

Reproductive

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Practical

Benign Prostatic Hyperplasia



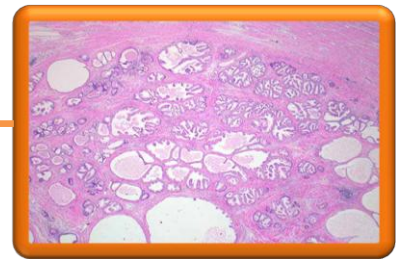
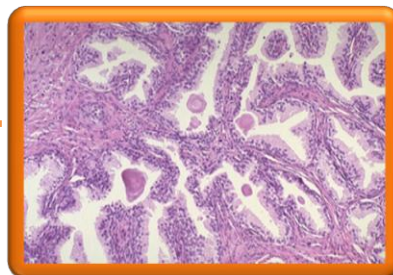
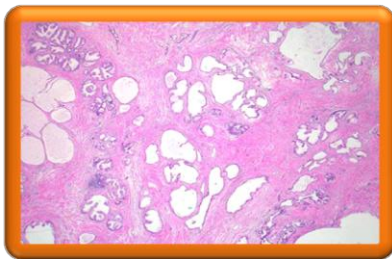
- The transitional zone of the prostate is affected in BPH, while in carcinoma is the peripheral zone.
- BPH is a benign condition with good prognosis.



The enlarged prostate obstructs the urinary bladder, which can lead to bladder hypertrophy and trabeculation of the wall.



Nodular enlargement (**multiple nodules**) of prostate. Nodules are of different sizes, occupying central and transitional zone.



Microscopically:

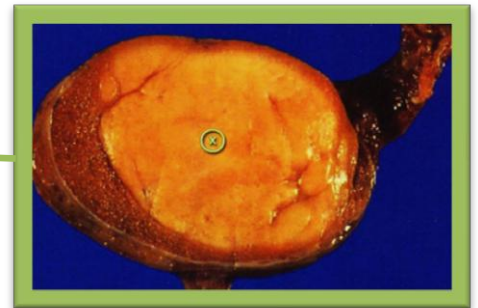
- Nodular hyperplasia of **glandular and fibromuscular stromal** tissue. (like fibroadenoma)
- Each nodule shows large number of glands of variable sizes **lined by an inner columnar and an outer (basal layer) cuboidal or flattened epithelium (2 layers)** and some are cystically dilated.
- Eosinophilic hyaline **corpora amylacea** is present in some glands.
- There is increase in fibromuscular stroma around the glands with focal **chronic** inflammatory cell infiltration.

We measure PSA (prostate specific antigen) level in serum, it's only slightly increased or normal while in prostatic carcinoma, PSA levels are highly increased.

Normal PSA is less than 5



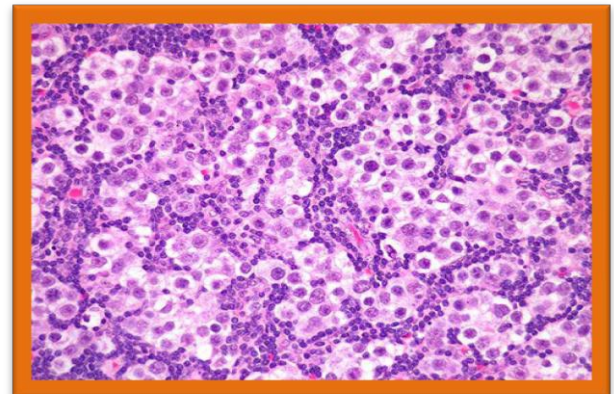
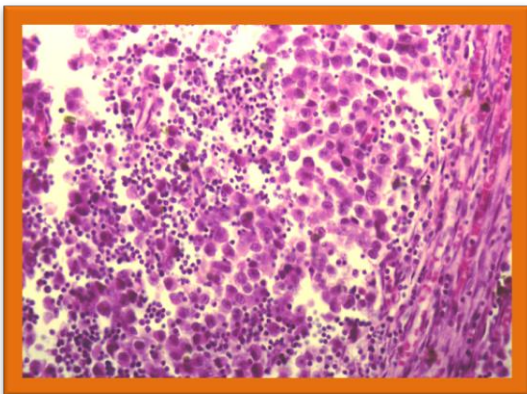
Seminoma of the Testis



Partial replacement of the normal testicle by a pale and yellowish homogenous and solid mass.

