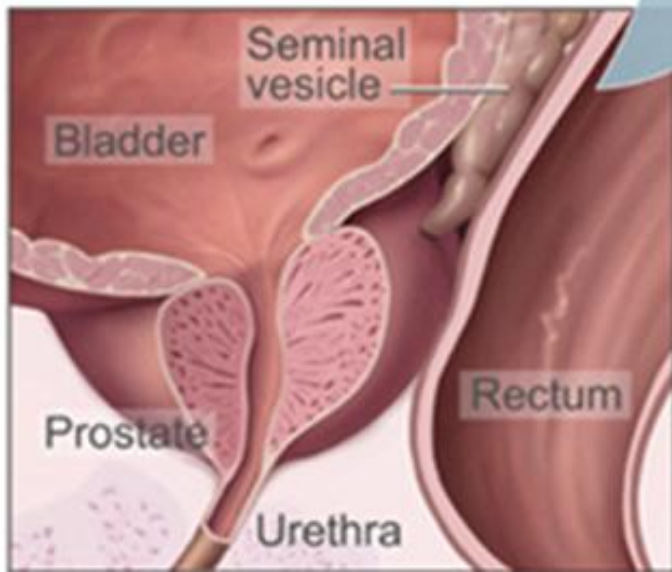


This shows the prostate and nearby organs.



