



TUMORS OF THE BREAST

Learning Objectives

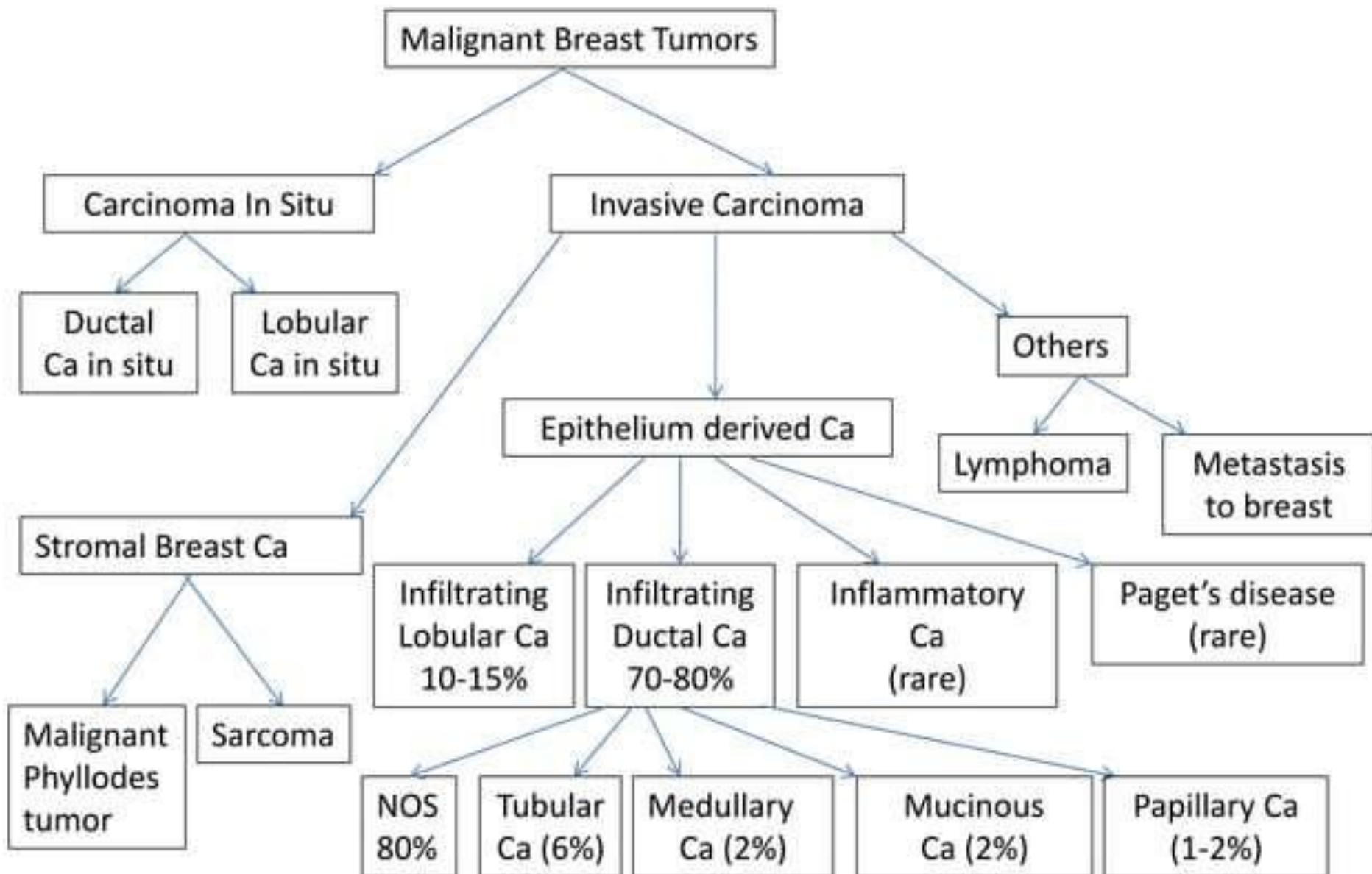
By the end of this session, you should know about

- Classification of breast tumors
- Gross and microscopic features of benign tumors of the breast.
- Gross and microscopic features of malignant tumor(s) of the breast

BENIGN BREAST TUMORS

- Fibroadenoma
- Intraductal Papilloma
- Benign phyllodes tumor
- Lactating Adenoma
- Myoepithelioma
- Hamartoma
- Hemangioma
- Hemangiopericytoma
- Lipoma
- Granular cell tumor
- Benign stromal spindle cell tumors