Gross:

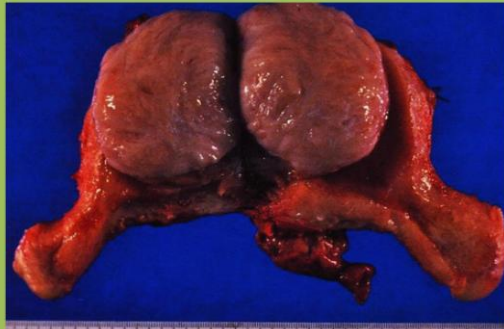
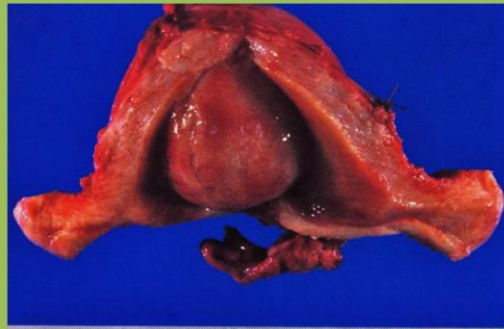
- Well circumscribed, pale, **lobulated, solid and homogenous** testicular mass with bulging and potato like cut surface with attached and congested spermatic cord.
- Most important risk factor is **cryptorchidism** (undescended testicle) and ectopic testis.
- It has a relatively **good prognosis**, as it's very **radiosensitive**.
- No areas of hemorrhage or necrosis.



Microscope:

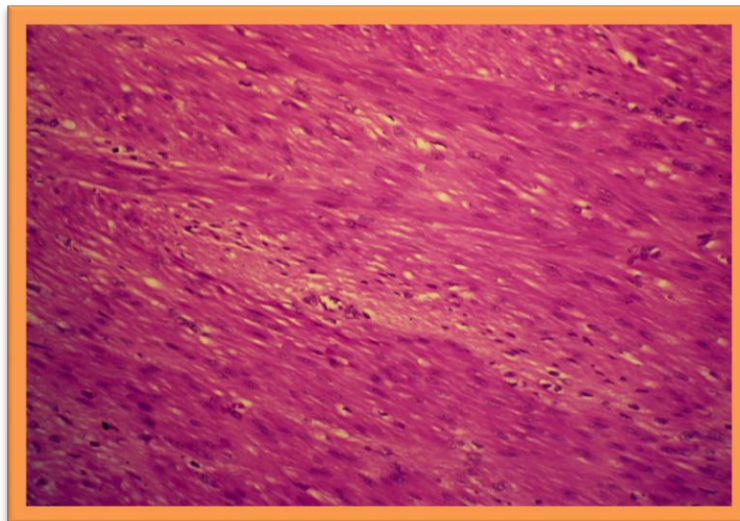
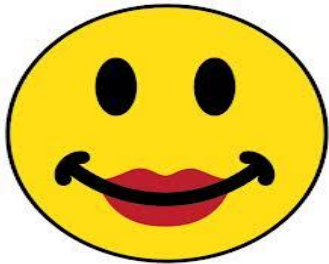
- A malignant tumour consisting of **sheets of uniform malignant germ cells** showing large **vesicular (pale) nuclei** and **prominent nucleoli**.
- The clusters of malignant cells are separated by **fibrous septae**
- **Lymphocytes** are infiltrating the septae and the tumor cells.