MALE GENITAL SYSTEM, LECTURE 1 PROSTATE

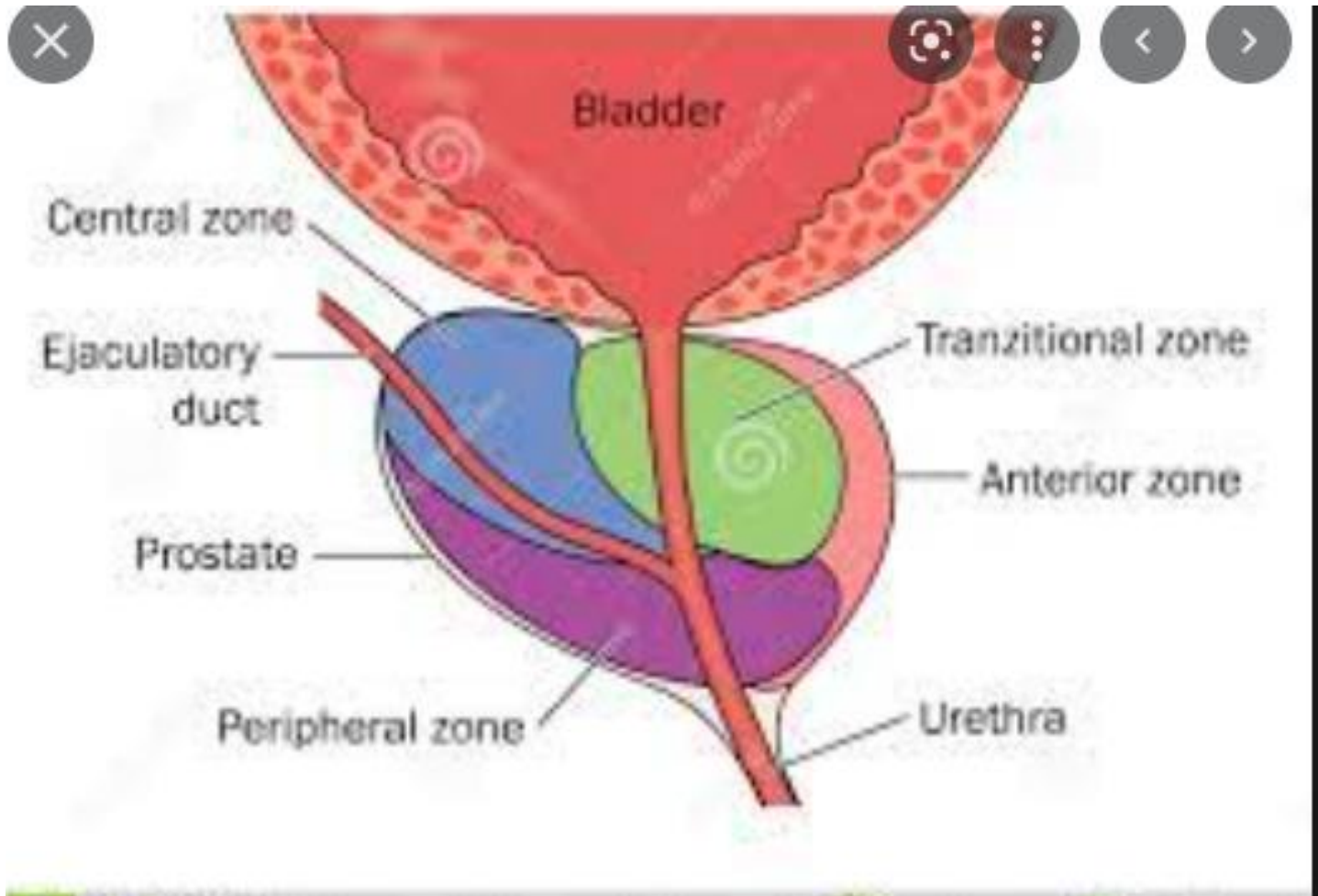
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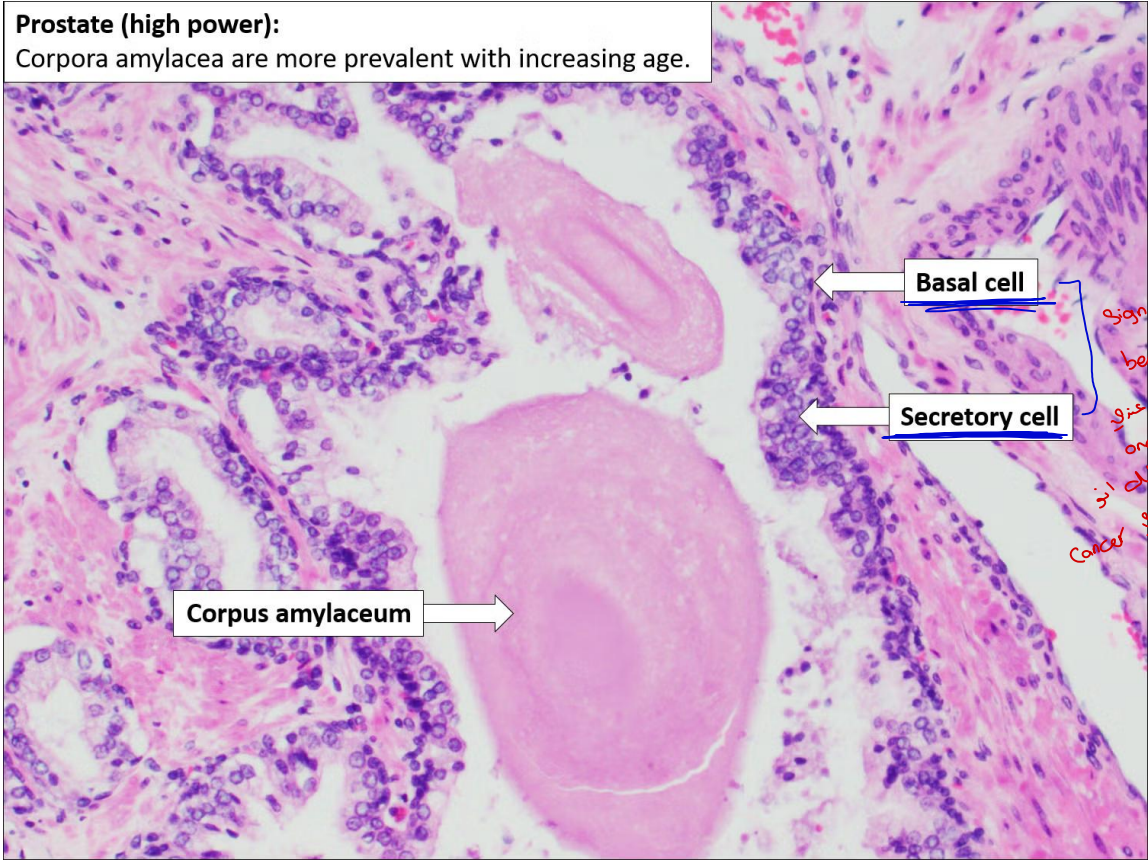
UGS LECTURES 2026



can be divided into biologically distinct regions, the **most important** of which are the **peripheral** and **transition** zones.