MALIGNANT BREAST TUMORS



FIBROADENOMA

Gross Features

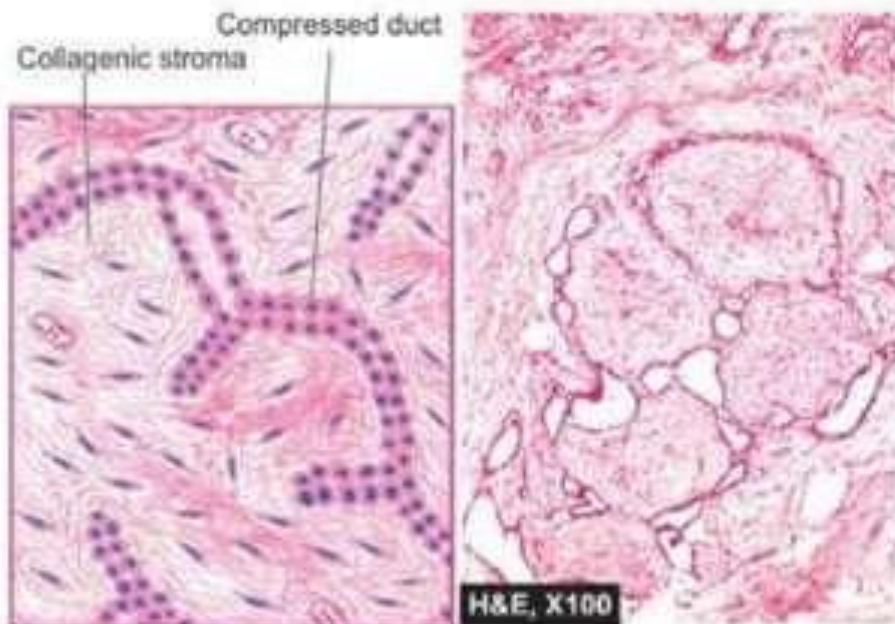


- Fibroadenoma is a small, solitary, well-encapsulated, spherical or discoid mass measuring 2-4 cm diameter.
- The cut surface is firm, grey-white, slightly myxoid and may show slitlike spaces.

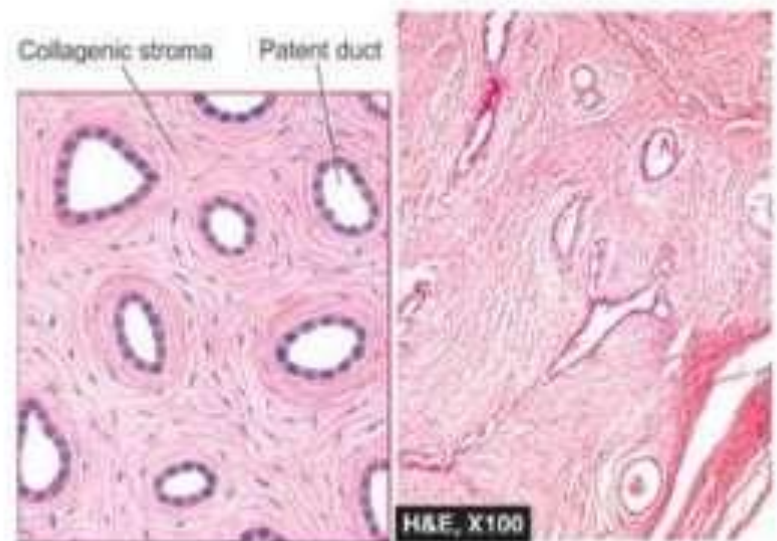
FIBROADENOMA

Microscopic Features

Arrangement between fibrous overgrowth and ducts may produce 2 types of patterns:



A. INTRACANALICULAR PATTERN



B. PERICANALICULAR PATTERN

stroma compresses the ducts which are reduced to **slit-like clefts** lined by **ductal epithelium** and may appear as cords of epithelial elements surrounding masses of fibrous tissue.

encircling masses of fibrous tissue around the patent or dilated ducts.

INTRADUCTAL PAPILLOMA

Gross Features

- Intraductal papilloma is usually **solitary**, **small**, less than 1 cm in diameter, commonly located in the major mammary ducts close to the nipple.
- Multiple papillomas are less common.

