

## **Breast Pathology /Lec.no.1**

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## **Breast Pathology :::**

### **Inflammatory Disorders**

#### **1- Acute Mastitis**

Almost all cases of acute mastitis occur during **the first month of breast feeding**. During this time the breast is susceptible to bacterial infection because of the development of cracks and fissures in the nipples, from this portal of entry, *Staphylococcus aureus* or, less commonly, *streptococci* invade the breast tissue.

**Clinically** Lactation mastitis usually affects only one breast and the symptoms can develop quickly usually the breast is erythematous and painful ( pain or a burning sensation continuously or while breast-feeding) and fever is often present, if not treated the infection may spread to the entire breast. Most cases of lactational mastitis are easily treated with appropriate antibiotics.

#### **Morphology:**

##### **Gross features:**

Staphylococcal infections usually produce a localized area of acute inflammation that may progress to the formation of abscesses.

Streptococcal infections tend to cause a diffuse spreading infection that eventually involves the entire breast.

##### **Microscopical features:**

The breast tissue is infiltrated by neutrophils and may be necrotic.

## **2 - Mammary Duct Ectasia**

This disorder tends to occur in **the fifth or sixth decade of life**, usually in multiparous women, the principal significance of this disorder is that it produces **an irregular palpable mass** that mimics the mammographic appearance of carcinoma.

Mammary duct ectasia occurs when a duct beneath the nipple becomes dilated and filled with fluid. The duct can then become blocked or clogged with a thick, sticky substance.

**Clinically** patients present with a poorly defined palpable periareolar mass that is often associated with nipple discharge (thick, white nipple secretions), skin retraction, pain and erythema are uncommon.

### **Morphology:**

#### **Gross features:**

Grey white, firm mass with dilated ducts and intraluminal secretions.

#### **Microscopical features:**

Dilation of ducts, which filled by granular debris that contains numerous lipid-laden macrophages.

The periductal and interductal tissue contains dense infiltrates of lymphocytes and macrophages, and variable numbers of plasma cells and fibrosis.

## **3 - Fat Necrosis**

The majority of affected women have a history of breast trauma or surgery to an area of fatty tissue, the major clinical significance of the condition is its possible confusion with breast cancer.

**Clinically** Fat necrosis can present as a painless palpable mass, skin thickening or retraction, or mammographic calcifications.

## **Morphology:**

### **Gross features:**

Acute lesions may be hemorrhagic and contain central areas of necrosis.

In subacute lesions there is ill-defined, small, ~~hard~~ firm, gray-white nodules containing small chalky-white foci or dark hemorrhagic debris.

### **Microscopical features:**

Initially there is an intense neutrophilic infiltrate mixed with macrophages. Over the next few days proliferating fibroblasts associated with new vessels and chronic inflammatory cells surround the injured area.

Eventually affected area is replaced by scar tissue or is encircled and walled off by fibrous tissue

## **4-Lymphocytic Mastopathy (Sclerosing Lymphocytic Lobulitis)**

This condition is affects **both young and middle-aged women** and is frequently associated with type 1 (insulin-dependent) diabetes or autoimmune thyroid disease. Based on this association, it is hypothesized to have an autoimmune basis. Its only clinical significance is that it must be distinguished from breast cancer. **The lymphocytes are mainly of the B-cell type**

**Clinically** This condition presents with single or multiple hard palpable masses, the masses may be bilateral and may be detected as mammographic densities.

## **Morphology:**

### **Gross features:**

The lesion is grey white hard, single or multiple mass.



**Microscopical features:**

They show collagenized stroma surrounding atrophic ducts and lobules. The epithelial basement membrane is often thickened, a prominent lymphocytic infiltrate surrounds the epithelium and small blood vessels.

**5- Granulomatous Mastitis**

Granulomatous lobular mastitis is an uncommon breast-limited disease, it is present in less than 1% of all breast biopsy specimens, the lesion can be distinguished by granulomas involving lobular epithelium. It affects women in the third decade of life, often associated with history of pregnancy, lactation, and oral contraceptive use. Clinically, the presentation typically involves the appearance of a tender, firm breast mass.

The causes include:

**1- Systemic granulomatous diseases** (e.g., Wegener granulomatosis or sarcoidosis) that occasionally involve the breast.

**2-Granulomatous infections** caused by mycobacteria or fungi. Infections of this type are most common in immunocompromised patients or adjacent to foreign objects such as breast prostheses or nipple piercings.

**3 - Granulomatous lobular mastitis** is an uncommon breast disease that only occurs in parous women, the granulomatous inflammation is confined to the lobules, suggesting that it is caused by a hypersensitivity reaction to antigens expressed by lobular epithelium during lactation.