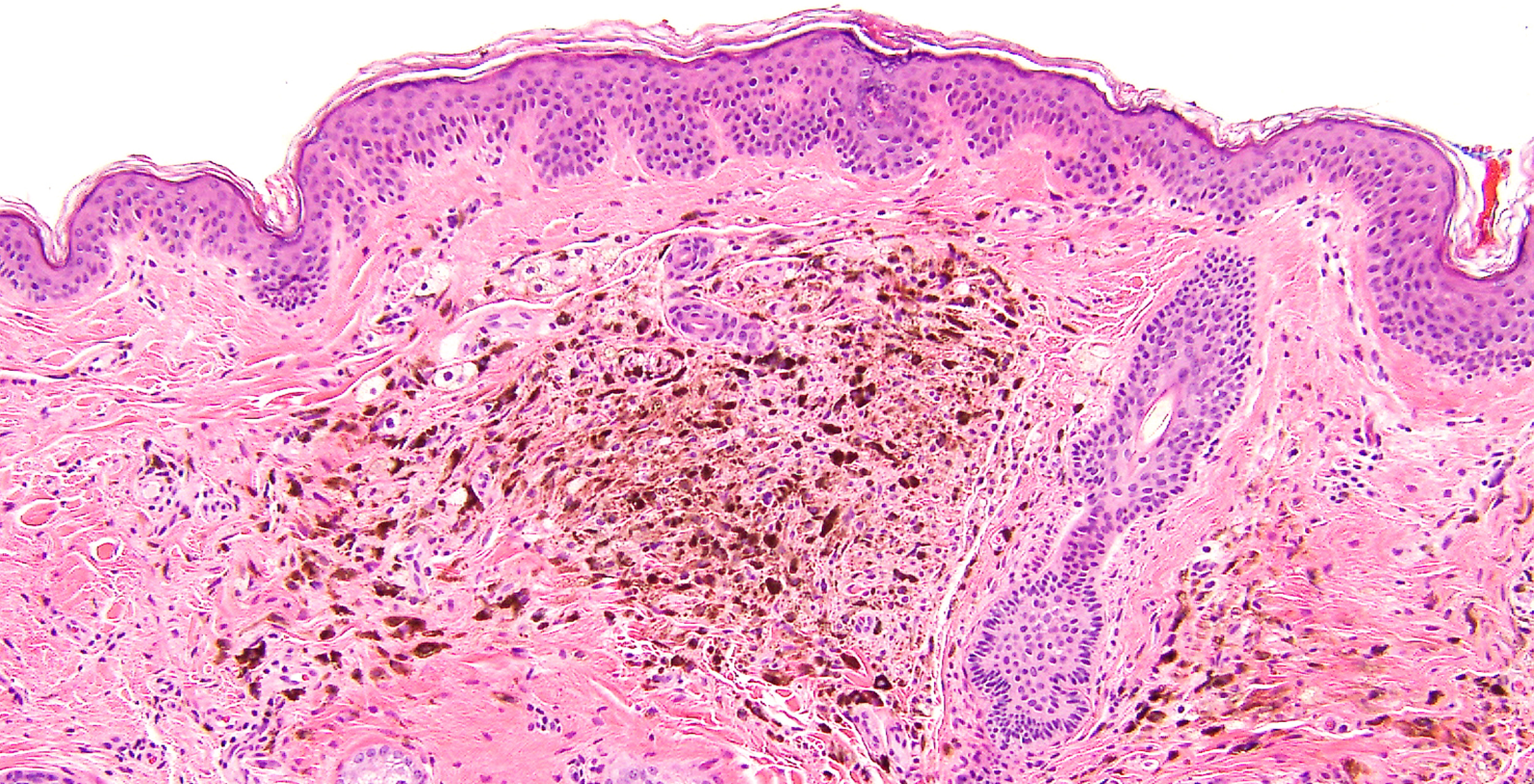
STEP

Dr. Tarek El Shamy

Pathology

MCQ Notes

Cell Injury



Tutorial Cell Injury

1. A fifty-year old male smoker with history of hematemesis (vomiting of blood) now presented by progressive dysphagia and cachexia. Endoscopic biopsy was taken and revealed adenocarcinoma. Which of the following adaptive changes most likely is the precursor lesion:

a. hyperplasia
b. metaplasia
c. aplasia
d. any of the above

2. A 30y old male with AIDS dementia complex develop acute pneumonia and died from respiratory insufficiency. At autopsy many central nervous system neurons show hydropic degeneration. This manifestation o f sub lethal neuronal injury was most likely caused due to impairment of which of the following cellular processes:

a.DNA synthesis
b. lipid peroxidation
c. mitotic spindle assembly
d.plasma membrane sodium transport
e. ribosome biosynthesis

3. A liver biopsy from 34y old woman with history of alcoholism. Which of the following is best description for changes occur:

a. Accumulation of TG within hepatocytes
b. Apoptosis with replacement of damaged cells with lipid laden MQ
c. Bilirubin accumulation with mobilization of fat by bile salts
d. Enzymatic fat necrosis with digestion of fat parenchyma by released enzymes

4. 56y old man recovered from myocardial infarction after his myocardium was entirely saved by thrombolytic therapy. If it had been possible to examine microscopic sections from his heart during the ischemic episodes. Which of the following cellular changes is the most likely to be found:

a. Karyolysis
b. Karyorrhexis
c. Pyknosis
d. Swelling of the endoplasmic reticulum

5. A40y old female had chronic renal failure with hypertension. Her heart is expected to show:

a. myocardial hypertrophy
b. fatty infiltration
c. myocardial hyperplasia
d. fatty degeneration
e. edema

6. Following the infarction of anterior pituitary. The adrenal glands were found to weight only 2.2grams where the normal ranges from 4 to 6 grams. This alterations is due to:

a. Metaplasia of the cortex
b. Lipid depletion of the cortex
c. Atrophy of the medulla
d. Atrophy of the cortex.

7. 73y old male with known history of hypertension was presented by decrease of the cardiac efficiency laboratory tests revealed high serum creatinine kinase this could be explained by:

a. Myocardial fibers hypertrophy
b. Myocardial fibers reversible injury
c. Myocardial fibers irreversible injury
d. Myocardial fibers fatty change

8. All the following is reversible except:

a. Cloudy swelling
b. Hypertrophy
c. Hyperplasia
d. Apoptosis.

9- Apoptosis differs from necrosis in all of the following except:

A-it is an irreversible injury
B-it is death of single cell
C-it is programmed cell death
D- it occurs as physiological and pathological process

10. Coagulative necrosis occurs in all of the following except:

A-kidney
B-spleen
C-lung
D-heart
E-CNS

11. Liquefactive necrosis occurs in

A-kidney
B-spleen
C-intestine
D-center of pyogenic abcess

12. Apoptosis occurs in all except

A-during embryogenesis
B-some physiological conditions
C-viral hepatitis
D-Tumors
E-Tuberculosis

Match

Each mechanism with its direct effect:

1. ATP depletion	a. + of enzymatic reactions
2. Mitochondrial damage	b. leakage of the cell content
3. Increase free cytosolic ca	c. Disturbance of transmembrane pump
4. Damage of plasma membrane	d. initiation of apoptosis

1.	2.	3.	4.

1. Two cystoscopic biopsies(A&B) from the urinary bladder of a 60 year old male known to have bilharziasis are microscopically examined , Biopsy A reveals marked thickening of the transitional epithelial lining and the second biopsy B reveals that the covering epithelium is formed of stratified squamous epithelium.

a. Define the pathological changes in biopsies A&B.
b. Explain the pathogenesis of the change in biopsy B.
c. What do you expect to happen to these changes if bilharziasis is treated in this patient?
d. Mention the serious complication that may occur in this case.

2. The consequences of Ca influx into the cell include all of the following except;

a. Disruption of membrane .
b. Nuclear chromatin damage .
c. Increased ATP.
d. Induction of apoptosis.

Answer; (C)

3. You are asked to participate in a research project on myocardial infarctions in a rat model ,Which of the following occurs in ischemic cell injury ?

a. Efflux of K+ and Na+
b. Influx of K+ and Ca++
c. Inflx of K+ and H2O
d. Influx of Na+ and Ca++
e. Influx of Na+ and K+

Answeer;(D)

4. A 30-year old man with AIDS dementia complex develops acute pneumonia and dies of respiratory insufficiency. At autopsy , many central nervous system neurons display hydropic degeneration . This manifestation of sublethal neuronal injury was most likely mediated by impairment of which of the following cellular processes?

a. DNA synthesis.
b. Lipid peroxidation.
c. Mitotic spindle assembly.
d. Plasma membrane sodium transport.
e. Ribosome biosynthesis.

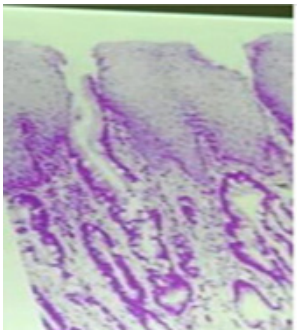
Answer;(D)

5. Match:

1. Hypertensive heart	a) Fragmented nucleus
2. Pyknosis	b) Masses due to membrane damage.
3. Myelin figures	c)Physiologic hypertrophy
4. Reactive O2 species (ROS)	d)Condensed clumped nucleus
5. Poliomyelitis	e)Pathological atrophy
6. Reversible injury	f)Oxidation of lipid, protein and DNA
	g)Cytoplasmic vacuoles
	h)Caspase activation
	i)Pathologic hypertrophy

Answer; (1- i), (2-d), (3-b), (4-f), (5-e), (6-g) .