associated with specific pathologic condition

Prostate (high power):
Corpora amylacea are more prevalent with increasing age.



Prostate— Histology

Normal prostate contains glands with two cell layers, a flat basal cell layer & an overlying columnar secretory cell layer.

Surrounding prostatic stroma contains a mixture of smooth muscle and fibrous tissue.

اي اشي اخذناه في المحاضرات السابقة
يمكن يحدث في Prostat

Prostate can be affected mainly by:

❖ Hyperplastic lesions

- Most arise in inner transition zone.
- Causes urinary obstruction.^{عقبة}

❖ Carcinomas

- 70%–80% arise in peripheral zones.
- Often detected by rectal examination

BENIGN PROSTATIC HYPERPLASIA

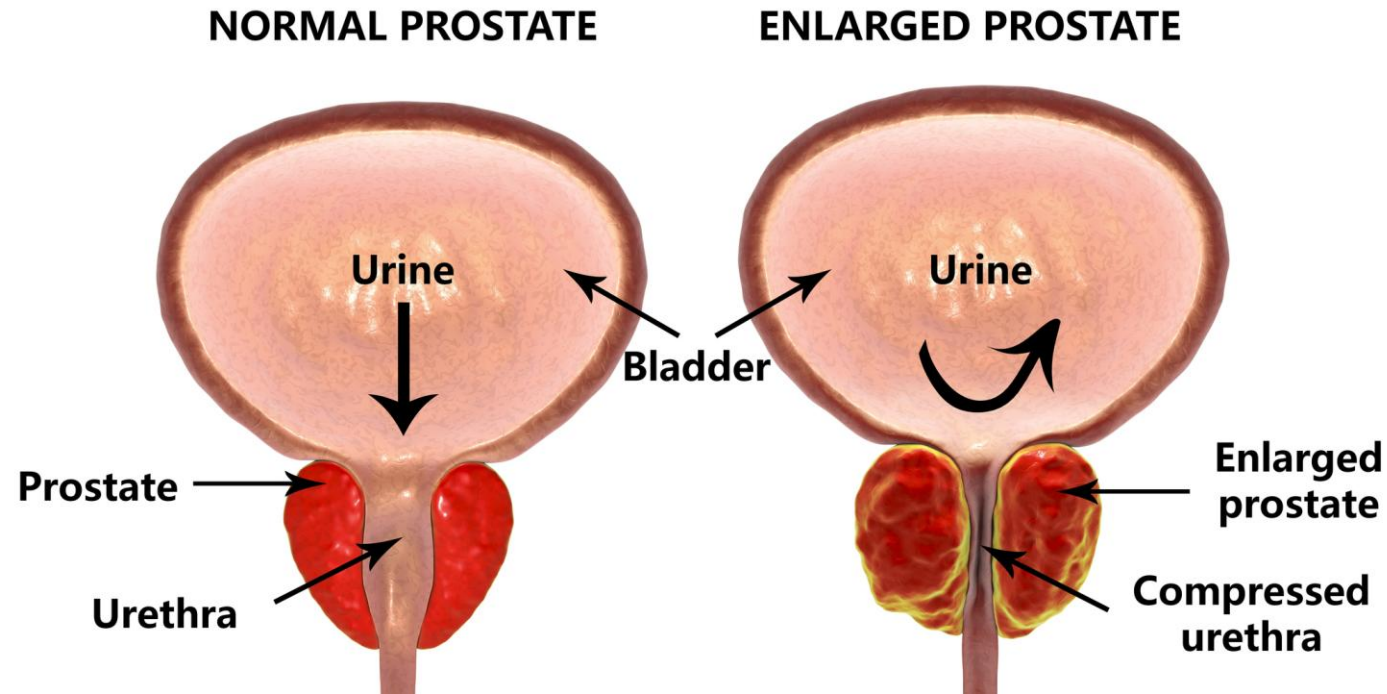
1. Benign Prostatic Hyperplasia

An extremely **common cause of prostatic enlargement** by the **age of 40 years**.

