

Cases:

- 1- Prostatic Hyperplasia
- 2- Seminoma of the testis
- 3- Multiple leiomyoma
- 4- Dermoid cyst of the ovary
- 5- Fibroadenoma
- 6- Intraductal Carcinoma
- 7- Invasive Ductal Carcinoma
- 8- Paget's disease

Pathology

Practical



432 Pathology Team

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Reproductive Block



Mind Map

Male genital system

- 1-Prostatic hyperplasia (BPH)
- 2-Seminoma of the testis

Female genital system

- 3-Multiple leiomyoma
- 4-Dermoid cyst of the ovary
- Breast**
 - 5-Fibroadenoma
 - Carcinoma of the breast**
 - 6-Intraductal Carcinoma
 - 7-Invasive Ductal Carcinoma
 - 8-Paget's disease

***** We have to remember for each case:
2 Gross & 3 Microscopic findings

(1) Benign Prostatic Hyperplasia (BPH)

Gross Features:

- 1) **Enlarged Prostate gland.**
- 2) **Multiple nodules in prostate gland.**

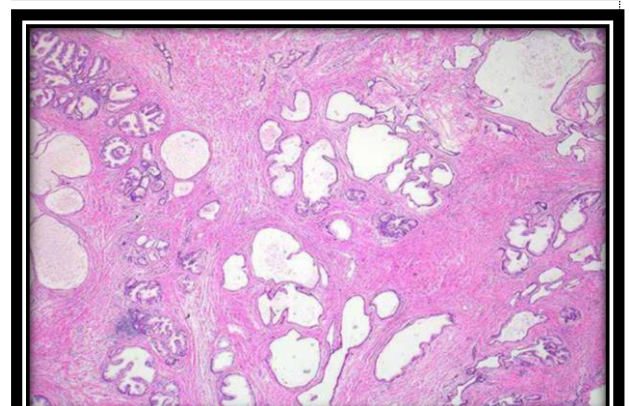
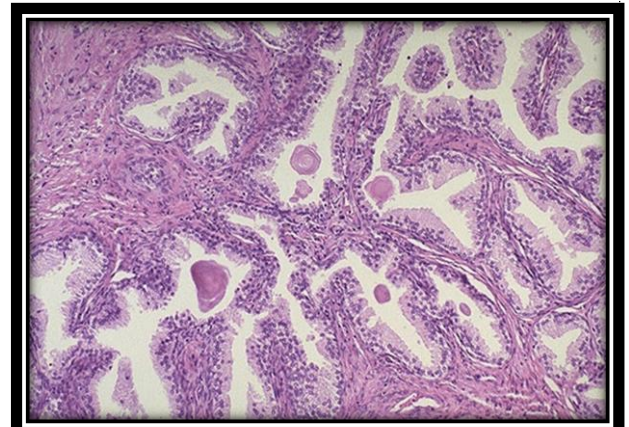
Important

- Which Hormone is involved in BPH?
Testosterone-DHT "Diethylhydroxy Testosterone".
- From Which zone of the prostate the biopsy is taken usually?
Transitional zone (Prostate weighs 60-100)



Histopathological Features:

- 1) **Fibromuscular hyperplasia of stroma and glands.**
- 2) **The glands are lined by two layers, columnar and cuboidal cells.**
- 3) **Corpora amylacea is present in some glands.**
- 4) **Focal chronic inflammatory cell infiltration.**



NOTES

- The pathogenesis of BPH is related to increased sensitivity and stimulation by Testosterone (DHT)
- The clinical presentation is: Acute Urinary Retention. And treated by: Catheterization
- Surgical treatment is recommended.

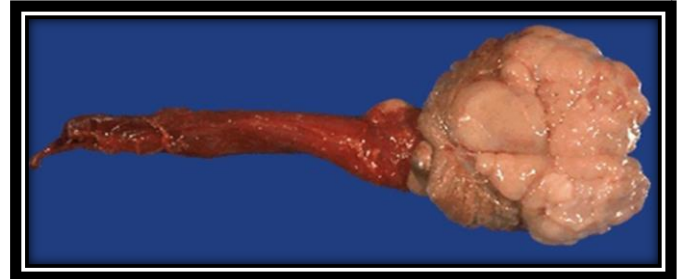
(2) Seminoma of the Testis

Malignant germ-cell tumor.

