

Teaching topics : Breast

Teaching outline :

A. The female breast

1. Normal anatomy and histology

2. Pathology:

- a. Disorders of development: milkline remnants, accessory axillary breast tissue, congenital nipple inversion, macromastia, reconstruction or augmentation
- b. Clinical presentations of breast disease: pain, discrete palpable masses, nipple discharge, mammographic densities and calcifications
- c. Inflammations: acute mastitis, periductal mastitis, mammary duct ectasia, fat necrosis, lymphocytic mastopathy (sclerosing lymphocytic lobulitis), granulomatous mastitis
- d. Benign epithelial lesions:
 - 1) Nonproliferative breast changes: cysts, fibrosis, adenosis
 - 2) Proliferative breast disease without atypia: epithelial hyperplasia, sclerosing adenosis, radial scar (complex sclerosing lesion), papillomas, complex fibroadenomas
 - 3) Proliferative breast disease with atypia: atypical ductal hyperplasia, atypical lobular hyperplasia
- e. Carcinomas:
 - 1) Well defined risk factors: age, age at menarche, first live birth, first degree relatives with breast cancer, breast biopsies, race
 - 2) Additional risk factors: estrogen exposure, radiation exposure, carcinoma of the contralateral breast or endometrium, geographical influence, diet, obesity, exercise, breast-feeding, environmental toxins, tobacco
 - 3) Treatment of women at high risk: bilateral prophylactic mastectomy, chemoprevention
 - 4) Etiology and pathogenesis: hereditary breast cancer, BRCA1, BRCA2, polygenic model, sporadic breast cancer
 - 5) Gene expression portraits: ER positive carcinomas, ER negative carcinomas, her2/neu positive carcinomas, basal-like carcinomas
 - 6) Classification of breast carcinoma: ductal carcinoma in situ, lobular carcinoma in situ, invasive lobular carcinoma, invasive ductal carcinoma, no special type, tubular/cribriform carcinoma, mucinous/colloid carcinoma, invasive micropapillary carcinoma, medullary carcinoma, metaplastic carcinoma
- f. Stromal tumors (fibroepithelial tumors): fibroadenoma, phyllodes tumor
- g. Other benign stromal lesions: pseudoangiomatoid stromal hyperplasia, lipoma, hamartoma, fibromatosis
- h. Sarcomas: liposarcoma, osteosarcoma, angiosarcoma
- i. Other malignant tumors: lymphoma, melanoma, benign and malignant epidermal tumors, metastatic malignancies

B. The male breast

1. Anatomy and Histology

2. Pathology:

a. Gynecomastia

b. Carcinomas