Lecture 3 Inflammation / Sec. year / Dept. of Intelligent medical systems :

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Inflammation ; is a histopathological changes due to several causes .
Types of Inflammation : depend on duration (Time) Acute , sub-acute and Chronic .
Acute from few hours till 6 weeks / sub- acute 6 - 10 weeks / 10 weeks and morechronic inflammation .
Cardinal Signs of acute inflammation :

1 – Tumor(Swelling)2 – Rubor (Redness) 3 – Dolor (Pain) 4 – Calor (Heat) 5 – Dysfunction(Loss of function)

Causes of Acute Inflammation

1 – Physical agents : include , trauma (car accidents , surgical operations , radiation , burning by (hot water , fire or Electricity) .

2 – Chemical agents , such as Acids and bases , poisons , pollutions .

3 - Biological agents ; Such as Bacteria which cause its pathological effects by toxins (like Cholera , Salmonella typhi , Anthrax , Brucella / Malta fever , TB Tuberculosis)

Viruses ; all Viruses are pathogenic because they survive in living cells and due to multiplication the cell will ruptured . Viruses such as Influenza virus , Measles , Mump , Corona , Aids virus , Herpes simplex .

Parasites ; Such as Protozoa (Leishmania , Malaria , Giardia , Amebiasis) .

4 – Immunological Reaction ; Allergy , there are 4 types but first two considered as causes of acute inflammation .

Cellular events (leukocytes) in acute inflammation :

– Margination : (Pavementation) especially for leukocytes line up against endothelium .

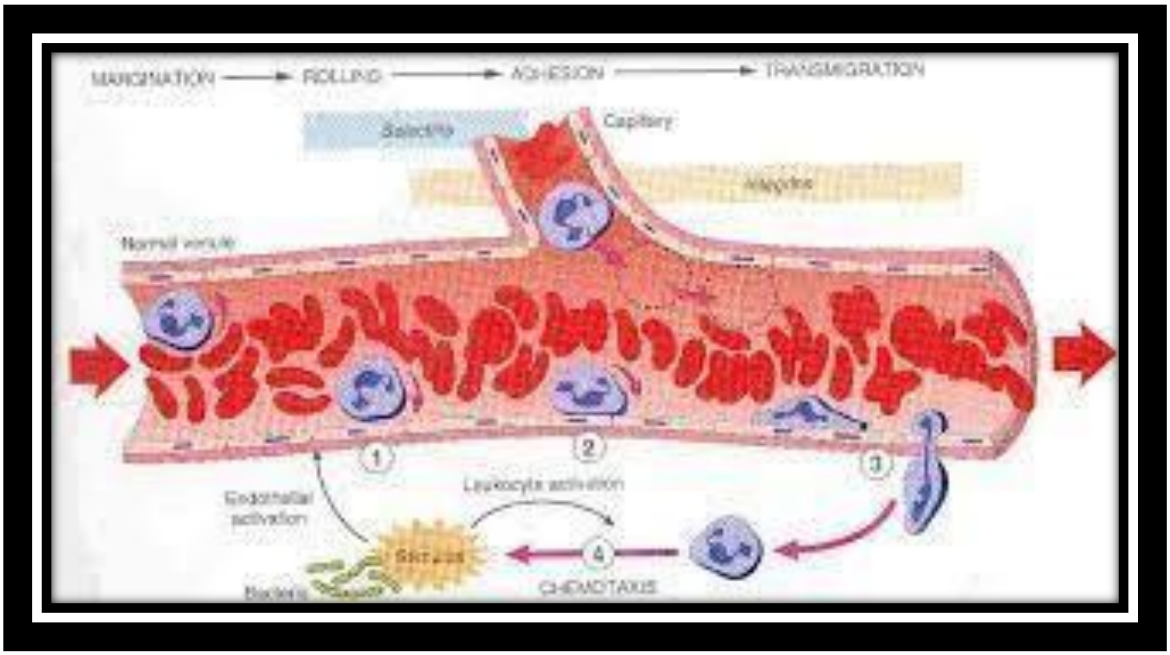
– Adhesion ; connect the endothelium of blood vessels .

– Emigration ; Cells (leukocytes , neutrophils , eosinophils basophils , monocytes and Lymphoctes with some erythrocytes move(migrate) through the blood vessels wall to the inflamed tissue .

– Chemotaxis : Chemoattraction such as serotonin , chemical substance it has a key role normally with body temperature , mood , sleep and appetite so all these

physiological functions disturb during inflammation . Serotonin enhance phagocytosis .