1. A 32-year old male experiences heartburn with substernal pain from reflux of gastric contents into the lower oesophagus .after many months,the oesophageal epithelium exhibits the microscopic appearance shown here .which alteration has occurred?



a. Squamous metaplasia
b. Mucosal hypertrophy
c. Columnar metaplasia
d. Atrophy of lamina propria
e. Goblet cell hyperplasia

Answer;(C)

2. Which of the following statements best describes the opposite figure;

a. Pressure atrophy of the vertebral bodies and intervertebral discs
b. Pressure atrophy of the intervertebral discs sparing vertebral bodies
c. Pressure atrophy of the vertebral bodies sparing intervertebral discs
d. Pressure without atrophy of the vertebral bodies or intervertebral discs

Answer;(C)

3. Microscopic examination of a liver biopsy from a 23-year old man with viral hepatitis reveals councilman bodies with lymphocytic infiltrate.

a. Describe the councilman body and define the pathologic change that caused it.
b. Explain the mechanism of this pathologic lesion .
c. Explain the other mechanism that can lead to the same pathologic change due to other causes.

4. A well-demarcated lesion with increased cytoplasmic eosinophillia, karyolysis, and intact tissue architecture is characteristic of;

a. Tuberclulosis
b. Acute pancreatitis
c. Myocardial infarction
d. Brain infarction
e. Vasculitis

Answer;(C)

5. An Old atherosclerotic man had a minor trauma of the toes which was followed by blackish discoloration of big toe .Which of the following is responsible for this black colour ;

a. Melanin
b. Hemoglobin
c. Iron sulphide
d. Hemosiderin
e. Lipofuscin

Answer;(C)

6. Enzymatic digestion is the predominant event in which of the following lesions;

a. Splenic infarction
b. Amoebic liver abscess
c. Tuberculosis
d. Traumatic fat necrosis
e. Viral hepatitis

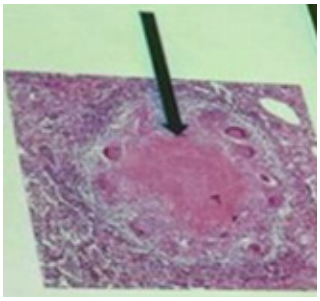
Answer;(B)

7. Match

1. Intact cell membrane with surface budding	A) Cheesy partially liquified necrotic tissue
2. Tuberculosis	B) Predominant protein denaturation
3. Diabetic foot	C) May be mistaken for breast cancer
4. Traumatic fat necrosis	D) immune reactions involving Blood vessels
5. Acute pancreatitis	E) Wet gangrene
6. Renal infarction	F) Apoptosis
	G) Fat necrosis by lipase
	H) Black mummified foot
	I) Hyalinosis of vessels walls

Answers;(1-F), (2-A), (3-E), (4-C), (5-G), (6-B)

8. All the following statements describe the arrowed lesion in the opposite figure except:



a. Lost cellular outlines.
b. Surrounded by granulomatous reaction
c. Complete liquifaction
d. Granular&eosinophilic

Answer;(C)

9. Which of the following statements best describes this lesion:

a. The leg is dry
b. The leg is black
c. The leg is mummified
d. A prominent line of demarcation is present
e. All of the above

Answer;(B)

10. A 50-year old diabetic female died in a car accident , autopsy reveals enlarged pale liver with rounded borders and bulging cut surface.

a. What is the most likely diagnosis of this liver?
b. Describe the microscopic picture of the liver sections prepared and the the special stain recommended
c. Explain the relation between diabetes and the liver condition
d. List 5 other possible underlying causes of the same condition

11. A pathologist notes the following findings after light microscopic examination of a section of liver from a chronic alcoholic , which of the following is an example of a reversible injury?

a. Pyknosis
b. Cytoplasmic vacuoles
c. Rupture of cell membrane
d. Karyolyssis
e. Karyorrhexis

Answer;(B)

12. Russel bodies represent intracellular accumulation of:

a. Proteins in lymphocytes
b. Proteins in macrophages
c. Proteins in plasma cells
d. Glycogen in plasma cells
e. Glycogen in macrophage

Answer ;(C)

13. Stromal fatty infiltration is the stromal deposition of:

a. Cholesterol crystals
b. Phospholipids
c. Free fatty acids
d. Lipoproteins
e. Adipose cells

Answer;(E)

14. Match:

1. Tabby cat heart may be caused by	A) Cholesterolosis
2. PAS stain	B) Mucin
3. Fatty acid is normally esterified to	C) Albumin
4. Increase bile lipids may lead to	D) Anaemia
5. In Russel bodies there is accumulation of	E) Fat
	F) Immunoglobulins
	G) Glycogen
	H) Calcium
	I) Triglycerides

Answers;(1-E) ,(2-G) ,(3-I) ,(4-A), (5-F).

15. Metastatic calcification is most likely to occur in which of the following condition?

a. Tuberculosis of the lung
b. Acute haemorrhagic pancreatitis
c. Aortic stenosis in a 70-year old man
d. Multiple myeloma
e. Haematoma

Answer;(D)

16. Match:

1. Aortic valve stenosis	A)Fragmented nucleus
2. Karyorrhexis	B)Masses due to membrane damage
3. Myelin figures	C)Physiologic hypertrophy
4. Superoxide	D)Condensed clumped nucleus
5. Hemiplegia	E)Increased protein degradation
6. Reversible injury	F)Oxidation of lipids and protein
	G)Cytoplasmic vacuoles
	H)Caspase activation
	I)Increased protein synthesis

Answers;(1-I),(2-A),(3-B),(4-F),(5-E),(6-G).

17. A 40-year old male presents by repeated attacks of renal colic and haematuria(blood in urine), abdominal X-ray reveals bilatral radio-opaque material in the renal pelvis,the patient gave history of excessive milk consumption

a. What is the cause of haematuria in this case?
b. How to confirm your diagnosis by lab investigation?
c. What are the other sites affected?
d. What are possible causes other than milk consumption that may lead to same disorder?

18. Match:

1. Primary haemochromatosis leads to	A) Localized hyperpigmentation
2. Anthracosis is due to	B) Progressive shortening of telomeres.
3. Nevus is described as	C) Lipofuscin deposition
4. Replicative senescence is attributed to	D) Bronze diabetes.
5. Systemic heaosiderosis can occur in	E) Thalassemia major.
6. Heart failure cells are related to	F) Carbon particles deposition
	G)Localised skin Hypopigmentation
	H) Chronic pulmonary venus congestion
	I) Oxygen derived free radical
	J) Right sided heart failure.

Answers;(1-D),(2-F),(3-A),(4-B),(5-E),(6-H).

19. Match:

1. Intact cell membrane with convolutions	A) Chessy partially liquefied necrotic tissue
2. Tuberculosis	B) Predominant protein denaturation.
3. Diabetic foot	C) May be mistaken for breast cancer.
4. Traumatic fat necrosis	D) Immune reactions Involving blood vessels.
5. Acute pancreatitis	E) Wet gangrene
6. Fibrinoid necrosis	F) Apoptosis.
	G) Fat necrosis by lipase
	H) Black mummified foot
	I) Hyalinosis of vessel walls

Answers;(1-F),(2-A),(3-E),(4-C),(5-G),(6-D).

20. Comparison:
1. Hemosiderosis & Hemochromatosis
(types-tissue injury-affected cells by Fe deposition)

2. Distrophic calcification & Metastatic calcification
(Definition-Ca level –Two causes/Examples- Affected sites).

21. This liver condition may be caused by all the following EXCEPT;

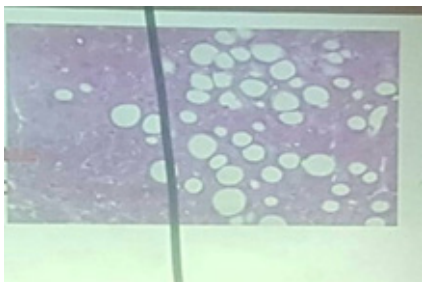
a. Alcoholism
b. Diabetes mellitus
c. Prolonged steroid intake
d. Congestive heart failure
e. Primary hyperparathyroidism

Answer; (E)

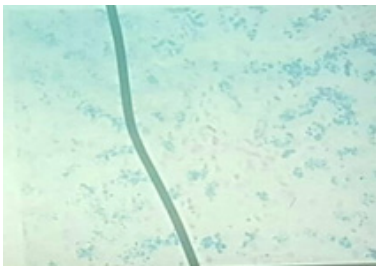
22. To stain these intracellular vacuoles, the tissue must be fixed by ;

a. Alcohol
b. Formaline
c. Saline
d. Drying
e. Freezing

Answer;(A)



23. A 40 years old male presented with ascits and Yellow discoloration of his skin and sclera. physical examination reveals hypatomegaly and jaundice .A prussain blue stain of a liver biopsy is shown in the image . what is the major intracellular deposit in this patient hepatocytes?



a. Bilirubin
b. Haptoglobin
c. Hemoglobin
d. Hemosiderin
e. Transferrin

Answer;(D)

24. The expected serum calcium level in this case :

a. 8 mg/dl
b. 10 mg/dl
c. 12mg/dl
d. 14mg/dl.