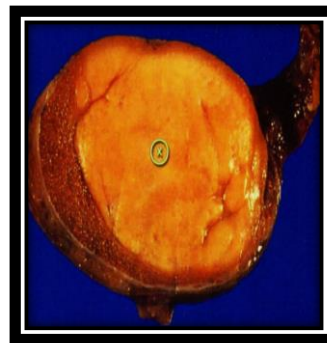
Most important risk factor is cryptorchidism (undescended testicle).

Gross Features:

- (A) 1- Lobulated testicular mass.
2- Whitish and Potato-like cut surface.
3- Congested spermatic cord.



- (B) Circumscribed testicular mass with areas of necrosis and haemorrhage.



- (C) Pale and lobulated testicular mass.
Congested spermatic cord.

NOTES

- Predisposing Factors:-

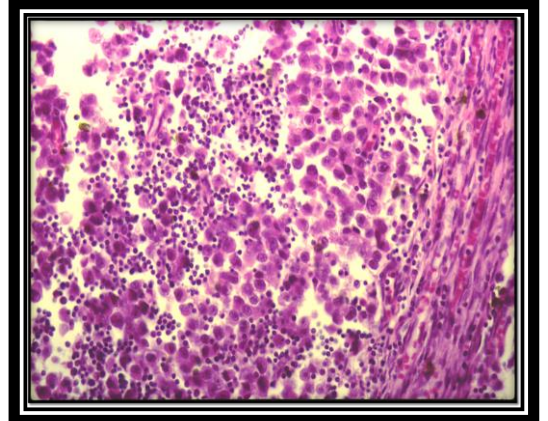
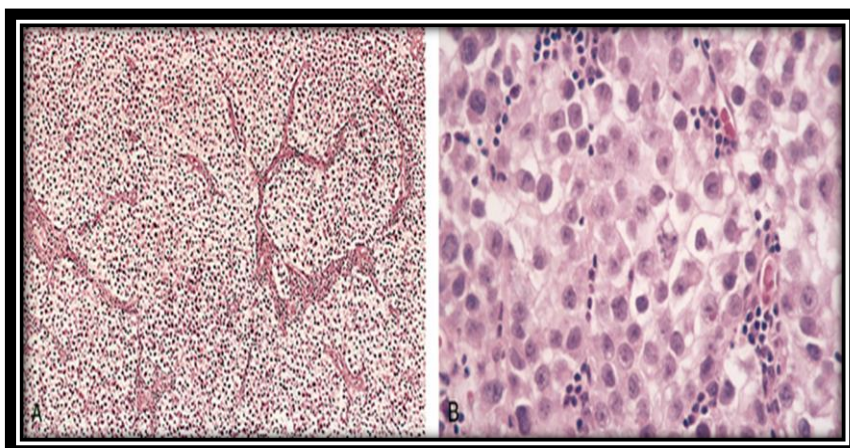
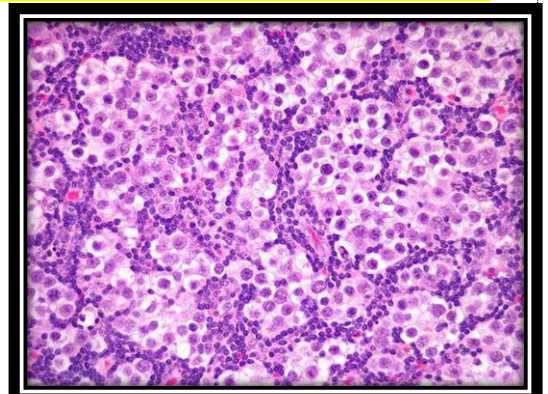
Undescended testis & Ectopic testis

- Prognosis:-

Very good prognosis because it is radio-sensitive, Seminoma is positive for PLAP

Histopathological Features:

- 1) Sheets of uniform germ cells tumor "atypical" that has large vesicular nuclei and prominent nucleoli & clear cytoplasm.
- 2) Lymphocyte infiltration with foci of necrosis.