- Phagocytosis : It is a process of macrophages and neutrophils in inflammation , It is defense against pathogen (bacteria , parasites , viruses) also engulf debris of dead cells .



Types of Inflammation :

Types of inflammation classified depend on type of Exudates :

– Catarrhal Inflammation :

Characterized by watery exudates of mucin it change to thick mucous /inflammation of mucous membrane /

,happen in rhinitis , tonsillitis , enteritis in response to infection .

– Serous Inflammation :

It characterized by serum like exudates due to increased capillary permeability it occur with blister of burning (vesicles) , with viral infection by Herpes simplex (blister of fever near mouth) .

- Suppurative Inflammation :

This inflammation characterized by purulent exudates (Pus) semi-sold white yellowish in color . It caused by pyogenic bacteria such as (Corynebacterium , Streptococci
, Staphylococci , Mycobacterium) . These causes an abscesses / different sizes .

Abscess : An abscess is a painful as a sac of pus in the middle liquefied contain bacteria and dead cells surrounded by fibrous tissue called capsule .

- Fibrinous Inflammation :

This inflammation characterized by presence of fibrin deposition with plasma protein (more often with chronic inflammation .

It happen with ulcer due to treatment coated with fibrin membrane , also with diphtheritic membrane and auto - immune diseases (Rheumatism) .

- Necrotic Inflammation : This inflammation characterized by necrotic cells and degenerative tissues due to especial bacteria called Necrobacillosis .

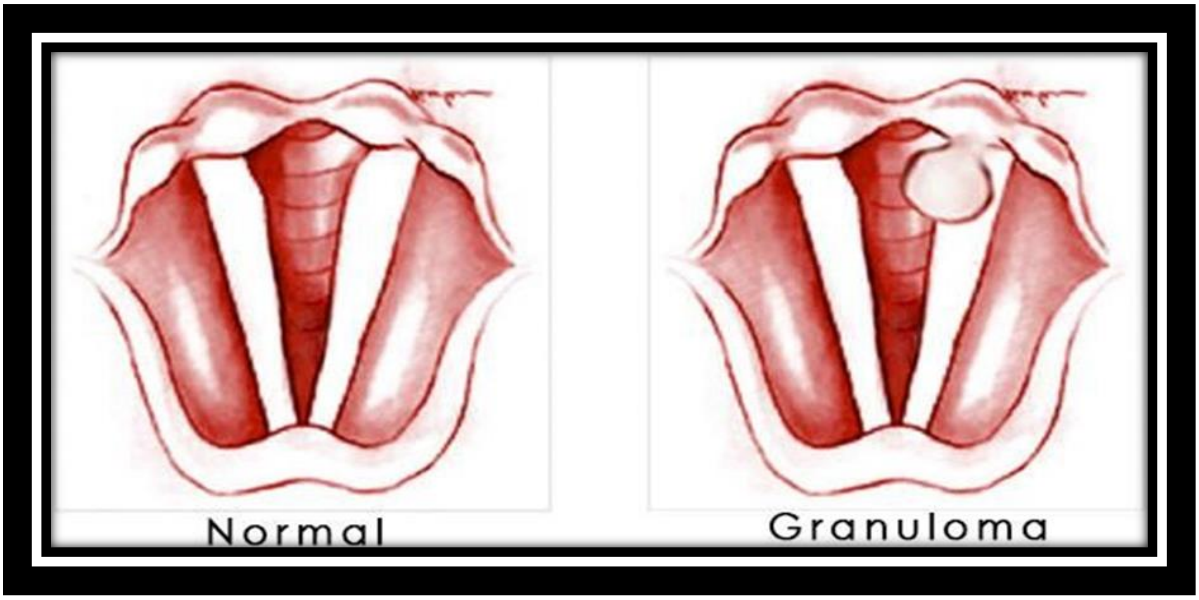
– Hemorrhagic Inflammation : This inflammation bloody exudates sometimes mixed with mucous as In Dysentery caused by bacteria or parasites such as Amebic dysentery