Answer;(B)

Pathology Exam 1 (Cell Injury)

1. A 48 year old woman has a malignant lymphoma involving lymph nodes in the paraaortic region. She is treated with a chemotherapeutic agent which results in the loss of individual cytoplasm. By which of the following mechanisms has her neoplasm primarily responded to therapy?

a. Coagulative necrosis
b. Mitochondrial poisoning
c. Acute inflammation
d. Apoptosis

2. A 70 year old female with long history of paraplegia and immobilization in bed. She started to have skin ulcers (bed sores) at the gluteal region. These are examples of:

a. Wet gangrene
b. Dry gangrene
c. Infarction
d. Spasmodic vascular occlusion

3. A 38 year old man has a health screening examination. He has a routine chest x-ray that shows a 2cm nodule in the right lower lobe. The nodule has a focal calcification. A wedge resection of the nodule is done. On microscopic examination the nodules shows caseous necrosis and calcification. Which of the following processes explains the appearance of the calcium deposition?

a. Dystrophic calcification
b. Apoptosis
c. Hypercalcemia
d. Metastatic calcification
e. Excessive ingestion of calcium.

4. An old atherosclerotic man had a minor trauma of the toes which was followed by blackish discoloration of the big toe. Which of the following is responsible for this black colour:

a. Melanin
b. Haemoglobin
c. Iron sulphide
d. Hemosiderin
e. Lipofuscin

5. An 80 year old male died from Alzheimer Ds. At Autopsy his heart was small (250gm) & Dark brown in colour. This brownish coloration is due to:

a. Hemosiderin
b. Melanin
c. Iron sulphide
d. Lipofuscin
e. Lipochrome

6. Russel bodies represents Intracellular accumulation of:

a. Proteins in Lymphocytes
b. Proteins in Macrophages
c. Glycogen in plasma cells
d. Glycogen in Macrophages

7. A well demarcated lesion with increased cytoplasmic eosinophilia, Karyolysis and intact tissue Architecture is characteristic for:

a. T.B
b. Acute pancreatitis
c. Myocardial infarction
d. Brain Infarction
e. Vasculitis

8. Complete:

☆Pyknosis is .....

.....

☆Karyorrhexis is .....

.....

☆Karyolysis is .....

.....

9. A 40 year old male presents by repeated attacks of renal colic & Haematuria (Blood in the urine). Abdominal X-Ray reveals bilateral Radio-opaque material in the renal pelvis the patient gave history of excessive milk consumption

A) What is the cause of Haematuria in this case?
B) How to confirm your diagnosis by lab. Investigations?
C) What are the other sites affected?
D) What are possible cause rather than milk consumption that may lead to same disorder?

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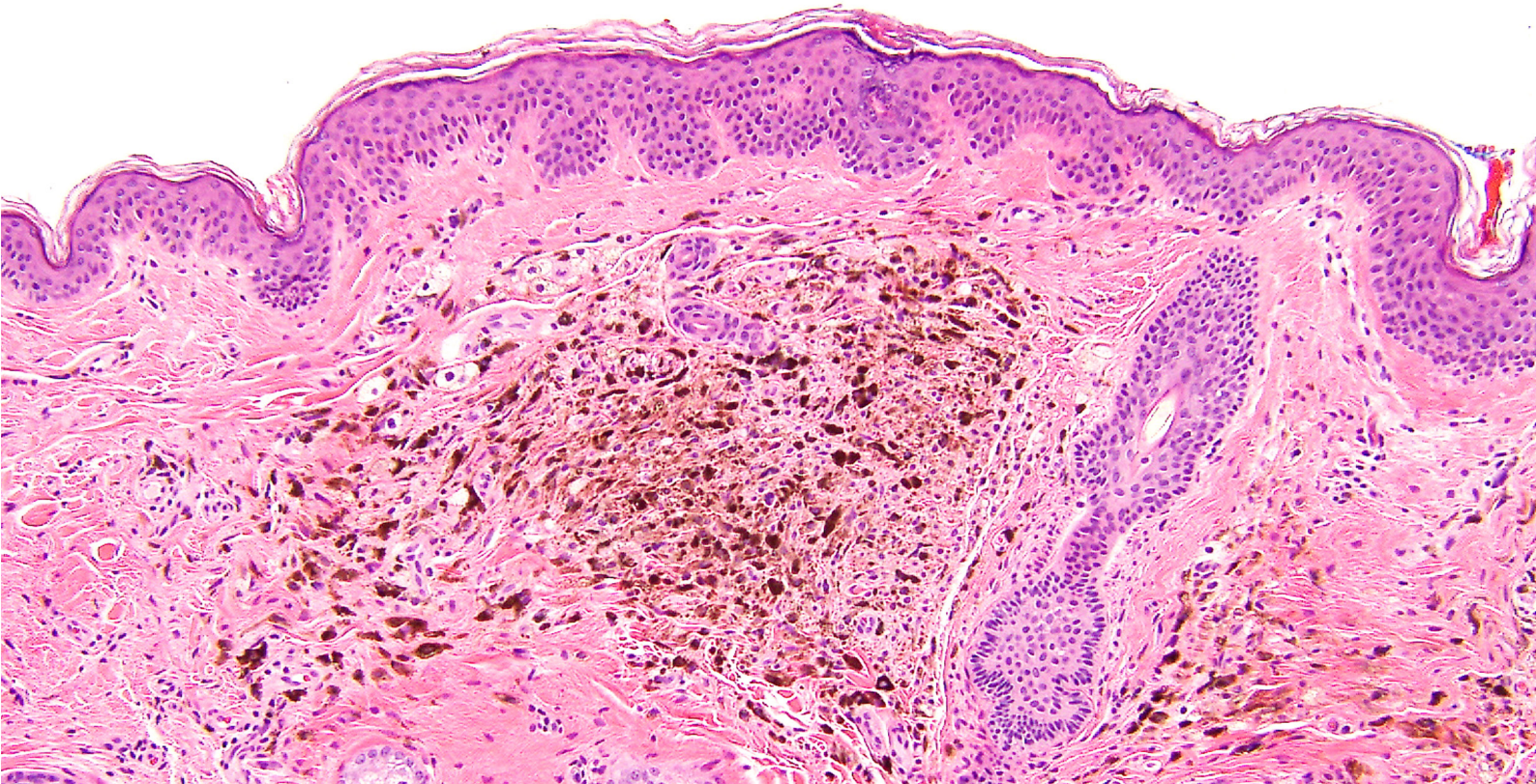
MCQ Notes

Inflammation



Inflammation

1. A 22 year old man develops marked right lower quadrant abdominal pain over the past day .On physical exam, There is rebound tenderness on palpation over the right lower quadrant Laparoscopic surgery is done showing swollen erythematous partly covered by yellow exudate . it is removed . Mic shows infiltration with numerous neutrophils . What of the following best describe the process?

A) Suppurative inflammation
B) serous inflammation
c) Granulomatous inflammation
D) Fibrenous inflammation

2. A 45 year old man has been working hard all day long carrying loads of bricks to build a wall. He takes a NSAID (ibuprofen). Which of the following processes is this drug most likely to diminish in his arm?

a) Pain
B) Necrosis
c) fibrolysis
D) Scar formation

3. These are characters of pyemic abscesses except

a) Multiple
b) Small
c) surrounded by fibrosis
d)nearly same size

4. Which of the following is responsible for fever that develops with the acute inflammation

A) TNF, IL1, Prostaglandins
B) interleukin8
C) Histamine
D) Leukotriens

5. A 15 year old boy complining of marked ill defined erythema and edema in his eyelid. CT showed extension of this process into connective tissue of the orbit . The most diagnosis of this condition is :

A) carbuncle
B) cellulitis
C) abscess
D) furuncle
E) phlegmonous inflammation

6. A25 year old woman complained of a patchy lesion in the skin causing itching. A biopsy revealed endarteritis obliterans , angiogensis , fibrosis with diffuse () by lymphocytes and macrophages . which of the following terms best describe this process?

A) Acute inflammation
B) Granulomatous inflammation
C) Chronic inflammation
D) suppurative inflammation
E) serofibrinous inflammation

7. Bacillary dysentery is usually associated with:

A) Septicemia
B) Acute toxemia
C) chronic toxemia
D) Bacteremia

8. A 5 year old girl had a fever of 3 days duration. On physical examination she has red swollen tonsils with yellow spots . swab from the spots obtained yellowish fluid. What type of cell is most likely numerous in the fluid?

A) Plasma cell
B) Macrophages
C) fibroblasts
D) Dead and living polymorphic

9. In abscess formation, fibrin is responsible for:

A) fistula formation
B) Pus formation
C) increase the site of abscess
D) Localization of the infection

10. Recognition and attachment of leukocytes to most micro organism facilitated by:

A) C3b fragment of complemen
B) soluble bacterial products
C) Bradykinins
D) prostaglandin

11. A 5 year old child who presents with history of recurrent infections she is found to have a genetic lack of integrins, which of the following neutrophilic function is affected :

A) firm adhesion to endothelial cells
B) Neutrophilic migration to the site of infection
C) phagocytosis of bacteria opsonized with igG
D) Recognition of bacteria
E) degradation after phagocytosis of bacteria

12. Which of the following is the most important mediator in the last event in phagocytosis:

A) Reactive nitrogen species
B) Selectins
C) Histamine
D) Prostaglandins

13. A patient presented with pain in his knee and the dr suspected acute inflammation , all of the following are expected to be elevated in the blood except

A) Albumin
B) C reactive protein
C) Amyloid associated protein
D) fibrinogen

14. Chemotaxis is :

A) adhesion of leukocyte to endothelial cells
B) reconition of bacteria by leukocyte
C) Attraction of leukocyte to the site of inflammation
D) Facilitate of attachment of bacteria to leukocyte

15. Which of the following is a potent chemotactic factor:

A) TNF
B) prostaglandin
C) interleukin8
D) complement c3b

16. A patient presented with red swelling on the back of the neck with multiple discharging. Which type of inflammation is this ?