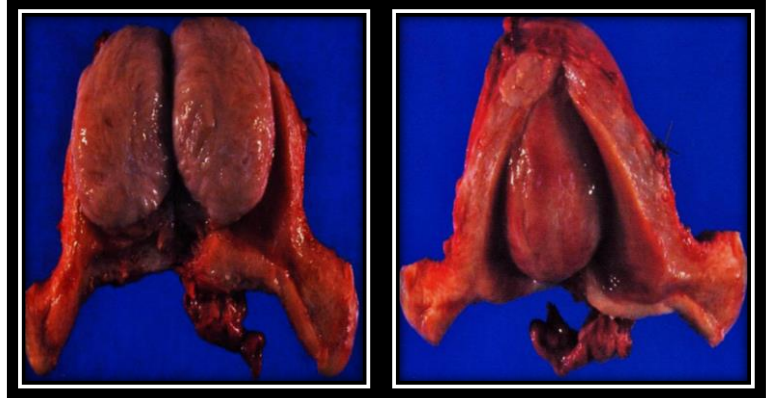


(3) Multiple leiomyoma

Benign Tumor of the smooth muscle cell of the uterus. Estrogen responsive & no risk of malignancy.

Gross Features:

(1)(2) Well demarcated tumor mass within the cavity of the uterus without a definite capsule.



(3) **Multiple well circumscribed nodules**, some subserosal and other intramural (inside the cavity). **Whitish and whorled cut-section.**

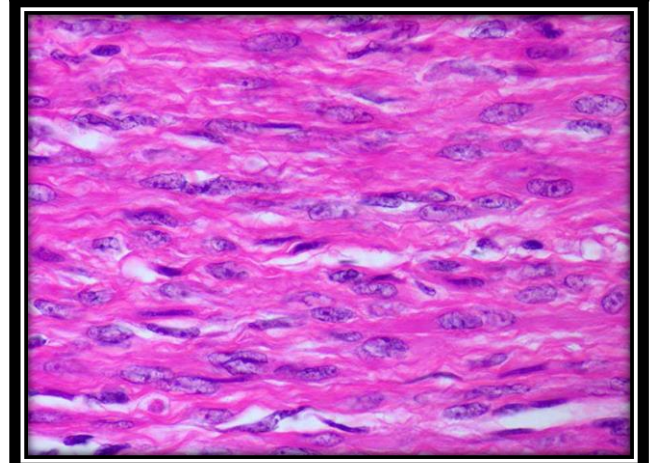
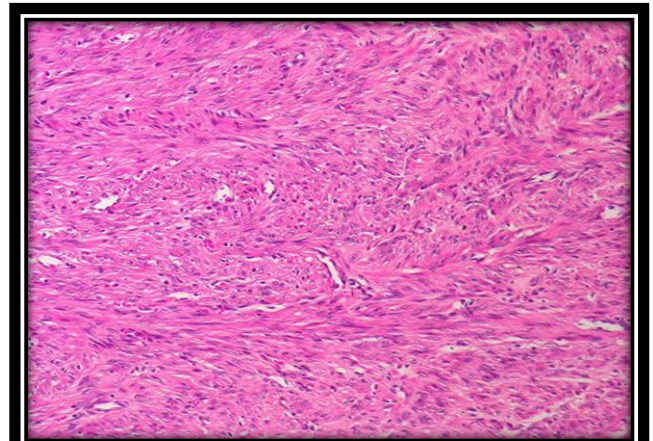


Histopathological Features:

(A) Low power: Tumor consists of **interlacing bundles of smooth muscle and fibrous tissue.**

(B) High power:-

- The muscle cells are **spindle shaped with elongated nuclei and eosinophilic cytoplasm .**
- **No increase in mitosis and necrosis.** (This's what distinguishes it from leiomyosarcoma "Malignant").



NOTE

Very good prognosis if excised.

