CHRONIC INFLAMMATION

Dr Jaimeeta Kaur

Lecturer Department of Pathology

Chronic Inflammation

- **Chronic inflammation is a prolonged host response to persistent stimuli.**

- **Chronic inflammation is a response of prolonged duration in which inflammation, tissue injury and attempts at repair coexist, in varying combinations.**

Chronic Inflammation

- **The cells of chronic inflammation are lymphocytes, macrophage, plasma cells, mast cells and epithelioid cells.**

Features of Chronic Inflammation

1.Infiltration with mononuclear cells, macrophages, lymphocytes, and plasma cells.

2. Tissue destruction by inflammatory cells.

3.Attempts at healing by connective tissue replacement of damaged tissue, angiogenesis (proliferation of small blood vessels) and fibrosis

Causes of Chronic Inflammation

i. **Acute inflammation** sometimes terns into prolonged inflammation.

ii. **Persistent infections** by microorganisms (mycobacteria, virus, parasite).

iii. **Hypersensitivity diseases** which is excessive and inappropriate activation of the immune system (autoimmune diseases) e.g Rheumatoid arthritis, multiple sclerosis inflammatory bowel disease, allergic diseases.

Causes of Chronic Inflammation

iv.Prolonged exposure to potentially toxic agents.

i.Silica results in an inflammatory lung disease called silicosis.

ii.Atherosclerosis a chronic inflammatory process of the arterial wall induced by excessive production and tissue deposition of endogenous cholesterol and other lipids.

Examples of Chronic Inflammatory Diseases

- Atherosclerosis
- Tuberculosis
- Inflammatory bowel disease (crohn disease)
- Type 2 Diabetes mellitus
- Silicosis
- Rheumatoid arthritis
- Sarcoidosis
- Syphilis

- **Cat scratch disease.**

Granulomatous Inflammation

- **Granulomatous inflammation is a form of chronic inflammation characterized by collections of activated macrophages and sometimes associated with central necrosis.**

- **Granuloma formation is a cellular attempt to contain an offending agent that is difficult to eradicate.**

Granulomatous Inflammation

- **The activated macrophages develop abundant cytoplasm and resemble epithelial cells and are called epithelioid cells.**

- **Some activated macrophages may fuse forming multinucleate giant cells.**

What is Granuloma?

Granuloma is a focus of chronic inflammation in which there is collection of epithelioid macrophages surrounded by a collar of lymphocytes, fibroblasts occasionally plasma cells with central necrosis containing giant cells.

What is Caseous necrosis?

- **Caseous necrosis is found in Tubercular granuloma.**
- **Caseous necrosis is granular, cheesy appearance.**
- **Microscopically caseous necrosis is eosinophilic, amorphous, granular.**

Granuloma;Types:

There are two types of granulomas:

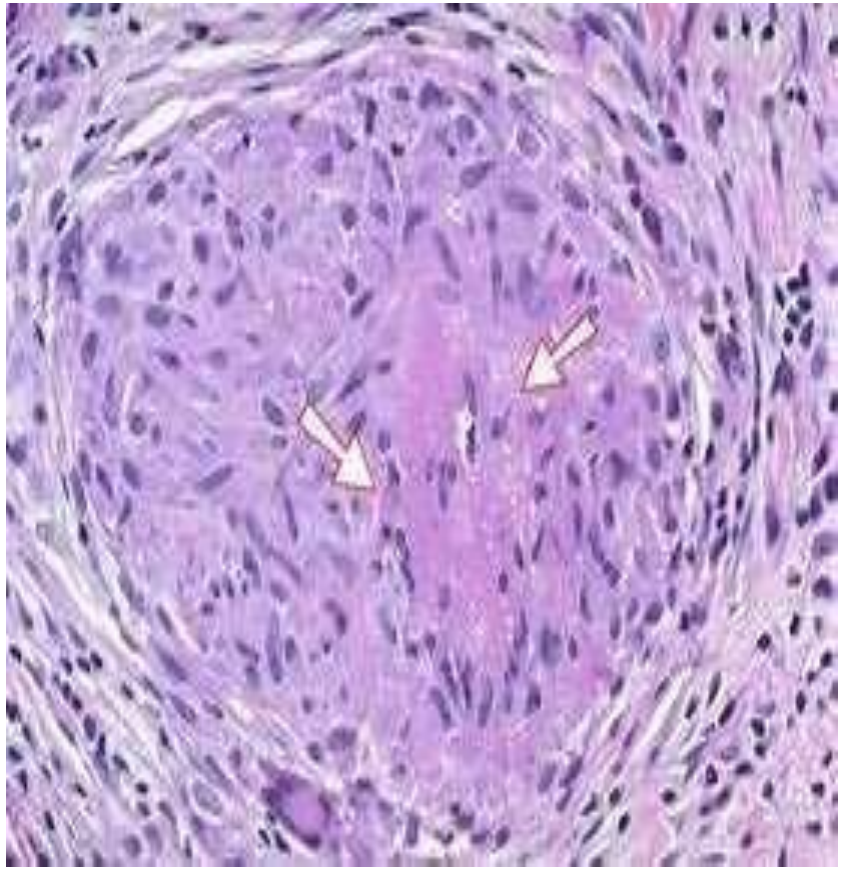
i. Foreign body granuloma:

Granuoma forms due to inert foreign bodies like suture material, talc, suture material, silica.

ii. Immune granuloma:

Granuoma forms due to agents that are capable of inducing a persistent T cell–mediated immune response. e.g Granuloma in Tuberculosis.

Granuloma



Examples of Diseases with Granulomatous Inflammation

i. Tuberculosis (Caseous necrosis present).

ii. Sarcoidosis .

iii. Syphilis.

iv. Cat scratch disease.

v. Crohns disease.

All granulomatous inflammation is chronic inflammation but all chronic inflammation is not granulomatous inflammation explain

Systemic effect of Inflammation

- **Inflammation even if it is localized, is associated with systemic reactions that are collectively called the acute-phase response.**

- **The cytokines TNF, IL-1, and IL-6 are important mediators of the acute-phase reaction.**

Systemic effect of Inflammation

- **Fever**
- **Acute phase protein:** C-reactive protein (CRP), Fibrinogen.
- **Leukocytosis**
- **Increased pulse**
- **Increased blood pressure**
- **Decreased sweating**
- **Rigors (shivering)**

Giant cell

Giant cells are large cells with more than one nucleus.

- **Physiological giant cells:**

  Megakaryocytes, Syncytiotrophoblast.

- **Pathological giant cells:**

  Langhans giant cells (Tuberculosis), Foreign body Giant cells, Tumor Giant cell (Reed-sternberg cell)

THANK YOU