A) Localized suppurative inflammation
B) psoudomembranous inflammation
C) fibrinous inflammation
D) diffuse suppurative inflammation

17. A 56 year old male presented with an ulcer 2 cm on his leg. A biopsy of the ulcer shows thick walled blood vessels with fibrosis and mononuclear cell infiltrates with lymphocytes , macrophage, and plasma cells. The best term for this pathologic process is

A) chronic specific inflammation
B) localized suppurative inflammation
C) acute non suppurative inflammation
D) chronic inflammation
E) fibrinous inflammation

18. General features of chronic inflammation include all except:

A) tissue necrosis
B) chronic inflammatory cells
C) Blood vessels are thin walled ,dilated
D) fibrosis

19. ESR is elevated in:

A) Acute inflammation
B) chronic inflammation
C) Both
D) none of them

20. A blood sample didn`t show bacteria but on performing a blood culture bacteria were detected this is

A) pymeia
B) septicemia
C) Bacteremia

21. Amyloidosis is the one of the complication that can follow

A) Acute toxemia
B) Chronic toxemia
C) septicemia
D) Pyemia

22. A 20 year old male with painful urination , urine cytology revealed many neutrophils,Release of which of the following chemical mediators is most likely to drive neutrophils towards the organism?

A) ROS
B) Complement C5a
C) Histamine
D) Bradykinin

23. Examples of chronic specific inflammation :

A) Bilharziasis
B) TB
C) Chronic osteomylitis
D) A&B

24. A 7 year old girl presented with fever ,chills, severe abdominal pain and dysentery. Endoscopic examination showed that the colon was markedly swollen and red with few areas showing loosely adherent thin grayish white membrane . All of the following complication can occur EXCEPT:

A) Acute Renal failure
B) Acute Heart failure
C) Acute adrenal insufficiency
D) Amyloidosis
E) Acute toxemia

25. A 5 year old child had erythematous skin of the fingers with small blisters after he has touched a pot of boiling water over a stove Which of the following best describe the process?

A) Suppurative inflammation
B) Serous inflammation
C) fibrinous inflammation
D) pseoudomembranous inflammation

26. Which of the following inflammatory cells predominate in Parasitic:

A) Lymphocyte
B) Eosinophils
C) Plasma cell
D) Leukocytes

27. A 26 y old man died from complications of destruction of aortic valve by a large vegetation from which staph aureus was cultured. At autopsy most parenchymtous organs showed multiple minute yellowish tiny nodules surrounded by congestion
The most likely diagnosis is:

A) Bacteremia
B) septicemia
C) Toxemia
D) Pyemia

28. During autopsy, for a 65 y old male multiple tiny yellowish nodules were found surrounded by congestion in the lung, which of the following could be related to these nodules:

A) acute cholecystitis
B) Suppurative appendicitis
C) Suppurative tonsillitis
D) Infected internal piles

29. In the cellular events of the acute inflammatory response, weak transient leukocytic adhesion to the endothelial cells are mediated by:

A) Integrins
B) INF
C) Selectin family
D) IL-1

30. Acute lobar pneumonia begin as:

A) Serous inflammation
B) Fibrinous inflammation
C) Psudomembranous inflammation
D) Allergic inflammation

31. Acute lobar Pneumonia begins as

A) serous inflammation
B) Fibrinous inflammation
C) psedomembranous inflammation
D) Allargic reaction

Case 1

A 4 y old boy presented with fever & difficulty in breathing. On examination, the whole throat was markedly swollen and red with few areas showing loosely adherent, thin, greyish white membrane.

1. What is the possible diagnosis?
2. What is the type of inflammation occurring in this lesion?
3. Mention another disease ccc by this type of inflammation?

Case 2

A diagnosis of meningiococcal meningitis was made in 49 y old female. The condition was overwhelmed and she died. Her autopsy showed peticheal hge all over the body with failure of clotting.

1. What is your diagnosis?
2. What do you expect to see in her heart?
3. What are the other P.M pathologic features?

Essay

1. Enumerate the composition of the yellowish material (pus)
2. List the effects of exotoxin

Give reason

1. Blood vessels are different in acute inflammation than ch. Inflammation
2. ESR is elevated in acute inflammation

Answers

1	A	7	B	13	A	19	C	25	B
2	A	8	D	14	C	20	C	26	B
3	C	9	D	15	C	21	B	27	B
4	A	10	A	16	A	22	B	28	C
5	B	11	A	17	D	23	D	29	C
6	C	12	A	18	C	24	D	30	B

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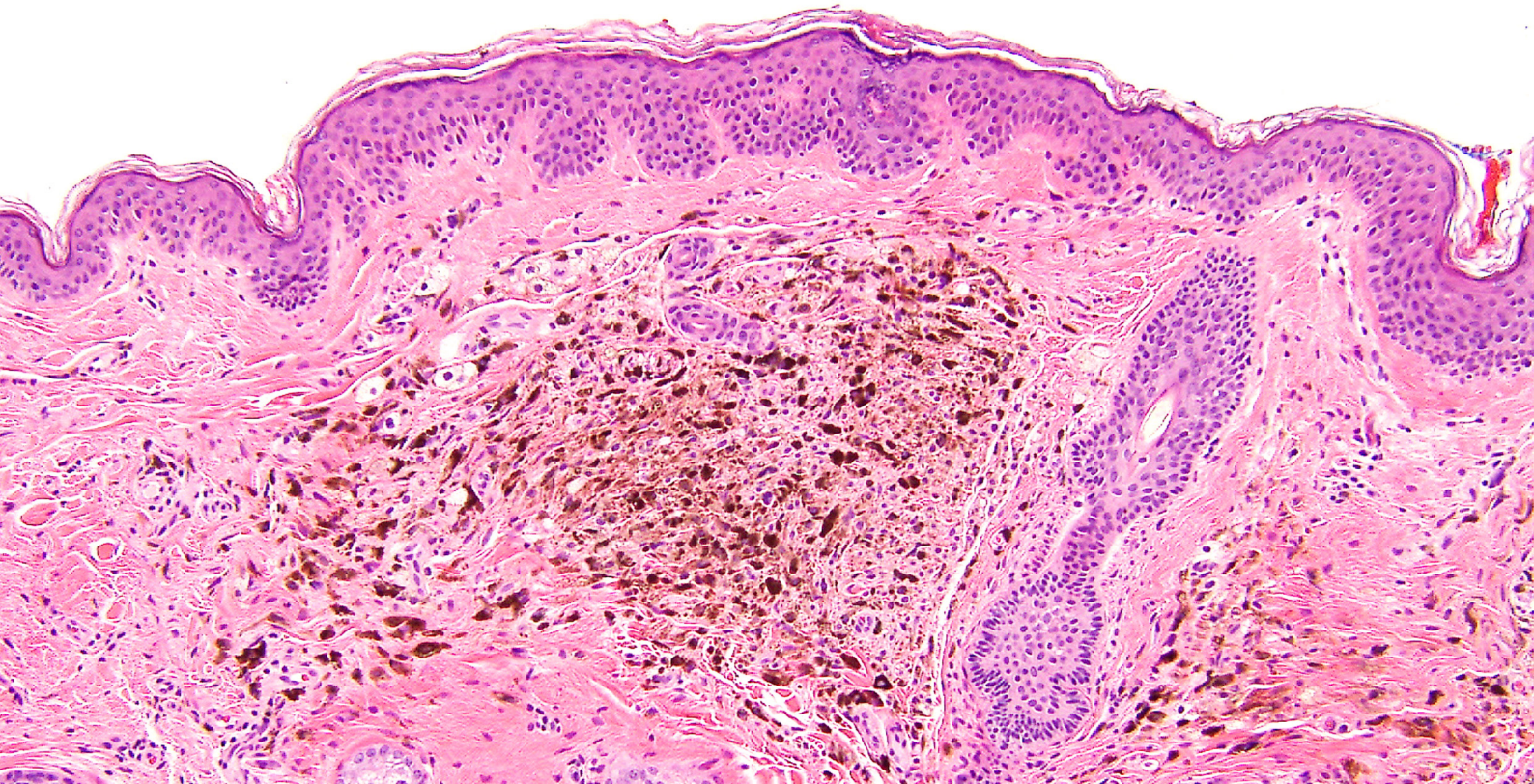
Inflammation & Immunity



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C) chronic toxemia
D) Bacteremia

8. A 5 year old girl had a fever of 3 days duration. On physical examination she has red swollen tonsils with yellow spots . swab from the spots obtained yellowish fluid. What type of cell is most likely numerous in the fluid?

