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Q:1:- What are the circulating cells in acute inflamation? Also write the characteristics of Acute inflamation.

Ans:- Acute inflamation:-

Acute inflamation is the immediate and early response to injury. A critical function of this response is to deliver leukocytes to the site of injury, where they help clear invading infectious agents, as well as degrade necrotic tissue. Acute inflamation may be regarded as the first line of defense against injury.

Characteristics of acute inflamation:-

→ Relatively short duration
→ Lasting from a few minutes up to a few days.
→ Formation of inflammatory exudate
→ Predominantly neutrophil leukocyte accumulation.

circulating cells:-

→ Neutrophils
→ Monocytes
→ Eosinophilic
→ Lymphocytes
→ Basophilic
→ Platelets

Q.2:- Note on infarction:

Ans. An infarct is an area of ischemic necrosis caused by occlusion of either the arterial supply or the venous drainage or both in a particular area.
Tissue infarction is common and extremely important cause of clinical illness. Myocardial and cerebral infarctions are the cause of more than half of all deaths. Ischemic necrosis of the extremities (gangrene) is a serious problem in the diabetic population.

Types of infarction:-

TWO types

(i) White or pale infarct
(ii) Red or hemorrhagic infarct

(ii) White or pale infarct:-

This type of infarct usually occurs.

* in solid organs
e.g. heart, spleen, kidney
* due to arterial occlusion

(iii) Red infarct:-

This type of infarct usually occurs.

* In loose tissue (e.g. lung) that allows blood to collect in the infarcted zone.
* due to venous occlusion or both arterial and venous occlusion.
* In tissues with double circulation e.g. lung and small intestine in which blood flow continues to the infarcted area from unobstructed vessel giving the red or hemorrhagic appearance (but this amount is not sufficient to rescue the ischemic tissue).
* When blood flow is re-established to a site of previous arterial occlusion and necrosis (by drugs or surgical procedure).

Note on Mast cells:

A mast cell (also known as a mastocyte or a labrocyte) is a migrant cell of connective tissue that contains many granules rich in histamine and heparin.

* The mast cells degranulate release histamine
* Found in both acute and chronic inflamation.

Q.3:- Proliferative capacity. Explain characteristics of Benign tumor?

Ans. Proliferative capacity:-

(i) Labile cells:-

continuously dividing cells these are proleferative through out life and replacing those cells that are continuously dying.

Example:

Squamous stratified epithelium cells of skin, oral cavity, vagina and and cervix.

(ii) Stable cells:-

This cells have ability to regenerate but in normal conditions don't activly replicate. However they can undergo rapid divisions in response to a variety of stimulus or activation stimulus.

Example:-
paranchymal cells of liver, kidney and pancreas.
* Mesenchymal cells (e.g) smooth muscle, cartilage, connective tissues, fibroblasts and vascular endothelial cells.

(iii) Permanent cells:-
These cells are capable of divisions and Regeneration. If they are destroyed, the loss is permanent and repair occurs only by the proliferation of connective tissues (scar formation).

Example:
→ Nerve cells (neuron)
→ cardiac muscle
→ skeletal "
→ Regeneration and repair also depends on extent of injury and also on inflamation.

Steps of repair:-

* Formation of translation tissue
* Wound contraction

Characteristics of Benign tumor:-

Benign tumor:-
It is the tumor with relatively innocent. In general, these are designated by attaching the suffix "oma" to the cell of origin.

characteristics such as:-

* It will remain localized.
* It cannot spread to other site.
* It is amenable to local surgical removal.
* The patients survives
* well differentiated
* No anaplasia
* No metastasis
* Usually slow except leiomyoma of uterus, which rapidly grows during pregnancy.
* Degeneration, necrosis ulceration, hemorrhage less frequent.
* Do not endanger the life unless a vital organ is involved.
* Easily local removal - no recurrence.

Q.4:- What is hypovolumic shock? Explain its condition.

Ans: Hypovolemic shock:

Hypovolemic shock results from decreased blood volume due to

→ Hemorrhage (external or internal)
→ Excessive fluid loss as occurs in diarrhea, vomiting, burns, dehydration or excessive sweating.
→ Blood pressure decreases, thus blood flow is reduced to cell, tissue and organs.

Q.5:-

Ans

Condition

Hemorrhagic	Non-Hemorrhagic
→ GI bleed	→ vomiting
→ Trauma	→ Diarrhea
→ Massive hemoptysis	→ Bowel obstruction, pancreatitis
→ AAA rupture	→ Burns
→ Ectopic pregnancy, post-partum bleeding	→ Environmental dehydration

Q.5:- What is Edema? Explain its types and also write about the classification of thrombosis.

Ans. **Edema:-**

Accumulation of excess fluid in the interstitial tissue spaces or body cavities is called edema. Depending on the site collection of fluid in the different parts of the body cavities is designed as:

* **Hydrothorax:** collection of fluid in pleural cavity.
* **Hydropericardium:** collection of fluid in peritoneal sac.
* **Hydroperitonium:** collection of fluid in peritoneal cavity.
* **Anasarca:** severe and generalized edema producing marked swelling of all tissues and organs in the body particularly in the subcutaneous tissue.

Types of Edema:

(i) Localized Edema
(ii) Generalized Edema

(i) **Localized Edema:**

causes of localized edema are

→ Increased vascular permeability due to inflammatory or allergic reactions.
→ Impaired venous drainage due to thrombosis or compression of veins by external pressure (due to tumor, surgical dressing).
→ obstruction of lymphatics by inflamation of radiation.

(ii) **Generalized Edema:-**

Generalized edema represents the effect of increased total body sodium and water as a result of renal retention, when the glomerular filtration rate is decreased or when the secretion of aldosterone is increased. (However primary hyperaldosteronism called conn's syndrome does not cause edema.

Causes:-

* cardiac failure * constrictive pericarditis
* Liver cirrhosis * Glucocorticoid therapy
* Toxemia of pregnancy (also in normal pregnancy).

Thrombosis :- The formation of a clotted mass of blood with in a vessel or the heart during life is called thrombosis.

classification

venous Thrombosis	Arterial thrombosis
→ Deep vein thrombosis	→ Stroke
→ Portal vein thrombosis	
→ Renal vein thrombosis	→ Myocardial infarction
→ jugular vein thrombosis	→ other sites
→ Budd-chiari syndrome	
→ Paget-schoetter disease	
→ cerebral venous sinus thrombosis	

The End Paper