Uterine Leiomyoma



Gross: - Uterus showing **multiple pale and nodular** tumor masses with a **white, concentric and whorled (like cabbage)** cut surface.

-Intramural within the wall, subserosal bulging from outside.



Microscope:

- A well demarcated tumor mass in the muscle coat of uterus **without a definite capsule**.
- Benign tumor consists of **interlacing bundles of smooth muscle** and fibrous tissue.
- The muscle cells are spindle shaped with **elongated nuclei and eosinophilic cytoplasm**.
- No increase in mitosis, no atypia or pleomorphism, no necrosis to differentiate it from leiomyosarcoma

Clinical presentation:

Abdominal or pelvic pain – irregular bleeding – abdominal distention

Benign cystic teratoma of ovary

(Dermoid Cyst)

What is the different between hamartoma and teratoma?

Hamartoma is endogenous to that area where arise from belong to it, benign non neoplastic tissue while teratoma is neoplastic

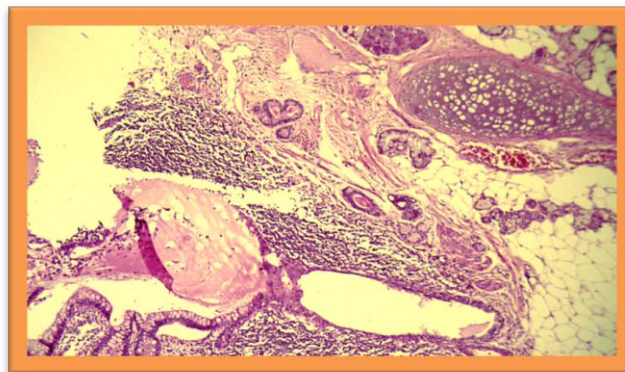


Mature tumors
are **benign** so
good
prognosis.

Gross:

- **Multi-loculated** cyst (Multiple cysts within one cyst like pocket), containing a ball of hair and **sebum**. (cheese-like material)
- Areas of white **calcifications**.

If there is a solid mass
and I take biopsy and
look blue round small
cells under microscope
so it is immature and
malignant .



Microscope:

- Stratified Squamous epithelium (ectoderm)
- Underlying appendages (sweatglands, sebaceous glands, hair follicles)(ectoderm)
- Columnar ciliated epithelium (endoderm), mucous and serous glands.
- Structures from other germ layers such as bone and cartilage(mesoderm)
- Lymphoid tissue, smooth muscle and large area of brain tissue containing neurons and glial cells (mesoderm)
- Embryological layer : 3 germ layer : ectoderm-endoderm-mesoderm