A) Plasma cell
B) Macrophages
C) fibroblasts
D) Dead and living polymorphic

9. In abscess formation, fibrin is responsible for:

A) fistula formation
B) Pus formation
C) increase the site of abscess
D) Localization of the infection

10. Recognition and attachment of leukocytes to most micro organism facilitated by:

A) C3b fragment of complemen
B) soluble bacterial products
C) Bradykinins
D) prostaglandin

11. A 5 year old child who presents with history of recurrent infections she is found to have a genetic lack of integrins, which of the following neutrophilic function is affected :

A) firm adhesion to endothelial cells
B) Neutrophilic migration to the site of infection
C) phagocytosis of bacteria opsonized with igG
D) Recognition of bacteria
E) degradation after phagocytosis of bacteria

12. Which of the following is the most important mediator in the last event in phagocytosis:

A) Reactive nitrogen species
B) Selectins
C) Histamine
D) Prostaglandins

13. A patient presented with pain in his knee and the dr suspected acute inflammation , all of the following are expected to be elevated in the blood except

A) Albumin
B) C reactive protein
C) Amyloid associated protein
D) fibrinogen

14. Chemotaxis is :

A) adhesion of leukocyte to endothelial cells
B) reconition of bacteria by leukocyte
C) Attraction of leukocyte to the site of inflammation
D) Facilitate of attachment of bacteria to leukocyte

15. Which of the following is a potent chemotactic factor:

A) TNF
B) prostaglandin
C) interleukin8
D) complement c3b

16. A patient presented with red swelling on the back of the neck with multiple discharging. Which type of inflammation is this ?

A) Localized suppurative inflammation
B) psoudomembranous inflammation
C) fibrinous inflammation
D) diffuse suppurative inflammation

17. A 56 year old male presented with an ulcer 2 cm on his leg. A biopsy of the ulcer shows thick walled blood vessels with fibrosis and mononuclear cell infiltrates with lymphocytes , macrophage, and plasma cells. The best term for this pathologic process is

A) chronic specific inflammation
B) localized suppurative inflammation
C) acute non suppurative inflammation
D) chronic inflammation
E) fibrinous inflammation

18. General features of chronic inflammation include all except:

A) tissue necrosis
B) chronic inflammatory cells
C) Blood vessels are thin walled ,dilated
D) fibrosis

19. ESR is elevated in:

A) Acute inflammation
B) chronic inflammation
C) Both
D) none of them

20. A blood sample didn`t show bacteria but on performing a blood culture bacteria were detected this is

A) pymeia
B) septicemia
C) Bacteremia

21. Amyloidosis is the one of the complication that can follow

A) Acute toxemia
B) Chronic toxemia
C) septicemia
D) Pyemia

22. A 20 year old male with painful urination , urine cytology revealed many neutrophils,Release of which of the following chemical mediators is most likely to drive neutrophils towards the organism?

A) ROS
B) Complement C5a
C) Histamine
D) Bradykinin

23. Examples of chronic specific inflammation :

A) Bilharziasis
B) TB
C) Chronic osteomylitis
D) A&B

24. A 7 year old girl presented with fever ,chills, severe abdominal pain and dysentery. Endoscopic examination showed that the colon was markedly swollen and red with few areas showing loosely adherent thin grayish white membrane . All of the following complication can occur EXCEPT:

A) Acute Renal failure
B) Acute Heart failure
C) Acute adrenal insufficiency
D) Amyloidosis
E) Acute toxemia

25. A 5 year old child had erythematous skin of the fingers with small blisters after he has touched a pot of boiling water over a stove Which of the following best describe the process?

A) Suppurative inflammation
B) Serous inflammation
C) fibrinous inflammation
D) pseoudomembranous inflammation

26. Which of the following inflammatory cells predominate in Parasitic:

A) Lymphocyte
B) Eosinophils
C) Plasma cell
D) Leukocytes

27. A 26 y old man died from complications of destruction of aortic valve by a large vegetation from which staph aureus was cultured. At autopsy most parenchymtous organs showed multiple minute yellowish tiny nodules surrounded by congestion
The most likely diagnosis is:

A) Bacteremia
B) septicemia
C) Toxemia
D) Pyemia

28. During autopsy, for a 65 y old male multiple tiny yellowish nodules were found surrounded by congestion in the lung, which of the following could be related to these nodules:

A) acute cholecystitis
B) Suppurative appendicitis
C) Suppurative tonsillitis
D) Infected internal piles

29. In the cellular events of the acute inflammatory response, weak transient leukocytic adhesion to the endothelial cells are mediated by:

A) Integrins
B) INF
C) Selectin family
D) IL-1

30. Acute lobar pneumonia begin as:

A) Serous inflammation
B) Fibrinous inflammation
C) Psudomembranous inflammation
D) Allergic inflammation

31. Acute lobar Pneumonia begins as

A) serous inflammation
B) Fibrinous inflammation
C) psedomembranous inflammation
D) Allargic reaction

Case 1

A 4 y old boy presented with fever & difficulty in breathing. On examination, the whole throat was markedly swollen and red with few areas showing loosely adherent, thin, greyish white membrane.

1. What is the possible diagnosis?
2. What is the type of inflammation occurring in this lesion?
3. Mention another disease ccc by this type of inflammation?

Case 2

A diagnosis of meningiococcal meningitis was made in 49 y old female. The condition was overwhelmed and she died. Her autopsy showed peticheal hge all over the body with failure of clotting.

1. What is your diagnosis?
2. What do you expect to see in her heart?
3. What are the other P.M pathologic features?

Essay

1. Enumerate the composition of the yellowish material (pus)
2. List the effects of exotoxin

Give reason

1. Blood vessels are different in acute inflammation than ch. Inflammation
2. ESR is elevated in acute inflammation

Immunity

1-Bence-jones proteins are detected in urine of patient suffering from:

a) chronic renal failure
b) Urinary bladder Bilharziasis
c) Alzheimer's disease
d) Multiple myeloma
e) Renal cell carcinoma

2- Kidney function tests may be affected in all the following diseases except:

a) Rheumatoid arthritis
b) Tuberculosis
c) Systemic lupus erythematosus
d) Viral pneumonia
e) Hodgkin's lymphoma

3- Autopsy of an elderly individual was died in nursing care with no genetic diseases. There is a small amount of amyloid deposition in the heart, amyloid deposition is not seen in other organs. No history of long standing inflammatory diseases. This type of amyloidosis was commonly composed of which of the following proteins:

a) Amyloid associated protein
b) Amyloid light chain protein
c) Beta 2 amyloid protein
d) Beta 2 microglobulin
e) Transthyretin

4- A 24 y old female with old history of pulmonary T.B presented by generalized edema. Urine analysis revealed proteinuria, renal biopsy revealed deposition of pale eosinophilic material within the glomeruli &wall of B.VS. The best stain chosen would be:

a) Ziel-Neelsen stain
b) Masson trichrome
c) Congo red
d) H&E

5- The commonest cause of death from generalized 2ry amyloidosis is:

a) Lt side heart failure
b) Septic shock
c) Cerebral stroke
d) Liver cell failure

6- A biopsy from 80 y old female with progressive symptoms of dementia with deposition of homogenous pink material in the wall of cerebral B.VS, This material was polarizing when stained by Congo red. Which of these substances this material is composed:

a) Collagen
b) Transthyretin
c) Calcium phosphate
d) Aβ amyloid
e) Calcitonin

7- In SLE the pathological change that affect joints is in the form of:

a) ulcerative joint specific inflammation
b) Degenerative changes
c) Acute serous inflammation

8- Sago spleen describes:

a) Congestion within the red pulp
b) Multiple infarcts
c) Amyloidosis deposition in white pulp
d) Amyloidosis deposition in red pulp
e) Hyperplasia of white pulp

9- A 45 y old heavy smoker man presented to emergency department with shortness of breath and hemoptysis. Chest X ray revealed a large left central lung mass. The serum calcium is 13 mg/dl, this metabolic abnormality is likely due to elaboration of which substance:

a) Erythropoietin
b) Antidiuretic hormone
c) Carcinoembryonic antigen
d) Parathyroid related hormone
e) Adrenocorticotropic hormone like substance

10. Match

1-photosensetivity **2- Sago spleen** **3- lardaceous spleen** **4- 2ry amyloidosis is associated with** **5- Bence- jones proteinuria is associated with** **6- libman sacks endocarditis**	a-Amyloidosis in white pulp b- Multiple myeloma c- SLE d- Amyloidosis in red pulp e- prolonged immune stimulation

Case 1

A 20 y old girl presented by chest pain related to breathing and right knee arthralgia. Her family doctor noticed pinkish cheeks with no artificial makeup. She was diagnosed and submitted to regular follow up.

a-What is the most likely diagnosis & how to confirm it?
b- What is the cause of her chest pain?
c- Explain the pathogenesis of her condition
d- What is the aim of follow up in this patient?

Case 2

A 40 y old female presented to outpatient clinic by puffiness of the eyes and lower limp edema. She gave a long last history of rheumatoid arthritis. Gingival biopsy was recommended.

a-What is the aim of this biopsy?
b- What are the stains the pathologist would recommend?
c- Explain the pathogenesis of edema in this patient

1. A male patient 30y old has a gun shot. The complications that can follow his wound healing include all except:

a. Dermoid cyst

b. Keloid

c. Ulceration

d. Pigmentation

2. The inner cell mass of the blastocyst is the source of:

a. Pluripotent stem cell

b. Multipotent stem cell

c. Oligopotent stem cell

d. Unipotent stem cell

e. None of the above

3. Which of the following factors is most likely involved in promoting angiogenesis:

a. Epidermal growth factor

b. Platelet derived growth factor

c. Basic fibroblast growth factor

d. Transforming growth factor beta

e. Macrophage migration inhibitory factor

4. A young man has a deep wound in his hand. The wound healed but the site showed raised ulcerated nodular tissue. Which of the following terms best describe this complication :

a. 2ry union

b. Keloid formation

c. Exuberant granulation tissue

d. Organization

5. A 23 years old women receiving corticosteroids for autoimmune disease has an abscess on her upper arm she done a minor surgery to drain the abscess but the wound healed poorly over the next month which of the following aspects of wound healing is most likely to be deficient in this patient:

a. Re epithelialization.

b. Fibroblast growth factor elaboration.

c. neutrophil infiltration.

d. COLLAGEN DEPOSITION.