(4) Dermoid cyst of the ovary

- **Benign (Mature) teratoma**, and it's diagnosed by the present of 3 embryonic layers: (Endo, Meso, and Ectoderm).
- Immature teratoma is malignant, and could be a complication for benign teratoma.

Gross Features:

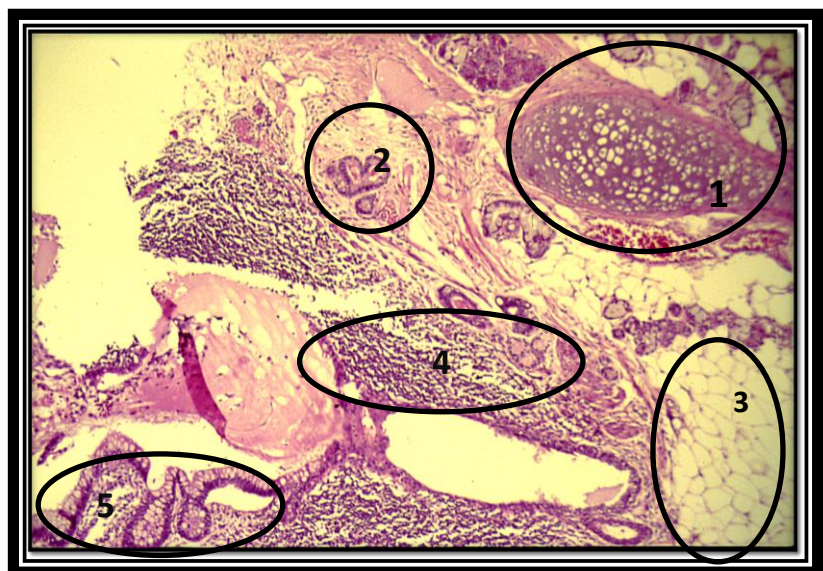
- (1) **Ovarian cystic neoplasm "multi-loculated"**.
- (2) **Ball of hairs**.
- (3) **Calcification and cyst wall thickening**.
(Features of benign\mature teratoma).
- (4) **Ovarian cyst containing teeth and hairs with nail tissue and skin**.



NOTES

- May be complicated by torsion, infarction, infertility.
- Serology of hCG used for diagnosis Ultra-sound Also used.

Histopathological Features:



Section shows:

- (1) Keratinized squamous epithelium.
- (2) Hair follicles.
- (3) Brain tissue.
- (4) Connective tissue.(not in the pic)

Section shows:

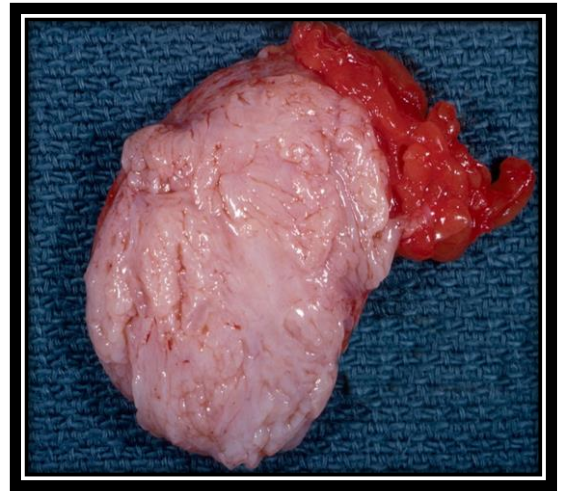
- (1) Cartilage.
- (2) Salivary glands.
- (3) Fat.
- (4) Lymphoid tissue.
- (5) Intestinal epithelium.

(5) Fibroadenoma

Fibroadenoma has a benign behavior with good prognosis.

