University of Mosul
Lecture No.: 12
College of Veterinary Medicine
Date:
Unit of Scientific Affairs
Website:

Lecture title: Disturbances in circulation

Lecturer Affiliation: Department of pathology and poultry diseases

Summary:
In this portion of General Pathology we will study what can happen when normal circulation and hemostasis are interrupted. It is important to have a good understanding of how fluids normally pass from the vascular system into tissues and back again for the study of disease, understanding the pathogenesis of disease, and treatment of disease processes.

CONGESTION and HYPEREMIA

Hyperemia is increased amount of blood in circulatory system.

It is of two types, active and passive. In active hyperemia blood accumulates in arteries while in passive hyperemia the amount of blood increases in veins.

Etiology
- As a result of inflammation.
- Obstruction of blood vessels.

Macroscopic and microscopic features
- Organ becomes dark red! cyanotic.
- Size of organ increases.
- Weight of organ increases.
- Blood vessels become distended due to accumulation of blood.
- Increased amount of blood in blood vessels.
- Veins/ capillaries/ arteries are distended due to accumulation of blood.
- Blood vessels become enlarged with blood and their number increases.

HAEMORRHAGE
Escape of all the constituents of blood from blood vessels. It may occur through two processes *i.e.* ***rhexis***- break in wall of blood vessel or through ***diapedesis*** in

which blood leaves through intact wall of blood vessel. It occurs only in living animals.

Etiology

- Mechanical trauma
- Necrosis of the wall of blood vessels
- Infections
- Toxins
- Neoplasm

Macroscopic and microscopic features

- Organ becomes pale due to escape of blood
- As **per size**, the haemorrhage is classified as under:

- Pinpoint haemorrhage of about one mm diameter or pinhead size is known as ***petechiae.***
- More than one to 10 mm diameter haemorrhage are known as ***ecchymoses***.
- Irregular, diffuse and flat areas of haemorrhage on mucosalor serosal surfaces are known as ***suffusions***.
- Haemorrhage appear in line in crests or folds on mucous membrane are known as ***linear haemorrhage***.
- ***Hematoma*** is the accumulation of blood in spherical shaped mass.

- According to **location**, the haemorrhage is classified as:
- **Hemothorax**: Blood in thoracic cavity.
- **Hemopericardium**: Blood in pericardial sac. When there is increased amount of blood in pericardial sac, it causes heart failure and is known as ***cardiac temponade***.
- **Hemoperitonium**: Blood in peritoneal cavity.
- **Hemoptysis**: Blood in sputum.
- **Hematuria**: Blood in urine.
- **Epistaxis**: Blood from nose.
- **Metrorrhagia**: Blood from uterus.
- **Melena**: Bleeding in faeces.
- **Hematemesis**: Blood in vomitus.

Histological features

- Blood constituents are seen outside the blood vessels.
- Break in blood vessels.

• Presence of red blood cells in tissues outside the blood vessels.