6. Examples of labile cells include all the following except :

a. Epidermal cells.

b. Respiratory epithelium.

c. Lymphoid cells.

d. Liver cells.

e. Hematopoietic cells.

7. Tissue composed of fibroblast –macrophage-capillaries and fibroblast is called:

a. Granulation tissue.

b. Granuloma.

c. keloid tissue.

d. Scar tissue.

8. An 18 years old man lacerated his hand and require suture , the suture will be removed one week later .wound healing continued but the site become disfigured by prominent raised nodular scar that developed over the next 2 months .what of the following best describe the process that occurred during that period.

a. organization.

b. Resolution.

c. keloid formation.

d. 2ry union.

9. A 51 years old woman has a surgery to remove ovarian cyst she recovers with no complications most of the tensile strength of her abdomen incision will likely to achieved in :

a. 1 week.

b. 3 months.

c. 1 month.

d. 6 months.

10. The process of regeneration is:

a. Not restore prior function.

b. Should have scar formation.

c. Refers to heal by proliferation by stromal elements.

d. Occurred in tissue composed of labile and stable cells.

11. The maximum strength of a scar versus the wounded skin is

a. 60%

b. 25%

c. 80%

D.10%

12. What are the basic component of extra cellular matrix:

a. cells +fibers +endothelium

b. collagen +macrophage +reticular fibers

c. interstitial matrix + basement membrane

d. Elastin + laminin + platelets

13. Examples of cells having a low level of replication but can undergo rapid division

and response to stimuli:

b. corneal epithelium

c. chondrocyte

d. cardiomyocyte

e. the lens

14. The following lesion heals by 1ry intention:

a. ulceration

b. surgical wound

c. infection

d. abscess

15. Shrinkage of the scar with time reflex:

a. replacing of the collagen by elastin

b. reduction of vascularity

c. action of myofibroblast

d. action of tissue macrophage

16. The following are true for sable cells in cell cycle :

a. They have no capacity to multiply in response to stimuli through out the

adult life.

b. They have left the cycle permanently.

c. They are in the resting phase but can be stimulated to enter the cell cycle.

d. They remain in the cycle from 1ry mitosis to the next.

17. The main feature of healing wound is:

a. lymphocyte accumulation

b. giant cell differentiation

c. granulation tissue formation

d. fibrin deposition

18. Synthesis and degradation of the extracellular matrix accompanies all the following except:

a. morphogenesis

b. wound healing

c. resolution

d. chronic fibrotic process

19. The cell that have the potential to create a complete organism is called:

a. ploripotent cell

b. multipotent cell

c. totipotent cell

d. oligopotent cell

20. Which of the following tissue having permanent cell :

a. pancreatic cell

b. adrenal cortex

c. myocardium

21. A cesarean section is conformed in a 20 year woman to deliver a torn infant and a lower abdominal incision is sutured .the sutures are removed 1 week later .which of the following describe the wound site at the time suture removal:

a. GRANULATION TISSUE IS STILL PRESENT

b. collagen degradation exceeds synthesis

c. wound synthesis is 80% of normal tissue

d. type IV collagen predominate

Give reasons for:

1) After major surgery, normal activities can be resumed after 3 months

2) Wound contraction occurs in wounds healing by 2ry intention

3) Regeneration of the liver occurs after surgical removal of 40-60 % of the liver in living donor transplantation

4) Wound healing in patients on steroids may be complicated

Case 1

A patient presents with a small clean cut wound in his right forearm. His wound was treated properly in a surgery clinic and follow up was done at routine intervals. Initially, the wound is filled with granulation tissue, which is composed of proliferating fibroblasts and proliferating blood vessels (angiogenesis)

1) What is the most important growth factors involved in angiogenesis?

2) Mention the gross features of granulation tissue?

3) What do u call this type of healing and what is its fate?

4) What are the factors that delay wound healing & those that accelerate it?

Case 2

A 40 y old man incurs a burn injury to his hand while working. Over the next 2 months, the burned skin heals with nodule formation. Excision of the nodule and M/P examination revealed fibrous tissue over growth

1) What is the complication that developed upon healing in this case?

2) Enumerate other complications of wound healing

3) What does the surgeon should tell the patient about this complication before the patient leaves?

Case 3

A girl was playing with her friends in the garden. She fell and injured her face. Rearrange from your knowledge what is going on at this site of injury

1-Which of the following can cause generalized pitting edema :

a) Infiltration of superficial lymphatics by cancer cells in cancer breast

b) Liver disease

c) Lymph node resection in breast cancer

d) Elephantiasis

e) Deep venous thrombosis

2-State true or false and state the correction if failed:

a) Severe generalized edema in subcutaneous tissue, viscera & serous cavities is called non pitting edema

b) IN RHF salt & water retention occurs dt renal vascular congestion.

c) Hypoproteinaemia is not the cause of cardiac edema

d) Phlebothrombosis is an arterial thrombus on top of inflammation of the vessel wall

3-In which of the following organs is an arterial thrombosis LEAST likely to produce an infarct?

a) Brain

b) Lung

c) Kidney

d) Heart

e) Spleen

4-**A 86-year-old woman suffers from congestive heart failure & progressive breathing problem, after her death, autopsy reveals enlarged heavy firm lungs with deep red discoloration numerous brown pigmented laden cells are seen within the alveoli in sections prepared from the lung what is the nature of the pigment seen in these cells:**

a) Anthracosis

b) Copper

c) Melanin

d) Lipofuscin

e) Hemosiderin

5-A 70 year old male who has been bed ridden for 3 weeks, Angiogram reveals intra venous mass adherent to vessel wall, Two days later the patient presents with severe chest pain and dies, which of the following has most likely happened ?

a) Severe pulmonary congestion

b) Pulmonary edema

c) Migratory thrombophlebitis

d) Severe thrombocytopenia

e) Acute right side failure

6-A 50 year old male develop an arterial thrombus, one of the following is true :

a) The main effect is congestion distal to obstruction

b) The thrombus is dark red colour

c) Endothelial injury may be involved in its formation

d) It's known as Phlebothrombosis

7-A 68 year old male diagnosed to have pancreatic carcinoma had recurrent attacks of multiple venous thrombosis in the last three months at changing sites, what is the most likely diagnosis?

a) Systemic pyemia

b) Trousseau's syndrome

c) Decompression thickness

d) Ecchymosis

This is explained dt :

a) Multiple vascular emboli

b) Recumbancy

c) Compression of vessels by the tumour

d) Production of procoagulants by the tumour

8-Nephrotic edema is primarily due to:

a) Increased hydrostatic pressure

b) Decreased protein synthesis

c) Decreased plasma oncotic pressure

d) Acute inflammation

9-A women with a known blood disease fell and stroke her leg , she presented with a red swollen area 3cms in diameter , which of the following term best describes this area:

1. Purpura

2. Melena

3. Petechial

4. Hematoma

5. Ecchymosis

10-A 67 year old female underwent mastectomy and axillary clearance of the breast carcinoma postoperatively she developed marked swelling of her left arm which was not hot, red or tender On pressure no pitting was found, the most likely cause is :

1. Inflammation of SC tissue
2. Phlebothrombosis of arm veins
3. Malnutrition dt loss of appetite
4. Lymphatic obstruction
5. Salt and water retention

11- A 60 year old female presented with gastrointestinal distress on examination she was found to have congested pulsating neck veins , enlarged tender liver and generalized edema most prominent her lower limbs , which of the following is most likely to be the primary cause of these symptoms :

1. Increased capillary hydrostatic pressure
2. Loss of protein in urine
3. Lymphatic fibrosis
4. Decreased plasma oncotic pressure
5. Acute inflammation

12-Infarcts tend to pale when they occur in :

1. Intestine
2. Spleen
3. Lung of a patient with left side heart failure
4. Torsion testis

13-Which of the following is a cause of localized edema:

1. Severe malnutrition
2. Nephrotic syndrome
3. Right ventricular failure
4. Abscess

14-Which of the following cause generalized pitting edema:

1. Infiltration on superficial lymphatics by cancer cells in cancer breast
2. Liver disease
3. Lymph node resection in breast cancer
4. Elephantiasis
5. Deep venous thrombosis

15-During surgical dissection of the mesentery a solid mass was found inside a blood vessel Microscopically it was found to be adherent to vessel wall with pale strands alternating with dark red strains, which of the following is correct:

