INFLAMMATION

- **Types of acute inflammation:**
- **1. SUPPURATIVE INFLAMMATION**
- Definition: Severe acute inflammation characterized by pus formation.
  Causes: Pyogenic microorganisms as staphylococcus aureus, streptococcus haemolyticus
- **Composition of Pus:**
  (1) Bacteria living and dead and their toxins.
  (2) Inflammatory cellular exudate in the form of leucocytes, dead leucocytes(pus cells),
  (3) Inflammatory fluid exudate
  (4) necrotic tissues.

- **Abscess**
- **Definition:** A localized suppurative inflammation resulting in of an irregular cavity containing pus.
  Cause: Commonly staphylococcus aureus. staphylococci produce the coagulase enzyme which helps fibrin formation that localizes the inflammation.
  Pathology:
  (I) Early the abscess shows two zones, a central necrotic zone surrounded by a zone of acute inflammation containing large number of polymorphonuclear leucocytes.
  (2) Many polymorphonuclear leucocytes die and their liberated proteolytic enzymes liquefi the margin of the necrotic area with the formation of pus, so the abscess shows three zones.
  (a) Central ***necrotic core*** which gradually diminishes in size by liquefaction of its margin until it disappears.
  (b) Midzone containing pus, the ***abscess cavity***.
  (c) Peripheral zone of inflamed tissue called ***pyogenic membrane.***
  (3) Once pus is evacuated healing by granulation tissue and fibrosis occurs.

- **Complications:**
  (1) Lymphatic spread of infection causes lymphangitis and lymphadenitis.
  (2) Blood spread of bacteria and its toxins causes bacteraemia, septicaemia or toxaemia.
  (3) Septic thrombophlebitis causes pyaemia.
  (4) Inadequate drainage and treatment changes the abscess to a chronic one.
  (5) Complications of healing in the form of chronic ulcer, sinus, fistula and keloid.
- **Cellulitis**
- **Definition:** Acute diffuse suppurative inflammation.
  Cause: Streptococcus haemolyticus. The organism produces two enzymes:
  (1) ***Fibrinolysin:*** Dissolves fibrin.
  (2) ***Hyaluronidase:*** Dissolves hyaluronic acid of ground substance helping spread of bacteria and its toxins.

- **II. NON-SUPPURATIVE INFLAMMATION**
  (1) Catarrhal Inflammation:
  Mild acute inflammation of the mucous membranes characterized by excess mucus secretion e.g. catarrhal rhinitis.
  (2) Membranous Inflammation (Diphtheria):
  Severe acute inflammation characterized by the formation of a pseudomembrane on the affected surface e.g. diphtheria and bacillary dysentery. The bacteria remain on the mucosal surface and produce powerful exotoxin which causes patchy mucosal necrosis. The exotoxin diffuses through the mucosa to the submucosa causing acute inflammation. The exotoxin is absorbed in the blood stream causing severe toxaemia.
  (3)SeroFibrinousInflammation:
  Acute inflammation characterized by excess exudate rich in fibrinogen e.g. inflammation of serous sacs(pleura,pericardium,peritoneum)
  (4) Fibrinous Inflammation:
  Acute inflammation characterized by an exudate rich in fibrinogen e.g. lobar pneumonia.
  (5) Serous Inflammation:
  Acute inflammation characterized by excess serous exudate e.g. mild burns and herpes simplex.
  (6) Haemorrhagic Inflammation:
  Acute inflammation characterized by cellular exudate rich in the red blood cells due to vascular damagee.g.smallpox.
  (7) Necrotizing Inflammation: there is excessive tissues necrosis
  (8) Allergic Inflammation: the exudate is rich in eosinophil.

- **CHRONIC INFLAMMATION**

  Chronic inflammation is characterized by the following:
  (1) The irritant is mild and has a prolonged action.
  (3) The tissue response is gradual and prolonged.
  (4) Tissue necrosis in progressive and gradually replaced by fibrous tissue.
  (5) blood vessels shows ***end arteritis obliterans.***
  (6) The inflammatory fluid exudate is scanty.
  (7) The inflammatory cellular exudate are:
  (a) ***Lymphocytes***
  (b) ***Plasma cells:*** Form antibodies.
  (c) ***Macrophages:*** Derived from blood monocytes.
  (d) ***Foreign body giant cells:*** Formed by fusion of several macrophages or repeated division of the nucleus of a single macrophage without division of the cytoplasm.

- **Types of Chronic inflammation:**
  (1) ***Chronic non-specific inflammation:*** Different irritants gives reactions of the same microscopic picture.
  (2) ***Chronic specific inflammation:*** Each irritant produces a characteristic microscopic picture, e.g. tuberculosis.

- **GRANULOMAS**
  Definition: Granuloma is a type of chronic specific inflammation characterized by accumulation of large number of macrophages together with lymphocytes, plasma cells, giant cells and fibroblastes forming tumour-like masses.
  Types:
  (1) ***Infective granuloma:***
  (a) Bacterial: e.g. tuberculosis, leprosy and syphilis.
  (b) Parasitic: e.g. bilharziasis and leishmaniasis.
  (c) Fungal: e.g. Madura foot.
  (2) ***Non infective granuloma***
  (a) Silicosis and asbestosis.
  (b) Foreign body granuloma around foreign bodies as pieces glass, catgut and talc powder ... etc.
  (3) ***Granuloma of unknown cause:*** e.g. sarcoidosis