★ Fibroadenoma ★

Gross

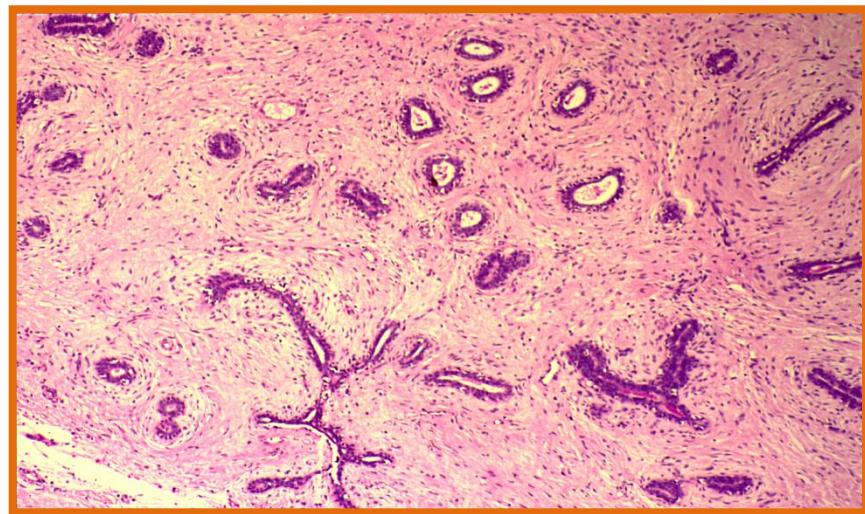
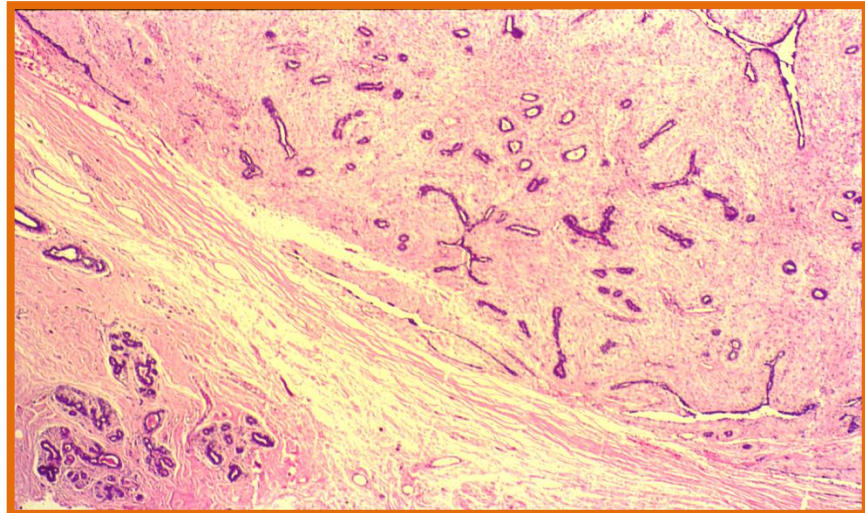
Why isn't it malignant?

1. Well circumscribed, lobulated and **slit like spaces**.
2. The cut surface is grey-white and **whorled**.
3. No hemorrhage or necrosis.



Microscopy

- Fibro adenoma is a benign tumor with **very good prognosis**
- *Section shows breast tumour:*
 - A tumour shows **proliferation of both glandular tissue and fibromuscular tissue (stroma) with myxomatous changes**.
 - Ducts lined by **two layers epithelium and myoepithelium**
 - Two patterns: **intra canalicular¹** and **pericanalicular²**
 - **Proliferation fibrous tissue** is invaginating the ducts causing elongation, compression and distortion of the ducts which have slit-like lumen (intra canalicular).
 - At places fibrous tissue is arranged around the ducts (pericanalicular) and does not invaginate.