1. The pale strands are formed of white blood cells

2. It is formed of RBCs and fibrin

3. It is called a vegetation

4. It was formed inside the body

16-In the right side heart failure all the following can be encountered except;

a- distended neck vein

b- nutmeg appearance

c- LL oedema

d- git distress

e- intra alveolar heart failure cells

17-a 55 years old previously healthy woman is hospitalized for pneumonia. on the 10th hospital day she is found to have swelling and tenderness of her right leg, which apparently had developed over the past 48hr. raising the leg elicits pain, an ultrasound examination reveal findings suggestive of femoral vein thrombosis, which of the following conditions is most likely to have contributed the most to the appearance of these:

a- trousseau syndrome

b- protein c deficiency

c- prolonged immobilization

d- pregnancy

e- chronic alcoholism

f- hypertension

18-A 50 years old woman presents with upper abdominal pain radiating to the back. Investigation reveals a mass of head of pancreas, later she developed recurrent attacks of venous thrombosis at changing sites this explained by:

a- multiple vascular tumor emboli

b- coagulant factor secreted by tumour

c- compression of the vessels by tumour mass

d- prolonged recumbency in the bed

19-Line of Zahn are best seen in:

a- post mortem clot

b- platet thrombus

c- mixed thrombus

d- dry gangrene

e- moist gangrene

20-A 67 years old man presents with sudden left leg pain ,absence of pulse .and a cold limb his past medical history is about artery disease and a small aortic aneurism ;

a- acute myocardial infarction

b- arterial thromboembolism

c- cardiogenic shock

d- deep venous thrombosim

21-on a section of an organ from a 60 years old man at the time of autopsy ,a focal edge shaped area that is firm is accompanied by extensive hemorrhage .giving it a red appearance ,the lesion has a base on the surface of the organ what most likely to occur:

a- lung with pulmonary thromboembolism

b- heart with coronary thrombosis

c- liver with hypovolemic shock

d- spleen with embolized mural thrombus

e- brain with cerebral arterial embolism

22-a 68 years old woman suffers from congestive heart failure and progressive breathing problems after death autopsy reveals enlarged heavy firm lungs with deep red discoloration. numrrous brown pigment –laden cells are seen in alveoli ,what is the nature of this pigment:

a- Anthracosis

b- copper

c- melanin

d- lipofuscin

e- hemosiderin

23-Which of the following is not associated with the thrombosis:

a- activation of the coagulation mechanism

b- endothelial damage

c- formation of platelet aggregation

d- thrombocytopenia

e- vascular stasis

24-an old woman underwent mastectomy and axillary lymph node clearance for a left breast carcinoma ,post operatively she developed marked swelling on her left arm which was not tender painful or red. the possible diagnosis is:

a- inflammation of SC tissue

b- Phlebothrombosis of arm vein

c- lymphedema

d- congestive heart failure

25-a 78 years old man had s neck femur he was hospitalized and undergo hip replacement .2 weeks later his legs were swollen ,painful on movement, which of the following is complication is most likely to occur :

a-gangrenous necrosis of the foot

b- pulmonary thromboembolism

c- hematoma of the thigh

d- fat embolism

e- cerebral hemorrhage

26-a 45 years old dentist works in a clinic noticed a t the end of the day that her legs and feets are swollen although there was no swelling at the end of the beginning of the day there is no pain or redness. Liver and renal function were normal which of the following mechanism best explain the case;

a- inflammation of subcutaneous tissue

b- increased hydrostatic pressure

c- lymphatic obstruction

d- hypoproteinemia

27-a 26 years old man died from complication of destruction of the aortic valve by large irregular vegetation from which staph. Aureus was cultured .at autopsy the spleen on sectioning grossly reveals the presence of tan to white wedged shaped 1.5 *3 cm lesion with base on the capsule ,the splenic finding most likely to result from which of the following;

a- septic infarction

b- abscess formation

c- metaplasia

d- caseous necrosis

e- liquefactive necrosis

7. A 20 year old female has an ovarian mass removed, the mass is 10 cm in diameter and cystic on cut section, the cavity was filled with hair and sebaceous like material, histologic examination revealed a cyst wall lined by stratified squamous epithelium and showed cartilage, fat, respiratory epithelium and salivary gland tissue, what is the diagnosis of such tumour?

1) Teratomas
2) Chondroma
3) Hamartoma
4) Choristoma
5) Blastoma

8. A 68 year old man has a long history of prostate cancer that was metastatic at the time of diagnosis over the past 2 months, he has had significant weight loss, loss of appetite and loss of energy his current spectrum of conditions can be attributed to which of the following?

1) Fibroblast growth factor
2) Tumour necrosis factor alpha
3) Platelet derived growth factor
4) Vascular endothelial growth factor
5) Interleukin-2

9. A 25 year old female was diagnosed as having an invasive duct carcinoma the patient's older sister was recently diagnosed with ovarian cancer and 3 years ago her maternal aunt had performed mastectomy for a diagnosis of invasive duct carcinoma which of the following mutated genes would most likely to be present in this family?

1) BRCA-1
2) EGFR-1
3) Rb
4) BCL2
5) RAS

10. All are true for gatekeeper genes except:

1) Maintain the integrity of the genome by repairing DNA damage
2) Inhibit the proliferation or promote the death of cells with damaged DNA
3) Are exemplified by the p53 gene
4) Are exemplified by the BCL-2 gene

11. A 80 year old male had been diagnosed as having prostatic adenocarcinoma histologic grading o the patient's carcinoma is based primarily on which of the following criteria?

1) Lung metastasis
2) Invasion of prostatic capsule
3) Extent of original lymph nodes involvement by malignant glands
4) Resemblance to normal prostatic tissue
5) Volume of prostatic gland involvement by the tumour

1. A 65 year old female had undergone total abdominal hysterectomy for a diagnosis of a uterine leiomyosarcoma, one year later a chest x ray revealed a 4cm nodule in her right lower lung, ultrasound, guided biopsy and histopathologic examination revealed a poorly differentiated sarcoma the patient's medical history indicates that she had smoked cigarettes most of her adult life, which of the following mechanisms best explains these findings?

a) Continued cigarettes smoking by the patient.
b) Development of a second primary neoplasm.
c) Inheritance of a defective RB gene.
d) Metastasis from an aggressive tumour sub-clone.

2. Carcinoma in situ is:

a) Carcinoma of an unknown origin.
b) Occult carcinoma.
c) Carcinoma with bad prognosis.
d) Non-invasive carcinoma.
e) Carcinoma occurs in certain sites

3. Which of the following carcinogenic agents is the most important in skin cancer?

1) Aflatoxin
2) Vinyl chloride
3) Sunlight
4) Asbestos

4. Krukenberg tumour is:

1) Bilateral metastasis to the ovary from carcinoma of the uterus through direct spread.
2) Bilateral metastasis to the ovary from carcinoma of the colon through lymphatic spread.
3) Bilateral metastasis to the breast from carcinoma of the ovary through lymphatic spread.
4) Bilateral metastasis to the breast from carcinoma of the ovary through direct spread.

5. Locally aggressive tumours are:

1) Malignant tumours that invade locally & very rarely can metastasis.
2) Locally benign tumours showing cytological criteria of malignancy.
3) Malignant tumours that spread only to v.near lymph nodes & are small in size.
4) Mixed tumours with both epithelial and mesenchymal cell of origin

6. The term desmoplasia refers to:

1) An irregular accumulation of blood vessels.
2) Maturation and spatial arrangement of cells.
3) Metastatic involvement of surrounding tissue.
4) Normal tissue misplaced within another organ.
5) Proliferation of non-neoplastic fibrous connective tissue.

37. Locally aggressive tumors are:
a- Benign tumors showing some cytological criteria of malignancy but not all of them
b- Mixed tumors with both epithelial & mesenchymal tumors that are small in size
c- Malignant tumors that are small in size & spread only to few LNS
d- Aggressive tumors that invade locally & very rarely can metastasize

38. A 20 y old female has a cystic ovarian mass 10 cm in diameter. The cavity of the mass is filled with hair and sebaceous like material, Histologic exam. Revealed a cyst wall lined by stratified squamous epithelium and showed cartilage, fat, respiratory epithelium and salivary gland tissue. What is the diagnosis of such tumor?
a- Teratoma
b- Chondroma
c- Hamartoma
d- Choristoma
e- Blastoma

39. Endometrial adenocarcinoma can be preceded by which of the following changes in endometrial tissue?
a- Atrophy
b- Hypertrophy
c- Metaplasia
d- Hyperplasia

40. Malignant tumor of mesenchymal tissue is called:
a- Adenocarcinoma
b- Sarcoma
c- Mucoid carcinoma
d- Squamous cell carcinoma

41. The features that best distinguishes a neoplasm from a granuloma is the neoplasma's:
a- Recurrence following excision
b- Rapid increase in size
c- Sensitivity to radiation or chemotherapy
d- Uncontrolled (autonomous) growth
e- Necrosis

42. Compared to a normal adult somatic cells, cancer cells would most likely show high level ofexpression of which of the following proteins?
a- Desmin
b- Dystrophin
c- Cytochrome C
d- P selectin
e- Telomerase

43. A 60 y old man with hilar lung mass that was diagnosed as having squamous cell carcinoma of the main bronchus by biopsy and pathologic exam. If staging of this tumor following resection and further investigation was denoted as T1 N1 M1. Which of the following findings is most likely present in this man?

a- Brain metastases
b- Infiltration of chest wall
c- Elevation of corticotropin
d- poorly differentiated tumor cells
e- Extensive lymph nodal infiltration

44. Which of the following statements regarding teratomas is incorrect?

a- they can arise in the ovary
b- They arise from totipotent germ cells
c- A sarcomatous element is usually present
d- Tissue resembling those from an embryo can be seen
e- They can arise from testis

45. Which of the following carcinogenic agent is the most important in skin cancer?

a- Aflatoxin
b- Vinyl chloride
c- Sunlight
d- Asbestos

46. Transcoelomic spread occurs in carcinoma of:

a- Breast
b- Tongue
c- Skin
d- Stomach
e- None of above

47. A sequence of epithelial metaplasia to dysplasia to carcinoma in situ would be most ccc for:

a- Human papilloma virus infection of uterine cervix
b- Retroviral infection of T- lymphocytes
c- Hepatitis B infection of liver
d- Epstein-Bar viral infection of B-lymphocytes
e- e-Influenza virus infection of lung