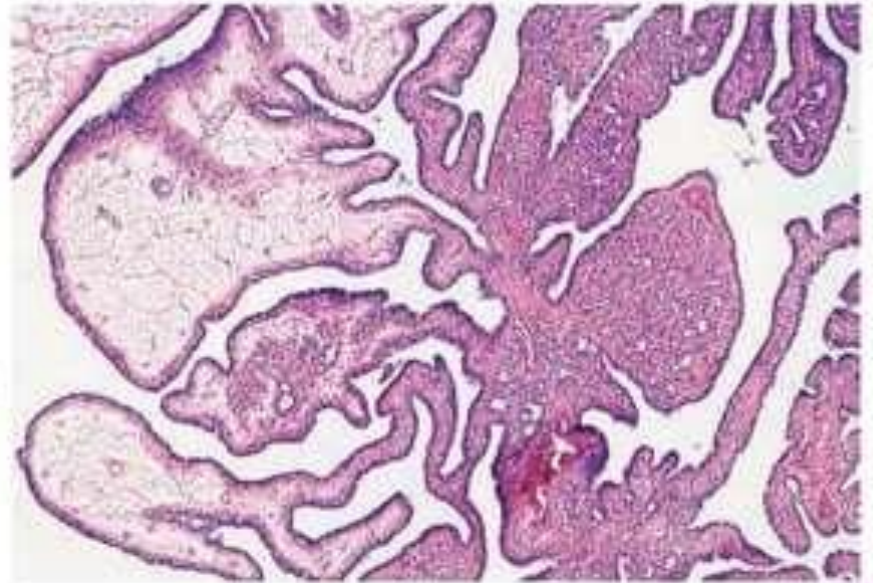


A polypoid mass is seen protruding within the lumen of a markedly dilated duct.

INTRADUCTAL PAPILLOMA

Microscopic Features

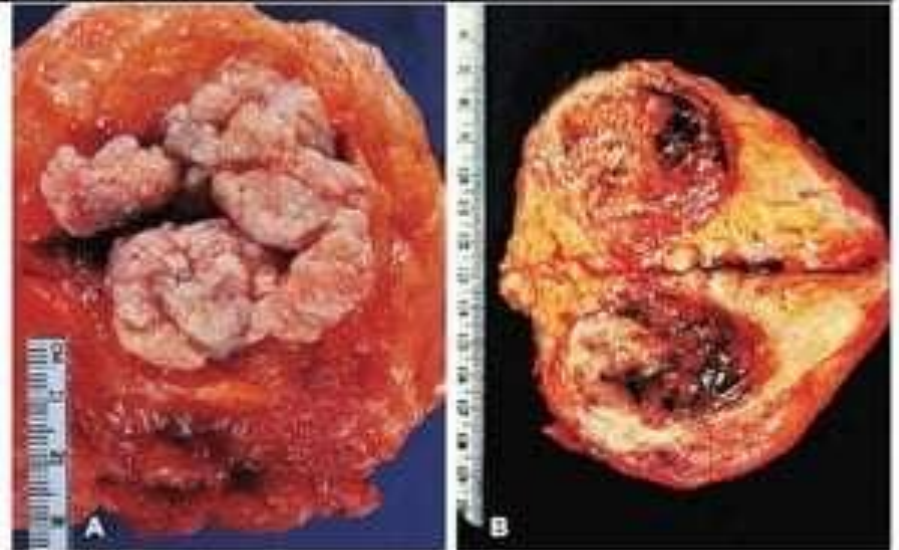
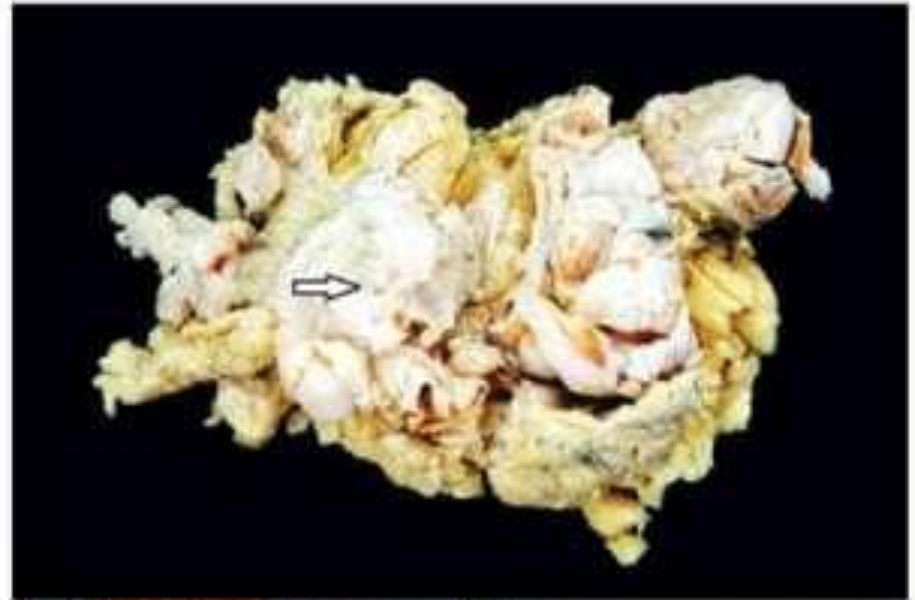
An intraductal papilloma is characterised by multiple papillae having well-developed fibrovascular stalks attached to the ductal wall and covered by benign cuboidal epithelial cells supported by myoepithelial cells.