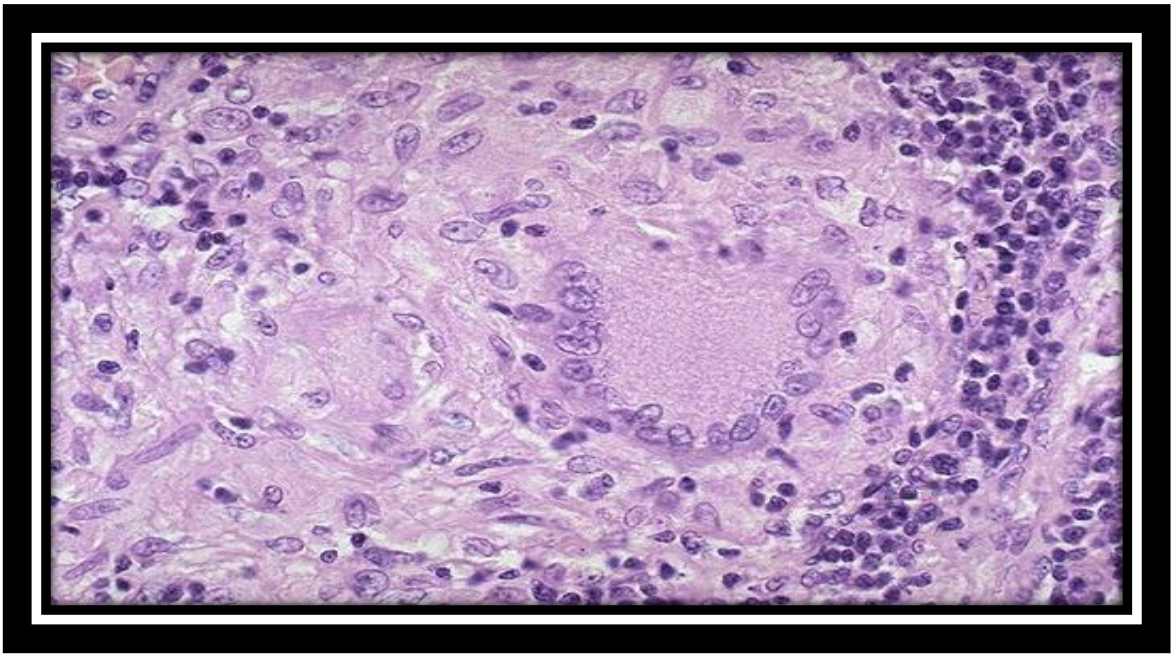
. Its symptom include diarrhea and fever .

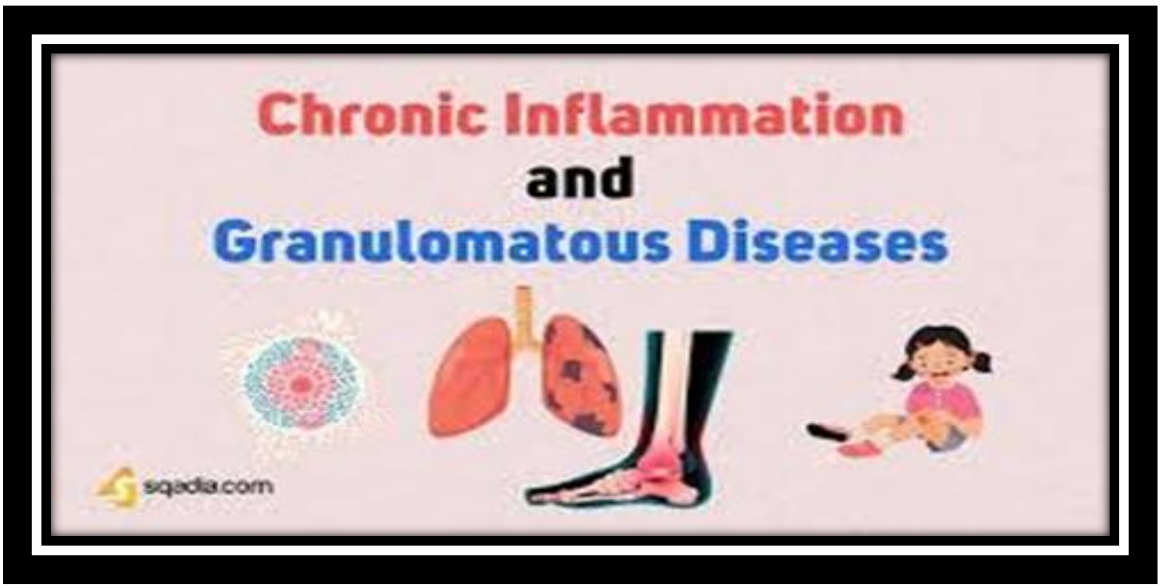
Another disease called Hemorrhagic Fever caused by virus its lesions in skin characterized by bloody exudates.

6 - Granulumatous inflammation : It is chronic inflammation , characterized by formation of granuloma which is contain many cells such as macrophages , leukocytes , giant cells , Langhan's cells and lymphocytes .

Focal Granuloma



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and
Granulomatous Diseases
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