48. Malignant epithelial cells would most likely show decreased expression of which of the following?

a- TNF
b- B- E-cadherin
c- VEGF
d- D- Telomerase
e- Protease

25. Which of the following changes in cell behavior is the first step in the process of metastases?

a- stimulation of angiogenesis
b- circulating in blood or lymph vessels
c- exit from circulation into a new tissue
d- penetration of vascular or lymphatic tissue
e- invasion of underlining BM

26. A30 y old male had been diagnosed as having prostatic adenocarcinoma, Histologic grading of the patient's carcinoma is based primarily on which of the following criteria?

a- Lung metastases
b- Invasion of prostatic capsule
c- Extent of lymph node involvement by malignant glands
d- Resemblance to normal prostatic tissue
e- Volume of prostatic gland involvement by the tumor

27. A sarcoma is most likely to be diagnosed in which of the following patient's:

a- A 35 y old female with a left breast mass and enlarged axillary L.N
b- A 55 y old female with massive ascites and multiple peritoneal metastases
c- A 25 y old male with an enlarged left testis
d- A15 y old male with a mass in the left femur and lung metastases
e- A 5 y old male with a right renal mass

28. The term desmoplasia refers to:

a- An irregular accumulation of blood vessels
b- Maturation and spatial arrangement of cells
c- Metastases involvement of surrounding tissue
d- Normal tissue misplaced within another organ
e- Proliferation of new

29. One of the most common genetic alterations found in human carcinomas that leads to loss of tumor suppression is:

a- K-ras
b- P53
c- C-MYC
d- 9:22 translocation
e- Bcl-2

30. A biopsy from the cervix showing dysplastic squamous epithelial cells occupying the entire thichness of epithelium with no evidence of epithelial maturation and intact BM is called as:

a- Atypical hyperplasia
b- Mild to moderate dysplasia
c- Moderate to severe dysplasia
d- Carcinoma insitu

12. A local malignant tumour includes:

1) Bronchial adenoma.
2) Rodent ulcer
3) Desmoid tumour
4) All of the above

13. A 60 year old man complained of cough with bloody mucus chest CT scan revealed a hilar lung mass that was diagnosed as having squamous cell carcinoma of the main bronchus by biopsy and pathologic examination if staging of this tumour following resection and further investigations was denoted as T1 N1 M1 which of the following findings is most likely present in this man?

1) Poorly differentiated tumour cells
2) Brain metastasis
3) Elevation of corticotrophin
4) Metastatic infiltration of lymph node only

14. All this benign tumours are capsulated except:

1) Lipoma
2) Chondroma
3) Angioma
4) Fibroadenoma

15. Viruses that have been associated with malignancy include all of the following except:

1) Rhinovirus
2) Hepatitis B virus
3) Human immunodeficiency
4) Human T-lymphocyte virus type 1

16. The following are examples of hereditary cancer except:

1) Breast carcinoma
2) Colon carcinoma
3) Wilm's tumour
4) Osteogenic carcinoma
5) Retinoblastoma

17. 53 y old female had undergone total abdominal hysterectomy for uterine leiomyosarcoma. One year later a chest X-ray revealed a 4 cm nodule in her right lung. Ultrasound guided biopsy and histopathological exam. Revealed a poorly differentiated sarcoma. The patient's medical history indicates she had smoked cigarettes most of her adult life. Which of the following mechanisms best explain these findings?

a- Continued cigarette smoking by the patient
b- Development of second primary neoplasm
c- Inheritance of a defective RB gene
d- Metastases from an aggressive tumor sub-clone

31. The following are examples of hereditary cancer except:

a- Breast carcinoma
b- Colon carcinoma
c- Ovarian carcinoma
d- Osteogenic carcinoma
e- Retinoblastoma

32. Viruses that have been associated with malignancy include all of the following except:

a- Rhinovirus
b- Hepatitis B virus
c- Human immunodeficiency
d- Human papilloma virus
e- Human T-lymphocyte virus, type 1

33. A benign tumor arising from skeletal muscle cell is:

a- Rhabdomyoma
b- Chondroma
c- Fibroma
d- Leiomyoma
e- Lipoma

34. Carcinoma in situ is:

a- Carcinoma of unknown origin
b- Occult carcinoma
c- Carcinoma with bad prognosis
d- Noninvasive carcinoma
e- Carcinoma Occurs in certain sites

35. All are true for gatekeeper genes except:

a-Maintain the integrity by repairing DNA damage
b- Inhibit the proliferation, or promote the death of cells with damaged DNA
c- Are exemplified by p53 gene
d- Are exemplified by the BCL-2 gene

36. Which of the following describes the histologic features of Choriostoma?

a- Benign neoplasm Of epithelial origin
b- Ectopic island of normal tissue
c- Benign neoplasm formed of benign tissue of all 3 germ lines
d- Disorganized normal tissue that form a localized mass
e- Aggregate of epithelioid cells and chronic inflammatory cells

18. A 67 y old female was diagnosed as having papillary serous cystadenoma of the ovary. She was dead and autopsy revealed multiple scattered tiny masses on the peritoneal surface with presence of marked ascites. Which of the following routes of metastases accounts for the autopsy findings?

a- Direct extension of the tumor
b- Heamatogenous spread
c- Lymphatic spread
d- Seeding of body cavity

19. Anaplastic tumor is a tumor in which the tissue is:

a- Well differentiated
b- Moderately differentiated
c- Poorly differentiated
d- Mature tissue

20. The neoplastic cells most likely acquire a set of mutations that cause which of the following changes in cell behavior?

a- Decreased cellular motility
b- Increased cell-cell adhesion
c- Increased susceptibility to apoptosis
d- Loss of cell cycle checkpoint control

21. Benign tumors that can turn malignant are:

a- Seminoma & lymphoma
b- Melanoma & hepatoma
c- Hemangioma & leiomyoma
d- Colonic adenoma & Neurofibroma
e- Liver hemangioma & liver cell adenoma

22. All these benign tumors are capsulated except:

a- lipoma
b- Chondroma
c- Angioma
d- fibroadenoma

23. A locally malignant tumor includes:

a- bronchial adenoma
b- rodent ulcer
c- Desmoid tumor
d- all of the above

24. During first 2 decades of life, the most commonly encountered benign neoplasm is:

a- haemangioma
b- Meningioma
c- Wilm's tumor
d- lymphoma
e- glioma

Complete these statements by an appropriate word or words:

1- Asbestos can predispose to .....
2- Contraceptive pills may predispose to .....
3- Anabolic steroids may predispose to .....
4- In xeroderma pigmentaosum there is defect in ..... Gene
5- The most common cancers in men are ..... & ..... While in women are ..... & .....
6- Factors that predispose to occurrence of cancers include .....& .....& ..... &age & sex
7- Benign tumors that predispose to cancers are ..... & .....
8- Some long standing inflammatory & hyperplastic conditions that may predispose to cancers include ..... of colon, ...of skin, ...of liver,.....of stomach,.....esophagus,..... of oral mucosa
9- An example of intraepithelial spread is .....& ..... & .....
10- A malignant tumor that rarely metastasize is .....
11- A benign tumor that shows rapidly growth pattern is .....
12- Hamartomas are defined as .....
13- Choriostomas are defined as .....
14-Proto oncogenes can be transferred to oncogenes by .....&..... &.....

Explain:

1- Organ tropism
2- Teratomas may show bone tissue, lung tissue, as well as epidermal tissue
3- A pathologist can give a full assessment of tumor grade but participates only partially in assessment of tumor stage
4- Generally incidence of cancer increase by age
5- A patient with granulosa cell tumor of the ovary may represent later on in her life with endometrial carcinoma
6- Infection by certain types of HPV has an increased risk of developing squamous cell carcinoma of the cervix

Give reason:

1-Liver & lung are common for metastatic deposits
2- Metastatic lung carcinoma occurs most common in adrenals, liver and brain
3- Frequent involvement of vertebral column in carcinoma of thyroid & prostate

Case 1

A 55 y old female presented with upper abdominal pain radiating to the back. Investigations revealed pancreatic mass. Later she developed recurrent attacks of multiple venous thrombosis at changing sites.

1-Explain
2- What is the clinical significance of this pathological entity?

Case 2

A 14 y old girl has accidently discovered a 0.3 cm reddish slightly raised nodule in her skin of the upper chest. She states that this lesion has been present for years with no changes in site or color.

1-What is ur diagnosis?
2- What is the nature of this lesion?
3- What is the D.D?

Case 3

A 40 y old man presented with low grade fever with mild vague abdominal pain. He took a course of antibiotic for suspicion of typhoid fever, but with no improvement. Abdominal ultrasound was done and revealed enlarged para aortic LNS. He was further reexamined and multiple enlarged axillary LNS were revealed. Excisional biopsy was done for the axillary LNS which proved to be Hodgkin's lymphoma.

Case 4

A male patient presented with hemoptysis. Chest X ray revealed a large hilar mass. Lab investigations showed elevated level of calcium. Bronchoscopy and incisional biopsy was done. Pathology lab reported it as moderately differentiated SCC. Resection of the affected lobe was done.

What was the cause of elevated level of calcium?

Case 5

A 60 y old male presented with recurrent migratory thrombophlebitis (??)

A clever physician asked him to do both chest and abdominal ultrasound and CT scan. (Why?) Or what did he suspect the patient might be suffering from?