An **important cause of urinary obstruction**.

Although the cause of BPH is **incompletely understood**, excessive **androgen-dependent growth of stromal & glandular elements** has a **central role**.

Does not occur in males castrated **before the onset of puberty**.



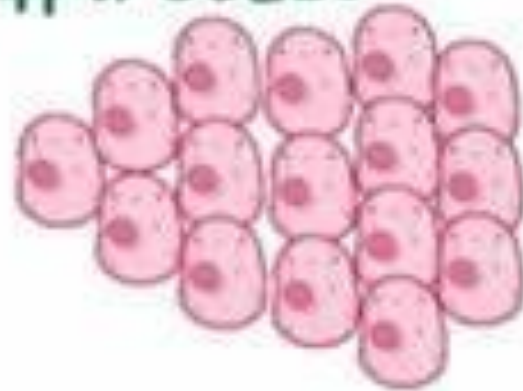
BENIGN PROSTATIC HYPERPLASIA (BPH)

CELLS AREN'T
MALIGNANT

PROSTATE
GLAND



↑ # of CELLS

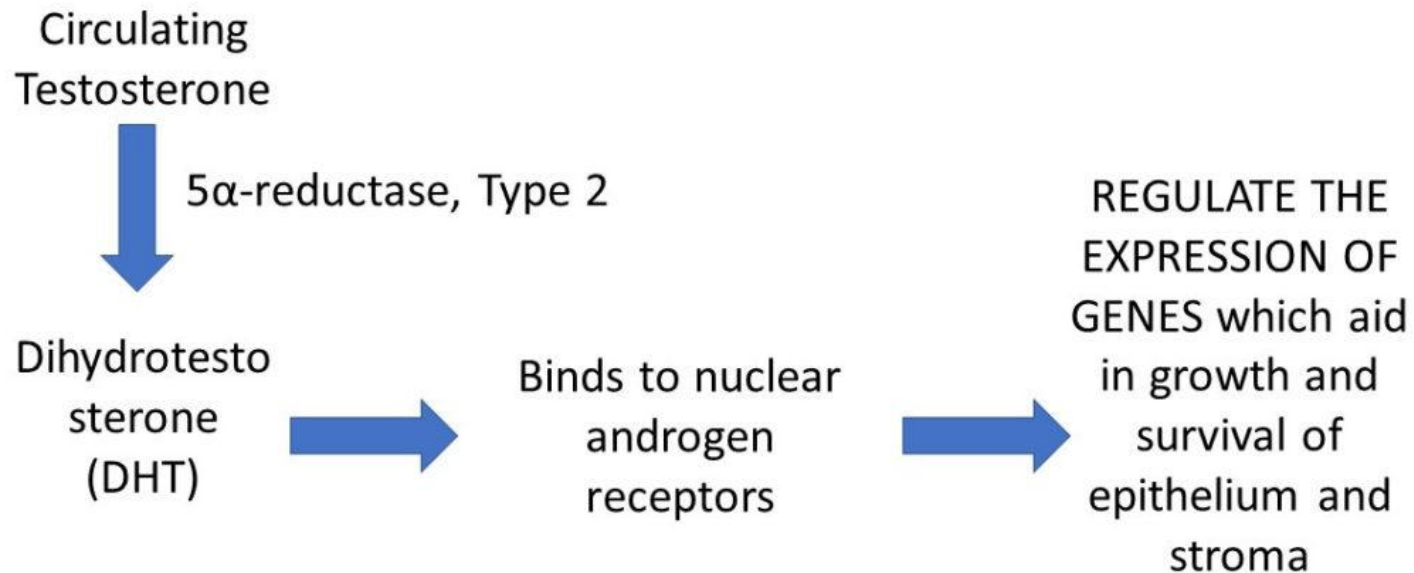


*increase in
cell + stroma
in the same time*

* COMMON in **MEN OVER 50**

* OFTEN CONSIDERED a NORMAL PART of AGING

Pathogenesis of BPH



Pathogenesis

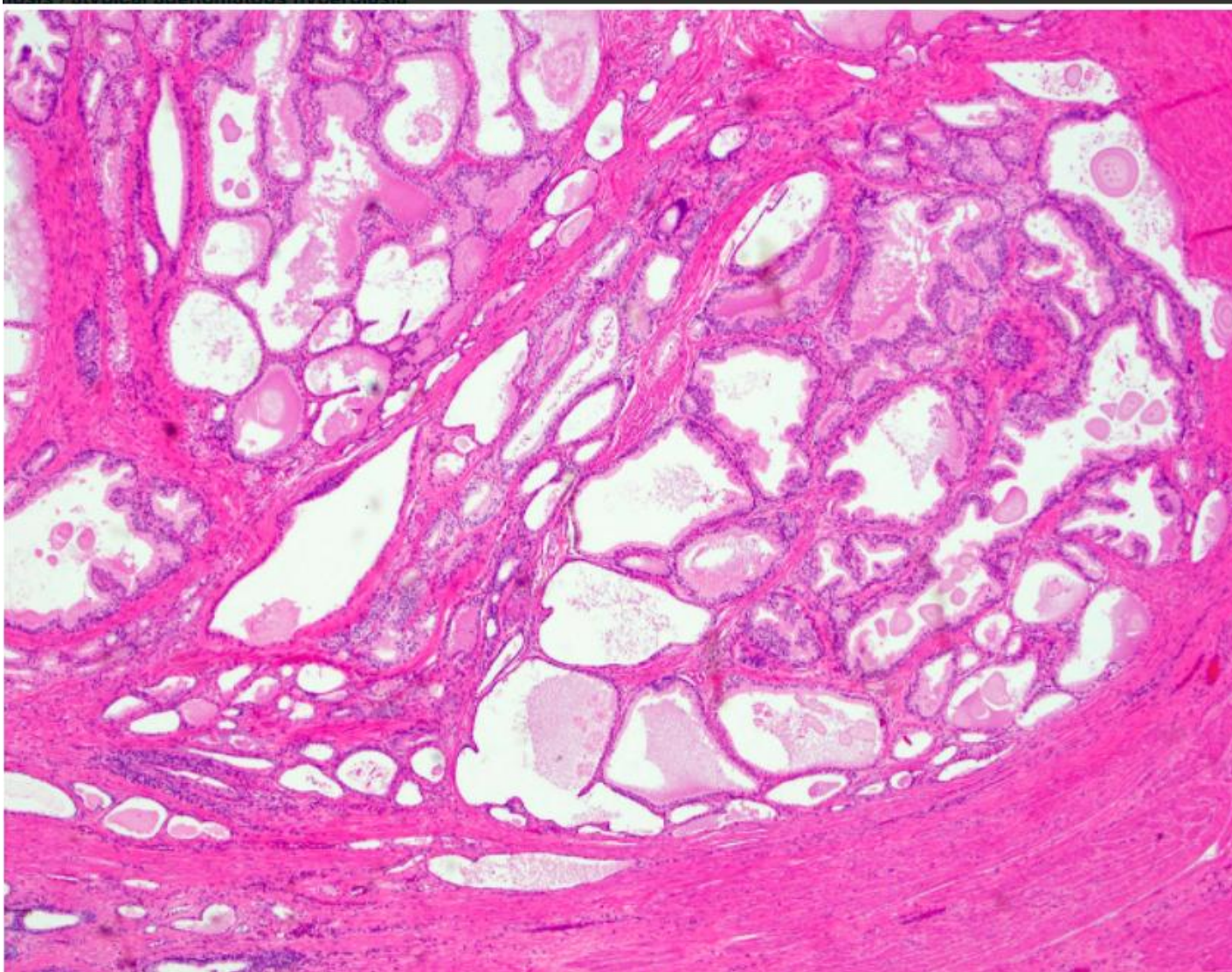
DHT(Dihydrotestosterone)- induced growth factors act by increasing the proliferation of stromal cells & decreasing the death of epithelial cells.



