**University of Mosul**
**Lecture No.: 13**
**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.

### SHOCK

Shock is a circulatory disturbance characterized by reduction in total blood volume, blood flow and by hemconcentration.

### Etiology

***Primary shock***

- Occurs immediately after injury.
- Injury/extensive tissue destruction.
- Emotional crisis.
- Surgical manipulation.

***Secondary shock***

- Crushing injury involving chest and abdomen.
- Occurs after several hours of incubation.
- Release of histamine and other substances by injured tissue.
- Extensive haemorrhage.
- Burns
- Predisposing factors like cold, exhaustion, depression.

### Macroscopic and microscopic features

- Acute general passive hyperemia
- Dilation of capillaries
- Cyanosis
- Numerous petechial haemorrhages
- Edema and loose connective tissue
- Capillaries and small blood vessels are distended due to accumulation of blood.

• Number of engorged blood vessels increased.
• Focal haemorrhage.
• Edema, cells separated farther due to accumulation of transudate in intercellular spaces.

## SLUDGED BLOOD

Sludged blood is agglutination of erythrocytes in the vascular system of an animal.

### Etiology

• Fluctuation in blood flow
• Slow rate of blood flow

### Macroscopic and microscopic features

• Edema
• Emboli
• Infarction
• Necrosis
• Clumping of erythrocytes in pulmonary capillaries.
• Infarction, necrosis.
• Edema.
• Erythrophagocytosis by reticuloendothelial cells.