PHYLLODES TUMOUR

Gross Features

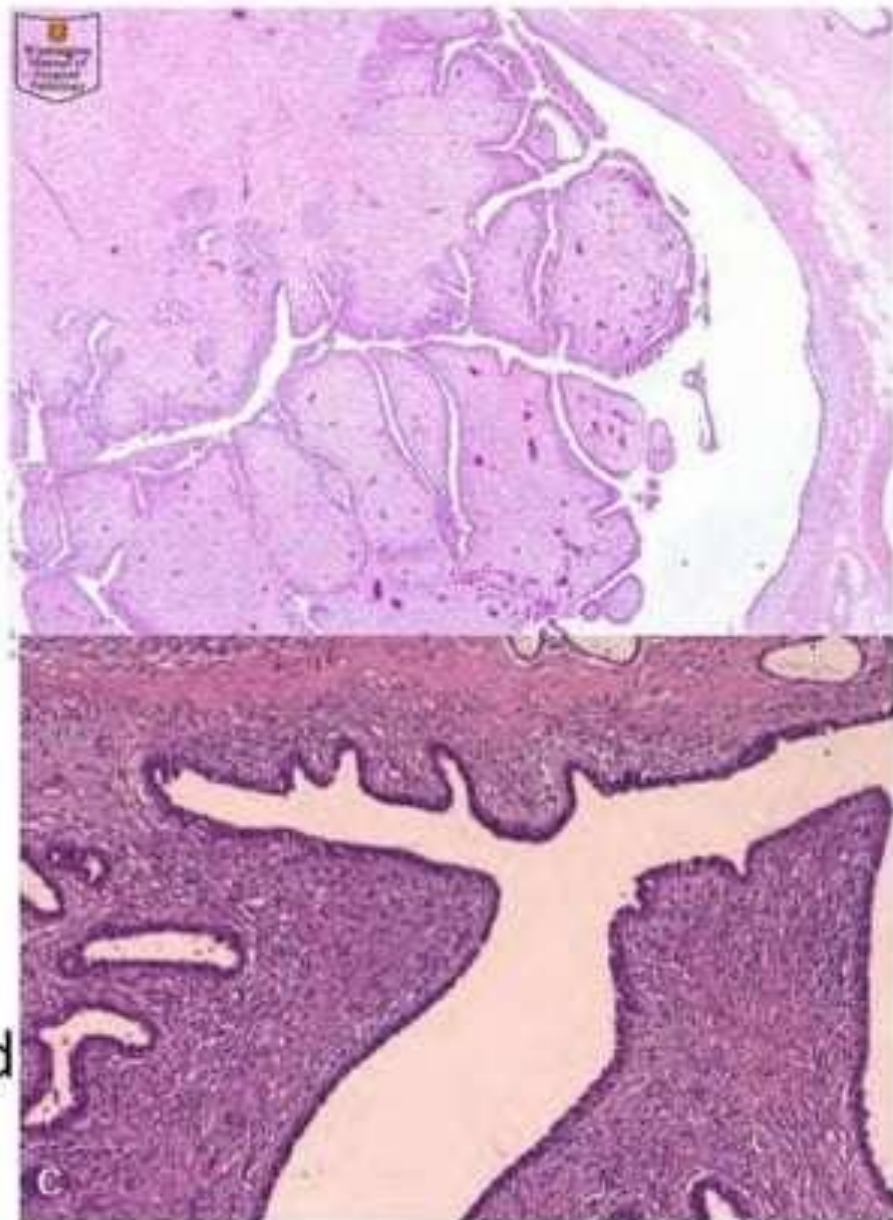
- Tumour is generally **large**, 10-15 cm in diameter, round to oval, **bosselated** and less fully encapsulated than a fibroadenoma.
- The cut surface is grey-white with cystic areas/cavities, areas of haemorrhages, necrosis and degenerative changes