Macroscopic

Benign prostatic hyperplasia **nodules**
around the urethra bulge
above the cut surface in a cross section
of the prostate gland.

White Cut Surface → Benign
HP
Yellow " " → Carcinoma



Microscopic

Epithelial hyperplasia is characterized by nodular lesions composed of variably sized glandular structures lined by basal and secretory cells

عندى
normal
hyper
الغدد
الطبيعية
الحجم

Clinical Features

❖ Symptoms:
(occur in only 10% of cases) and include:

• urgency,

• frequency,

• nocturia.

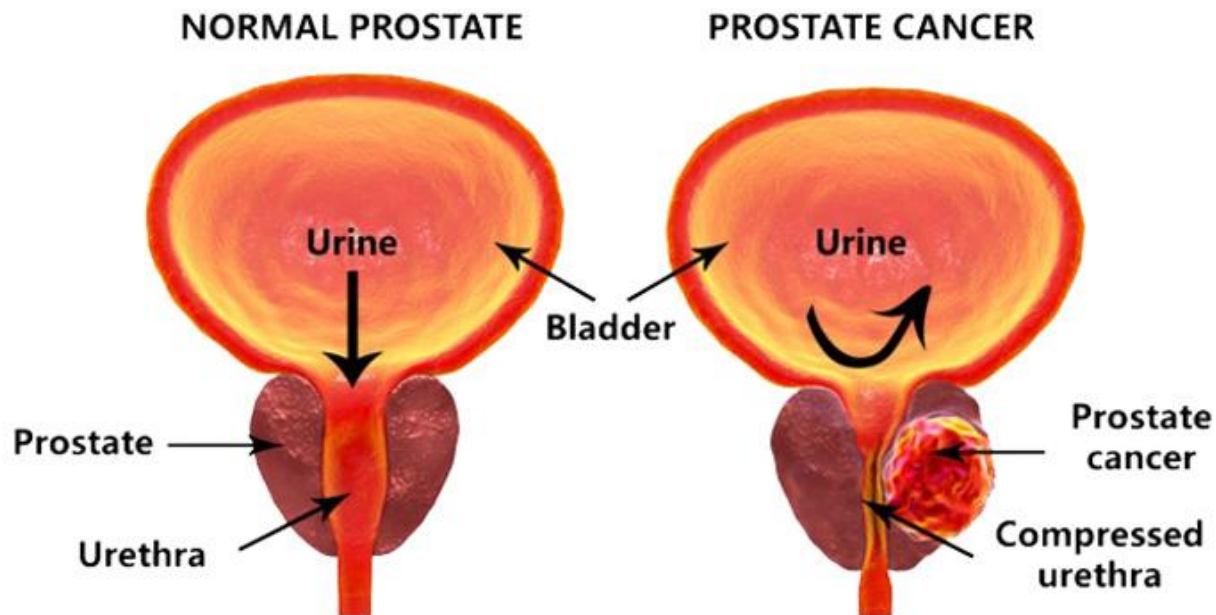
+ ↑ risk of urinary tract infections.

Tx : + Initial pharmacologic; agents inhibit formation of DHT.
+ Surgical treatment for severely symptomatic cases &/or
resistant to medical (Transurethral resection of the prostate
(TURP)).