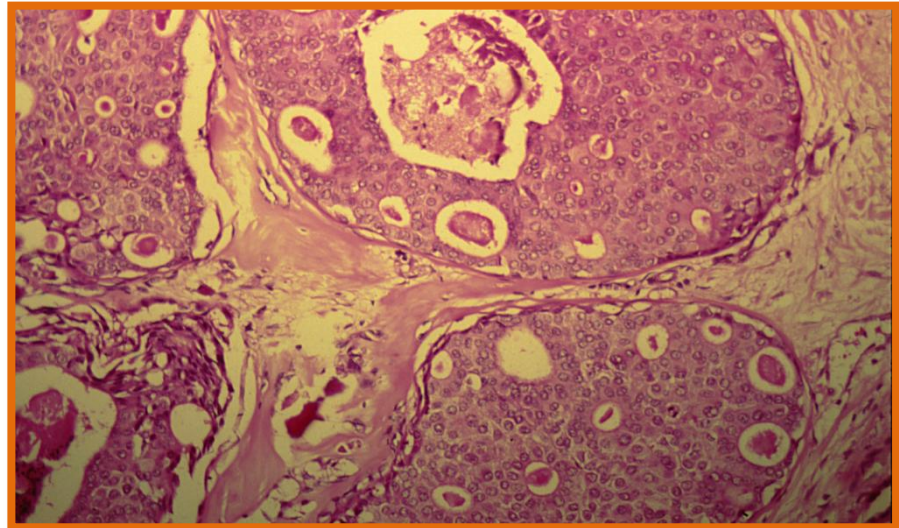
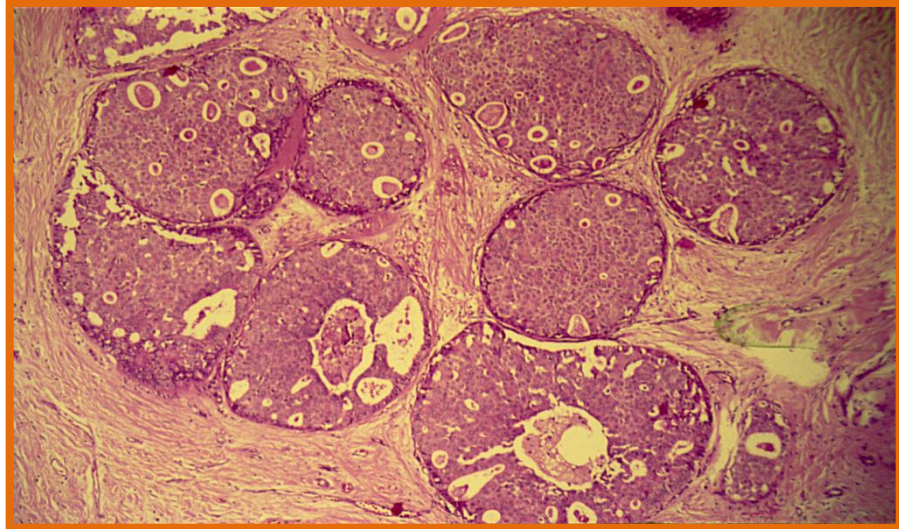


1. **intra canalicular** : fibrous growth **within** the lumen of the duct, and is distorting the shape of the duct
2. **pericanalicular**: fibrosis **around** the duct

Intraductal Carcinoma Of The Female Breast (in situ)

Microscopy

- Section of breast tumour shows
 - Large ducts are distended by neoplastic epithelial cells which are **pleomorphic** with large **hyperchromatic** nuclei and mitosis.
 - Cells are forming imperfect acini and shows a cribriform pattern.
 - Small groups of cells in the **center of many ducts are necrotic. (comedo necrosis means it is central necrosis)**
 - **No invasion of basement membrane** of the ducts outer layer is there myoepithilium.



Why is this microscopy an intraductal carcinoma?

1. No invasion.
2. Malignant cells are confined within the ducts.

What is the clinical presentation ?

The patient will present with **NO** mass, only with some calcification detected by mammogram.

How to manage such case (only intraductal) ?

Usually we only follow up the patient, or we can do mastectomy.

Stages to develop a cancer:

Atypical hyperplasia



Carcinoma in situ



Invasive carcinoma

★ Invasive ductal breast carcinoma ★



Gross

- Inverted or retracted nipple, with dimpling¹ of the overlying skin, giving peau d'orange² appearance (not clear in the picture).

- Fix irregular pale ill defined firm star shape mass.

1. **Dimpling**: depression or indentation in the skin surface
2. **peau d'orange**: skin of an orange



Types of carcinoma:

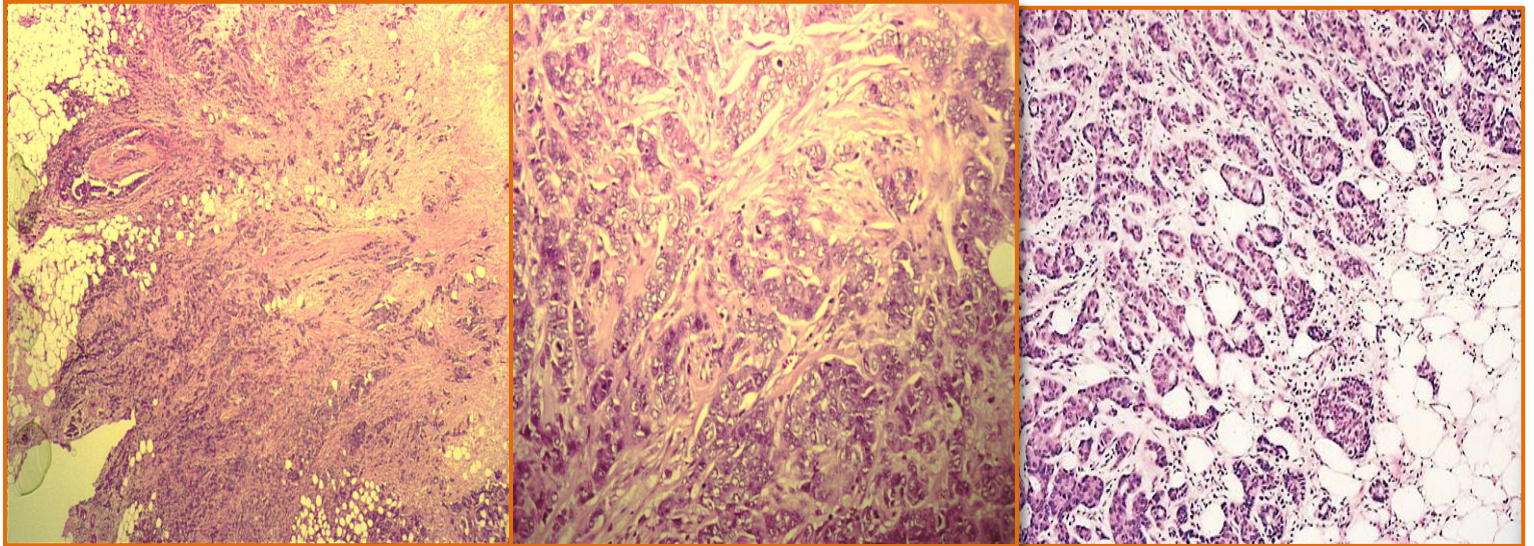
Lobular - papillary – medullary – inflammatory

Well-established risk factors are: ★

- Family history among first degree relatives.
- Proliferative breast diseases including atypical hyperplasia.
- Exogenous estrogens.
- Mutations affecting **BRCA1** and **BRCA2** genes.
- Ionizing radiation.

3. Invasive ductal breast carcinoma (cont.)

Microscopy



- **Invading malignant** breast epithelial cells showing focal **tubular** (gland-like) differentiation.
- Malignant **pleomorphic** breast epithelial cells are **invading fibro-fatty mammary tissue**.
- Cord, sheets and nests of tumor cells surrounded by dense fibrous tissue stroma containing scattered lymphocytes.
- Tumor cells are round to polygonal with hyper chromatic nuclei and occasional mitoses.
- Tumor cells are **invading breast adipose tissue**.
- Few tumor cells from **duct-like structures**.

What is the prognosis?

It has a bad prognosis, depending on the lymph nodes involved.



4. Paget's disease of nipple

Gross

- Fungated, ulcerated erythematous lesion on the nipple
- Eroded nipple. What does that signify?
 - Look for any masses in that patient's breast because eroded nipple (Paget's disease) always comes with **invasive ductal carcinoma**



FIGURE 2: Erythematous, scaly, crusted lesion on the left breast

Microscopy

- Section of breast and skin shows:
 - Ulceration and invasion of **epidermis (squamous epithelium)** by ductal carcinoma cells (Paget cells), present between **basal** cells in elongated rete pegs.
 - Paget cells are **large**, anaplastic cells having pale cytoplasm, hyperchromatic nuclei with occasional mitoses.
 - Paget cells are present either singly or in small groups of two or three surrounded by a clear zone or halo.
 - **Deeper tissue** shows **intraductal proliferation** of neoplastic epithelial cells.