PHYLLODES TUMOUR

Microscopic Features

- **Elongated, leaf like epithelial proliferation** with **squamous metaplasia** of ductal epithelium.
- **Increased stromal cellularity** typically in periductal regions.
- Cellular atypia or increased mitotic activity (0 - 4 mitotic figures/10 HPF) may be seen
- **Metaplastic change** is common in both epithelial and stromal elements



INFILTRATING DUCTAL CARCINOMA

Gross Features :



- Tumor is irregular, 1-5 cm in diameter, hard, cartilage-like mass that cuts with a grating sound.
- Tumor extending upto nipple and areola

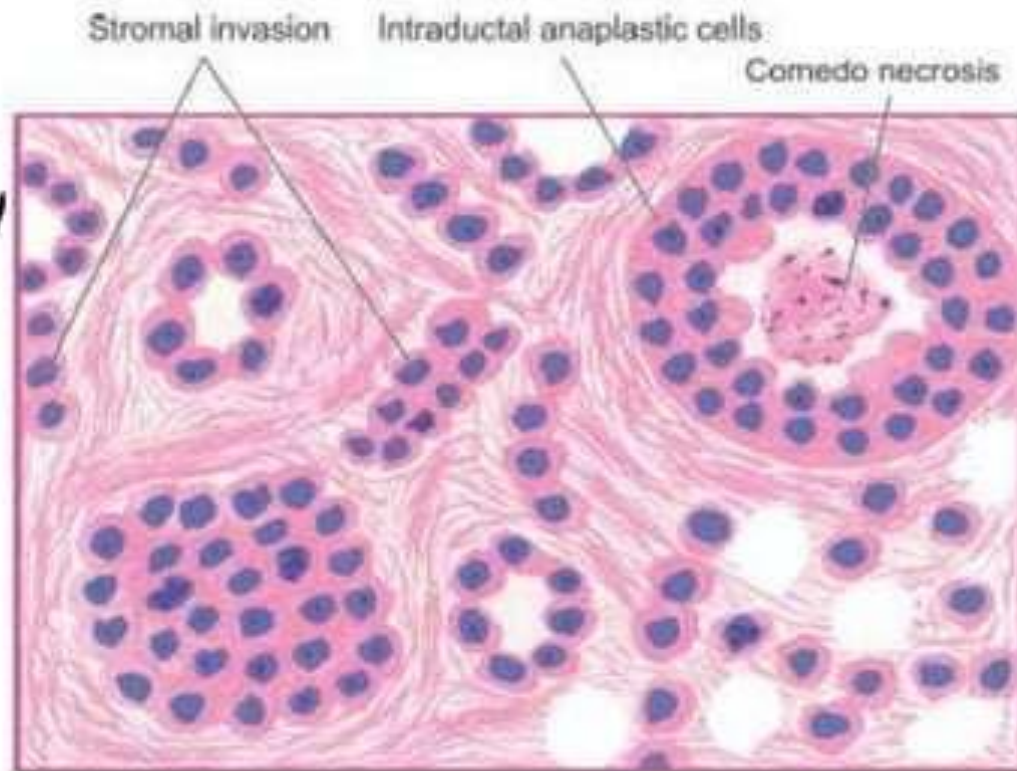


Cut surface shows a grey-white firm tumor with chalky streaks extending irregularly into adjacent breast parenchyma.

INFILTRATING DUCTAL CARCINOMA

Microscopic Features

- Anaplastic tumour cells form various patterns — **solid nests, cords, poorly formed glandular structures** and some **intraductal foci**.
- **Infiltration** by these patterns of tumor cells into diffuse fibrous stroma and fat.
- **Invasion** by the tumor cells into **perivascular & perineural space**, besides lymphatic and vascular emboli.