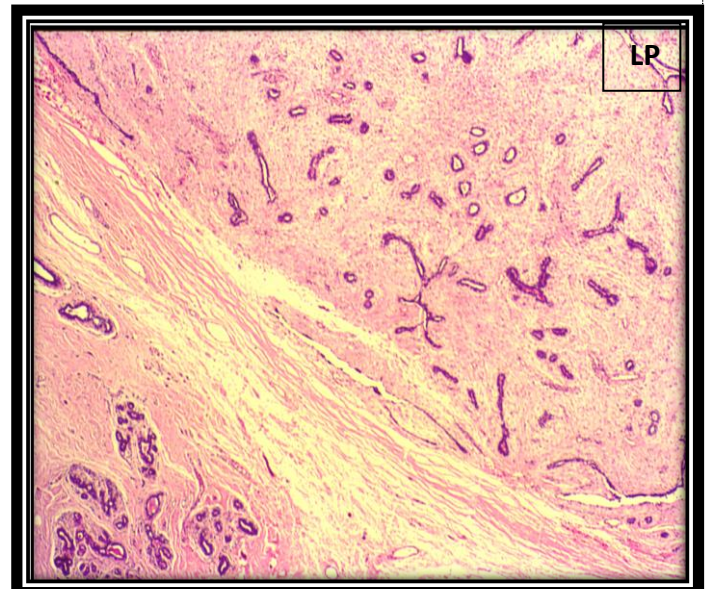
Gross Features:

- 1) **Fibrotic Well** circumscribed mass in the breast.
- 2) **Bulging white mass** arising from the breast.
- 3) The cut surface is lobulated with **slit-like spaces**.



Histopathological Features:

- 1) **Proliferation of ducts and stroma.**
- 2) The ducts are **compressed by fibromyxoid stroma** causing **slit-like lumen**.
- 3) 2 patterns:
 - A- (**intracanalicular**) slit-like lumen.
 - B- (**pericanalicular**) not invagination.

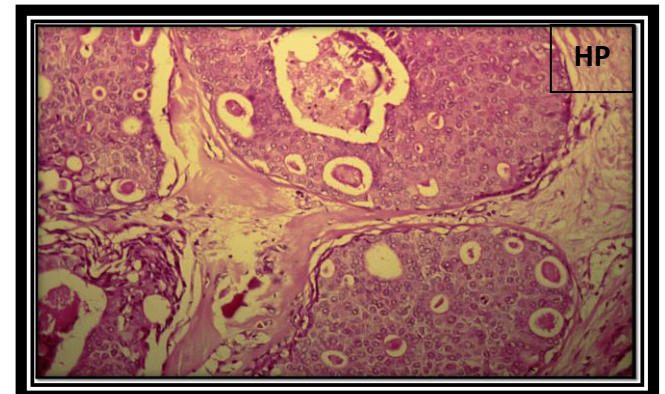
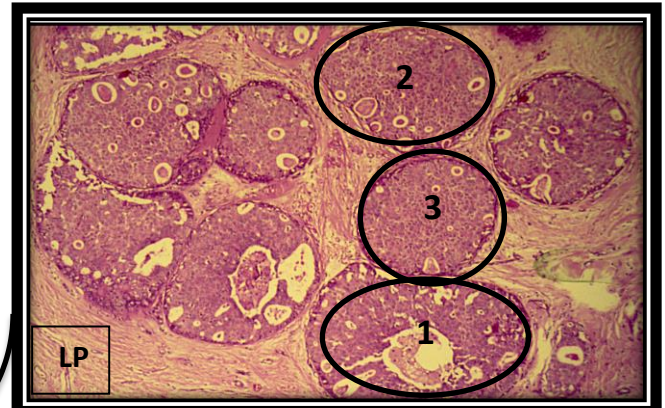


(6) Intra-ductal Carcinoma (DCIS)

Histopathological Features:

- Large ducts are distended by neoplastic epithelial cells which are pleomorphic with large hyperchromatic nuclei and mitosis.
- Small groups of cells in the center of many ducts are necrotic.
- No invasion of basement membrane of the ducts (in-situ).

TYPES
1- Comedo
2- Cribriform
3- Solid



Carcinoma of the breast

Clinical picture:

- (1) Breast cancer showing an **inverted nipple**, with **underlying lump** (breast mass) and **skin dimpling**.
- (2) Cut section of the breast showing **ill-defined pale and firm nodule** with overlying **retracted nipple** and surrounding skin.
- (3) **Whitish mass is infiltrating and extend to the nipple**

* (The two gross pictures are examples of invasive carcinoma).