INFILTRATING LOBULAR CARCINOMA

Gross Features

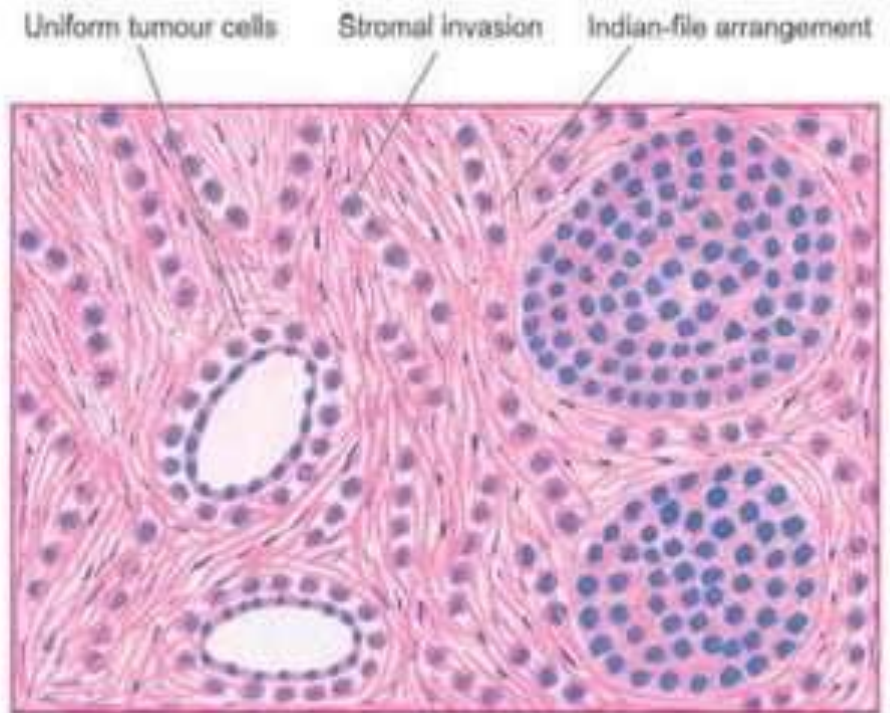
Appearance varies from a well-defined scirrhous mass to a poorly defined area of induration that may remain undetected by inspection as well as on palpation



INFILTRATING LOBULAR CARCINOMA

Microscopic Features

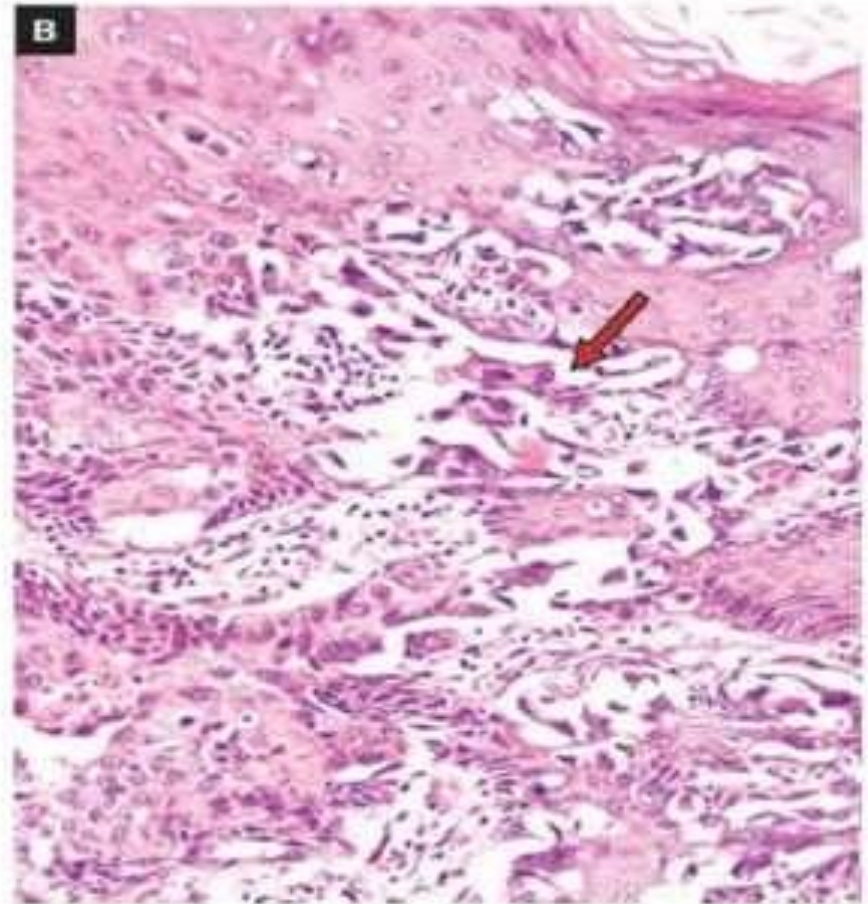
- A characteristic **single file (Indian file)** linear arrangement of **stromal infiltration** by the **tumor cells** with very **little tendency to gland formation** is seen.
- Individual tumor cells *are round and regular* with very little **pleomorphism** and **infrequent mitoses**.



INFILTRATING DUCTAL CARCINOMA

Microscopic Features

- Anaplastic tumour cells form various patterns — **solid nests, cords, poorly-formed glandular structures** and some **intraductal foci**.
- **Infiltration** by these patterns of tumor cells into diffuse fibrous stroma and fat.
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PAGETS DISEASE OF THE BREAST

Gross Features



Clinical appearance of Paget disease of breast
Eczematous, hyperemic and eroded nipple

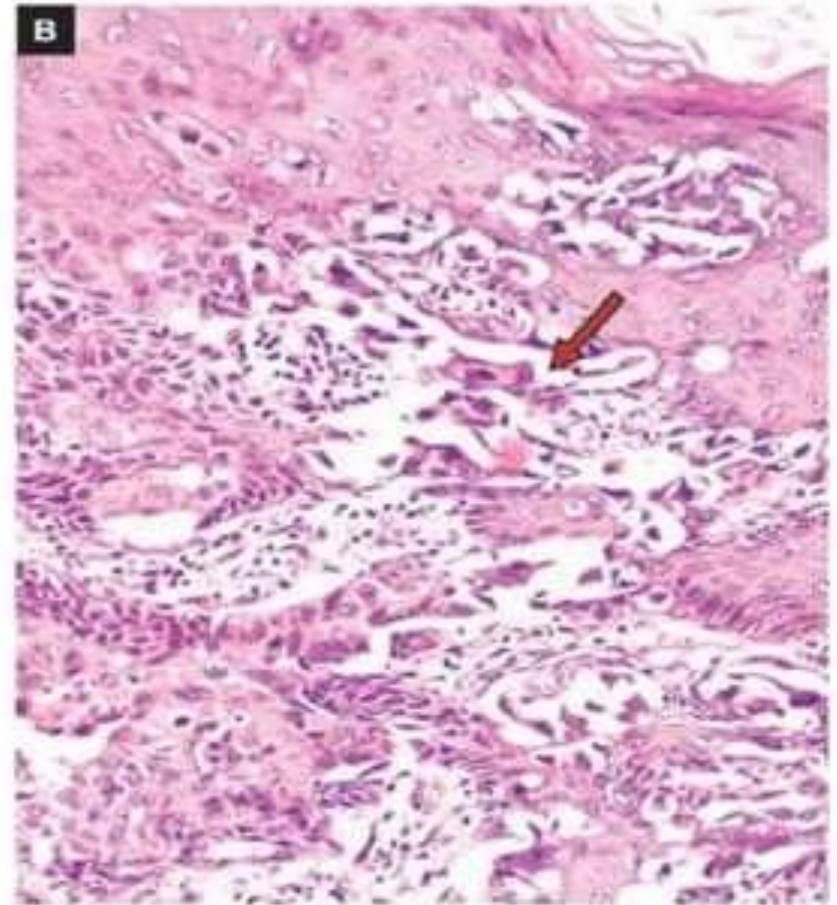


The skin of the nipple and areola is **crusted, fissured and ulcerated** with **oozing of serosanguineous fluid** from the erosions

PAGETS DISEASE OF THE BREAST

Microscopic Features

- Presence of **Paget's (tumor) cells** singly or in small clusters in the epidermis.
- Individual tumor cells are **spherical** and **larger** than epidermal cells, having **hyperchromatic nuclei** with **cytoplasmic halo** that stains positively with **mucicarmine**.



Clefts in the epidermal layers contain large tumor cells (arrow).