(7) Invasive-ductal Carcinoma

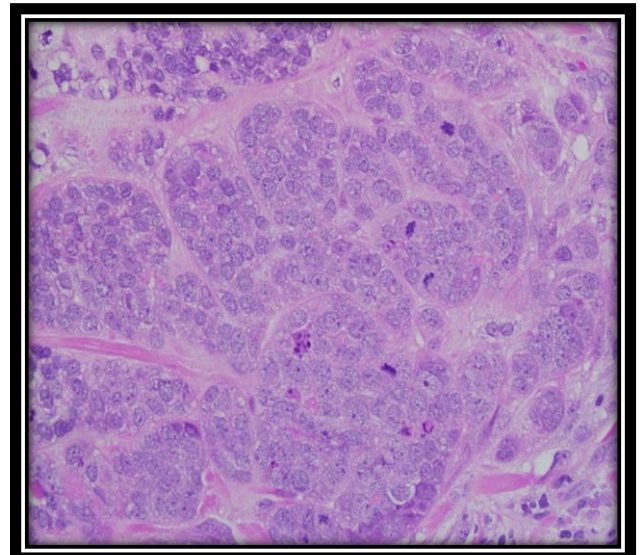
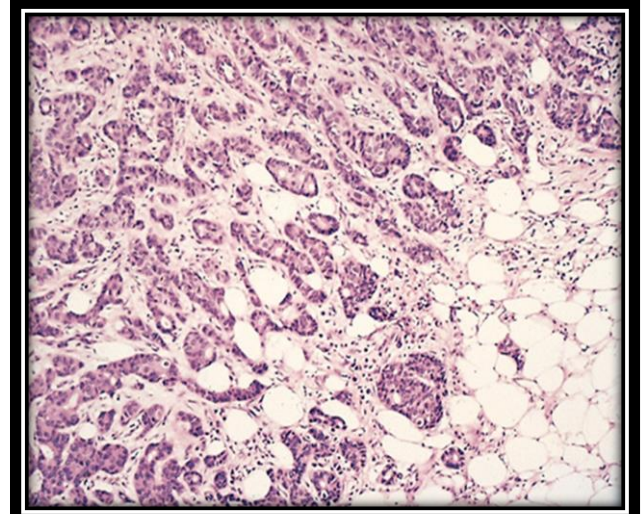
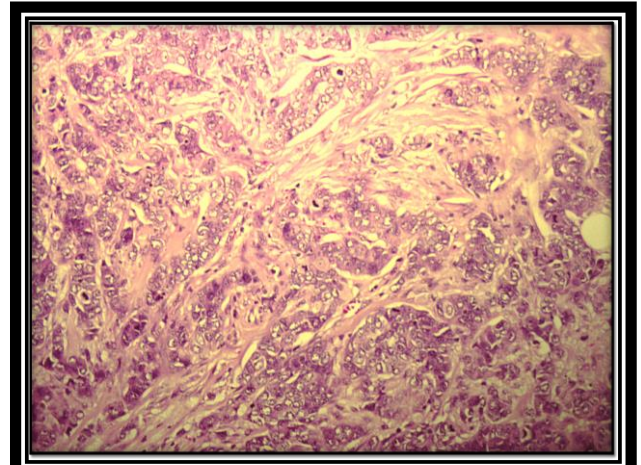
NOTE

Invasive Carcinoma grading depends on three criteria:

- 1- Nuclear size: Small (I), Medium (II), Large (III)
- 2- Tubular formation: > 75% (high) (I), 25-50% (II), < 25% "Minimal" (III)
- 3- Mitosis: Low (I), Medium (II), High "Prominent" (III)

Histopathological Features:

- **Sheets of malignant cells and tubules with signs of invasion.** (Breakdown of the B.M).
- Tumor cells are invading breast adipose tissue with signs of tubular formation.
- High grade (Grade III) invasive ductal carcinoma, with **minimal tubule formation**, marked pleomorphism, and **prominent (high) mitoses**.



(8) Paget's disease

Familial cases of breast cancer are associated with mutations in **BRCA 1 and BRCA 2** genes and affected patients are also prone to develop ovarian carcinoma

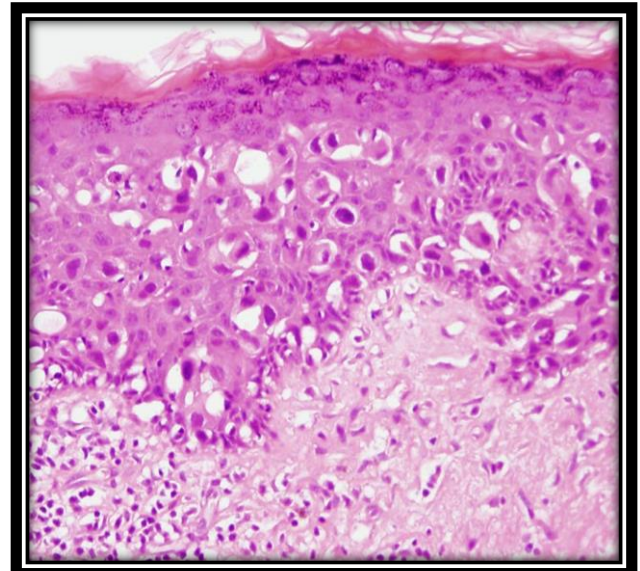


Gross Features:

- The skin is **erythematous**.
- Scaly/crusted lesion resembling dermatitis (eczema).

Histopathological Features:

- Malignant cells (Paget's cells) **invade the epidermis**.
- Paget cells are large, anaplastic cells having **pale cytoplasm, hyperchromatic nuclei with occasional mitoses**.
- Paget's cells are surrounded by clear zone (**Peri-nuclear halo**).



NOTES

- The cells are positive for Mucin.
- Chance If a patient has Paget's disease so the chance of having a serious breast cancer is 50-60%.
- Paget's seen in DCIS & Invasive Ductal Carcinoma.

Summary

Case	Gross	Histopathology
1 Prostatic hyperplasia	1- Enlarged Prostate gland. 2- Multiple nodules.	1- Fibromuscular hyperplasia of stoma and glands. 2- Two lining layers: columnar and cuboidal. 3- Corpora amylacea.
2 Seminoma of the testis	1- Lobulated. 2- Whitish and Potato-like cut surface.	1- Atypical germ cells. 2- Prominent nucleoli. 3- Lymphocyte infiltration.
3 Multiple leiomyoma	1- Multiple well circumscribed nodules. 2- Whorled cut-section.	1- Interlacing bundles of smooth muscle and fibrous tissue. 2- No increase in mitosis and necrosis.
4 Dermoid cyst of the ovary	1- Multi-loculated cyst. 2- Calcification. 3- Ball of hairs.	According to the provided picture. Refer to page (5).
5 Fibroadenoma	1- Well circumscribed mass. 2- Lobulated and slit-like spaces.	1- Proliferation of ducts and stroma. 2- Two patterns: intracanalicular - pericanalicular.
6 Intra-ductal Carcinoma (DCIS)	----	1- Neoplastic epithelial cells 2- Hyperchromatic nuclei and mitosis. 3- No invasion of basement membrane.
* Carcinoma of the breast	1- Retracted nipple. 2- Skin dimpling.	----
7 Invasive-ductal Carcinoma	----	1- Nest of malignant cells. 2- Invasion of surrounding stroma. 3- Prominent (high) mitoses.
8 Paget's disease of the nipple	1- Skin is erythematous. 2- Scaly/crusted lesion.	1- Hyperchromatic cells with Clear cytoplasm. 2- Peri-nuclear halo.



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432 Pathology Team

Good Luck ^_^

اللهم إني استودعك ما قرأت و ما حفظت و ما تعلمت فرده علي عند حاجتي إليه انك على كل شيء قدير

If there is any mistake or feedback please contact us: 432PathologyTeam@gmail.com