بداية في
needle →

Carcinoma of the Prostate

PROSTATE CANCER

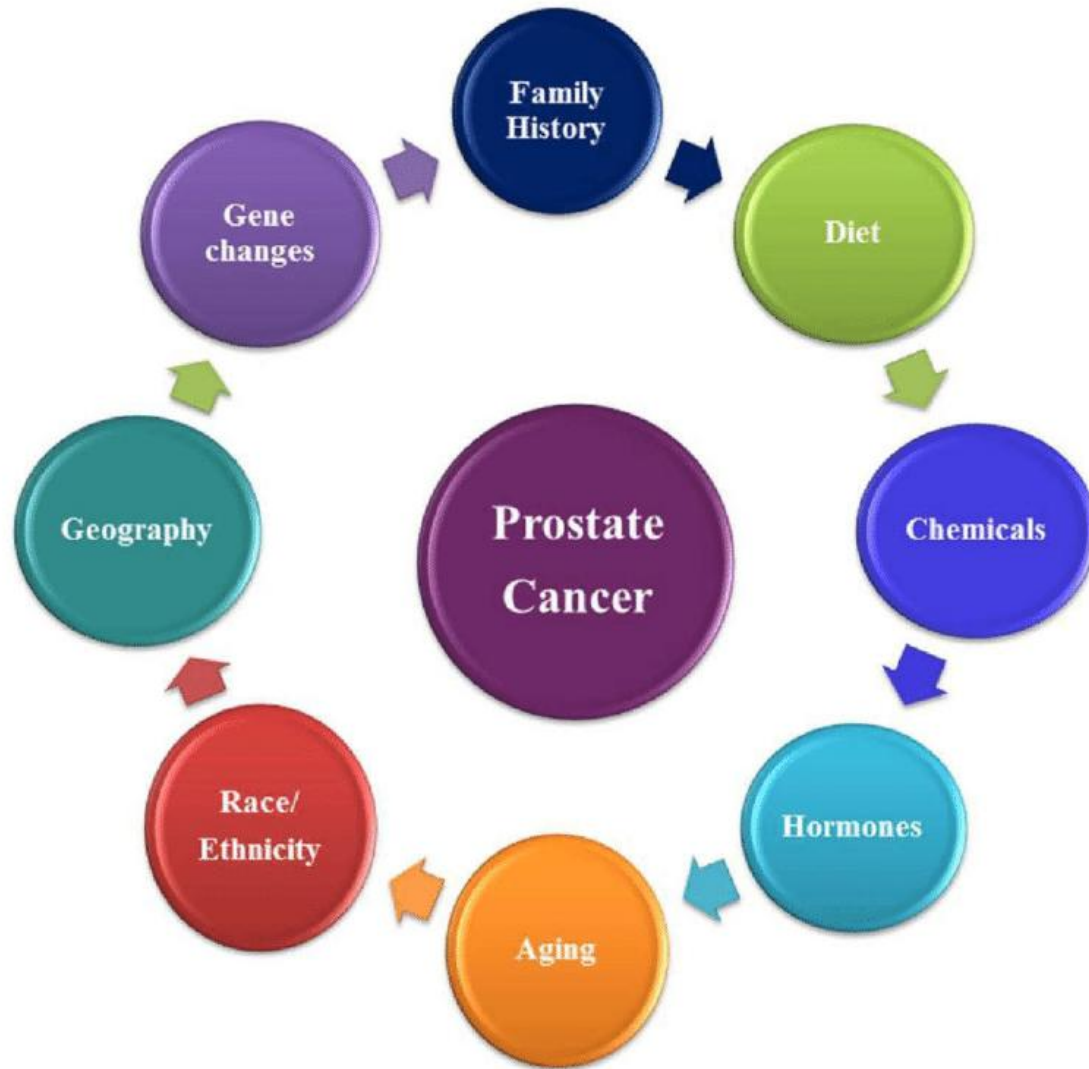


Adenocarcinoma of prostate is the most common form of cancer in men.

Age: older than 50 years.

Significant drop in prostate cancer mortality → increase detection of disease through screening.

Prostatic specific antigen PSA



Pathogenesis

Androgens: are of **central importance**; evident by

- Cancer of the prostate doesn't develop in males **castrated before puberty**.
- Cancers often regress for a time in response to surgical or chemical castration.

Heredity.

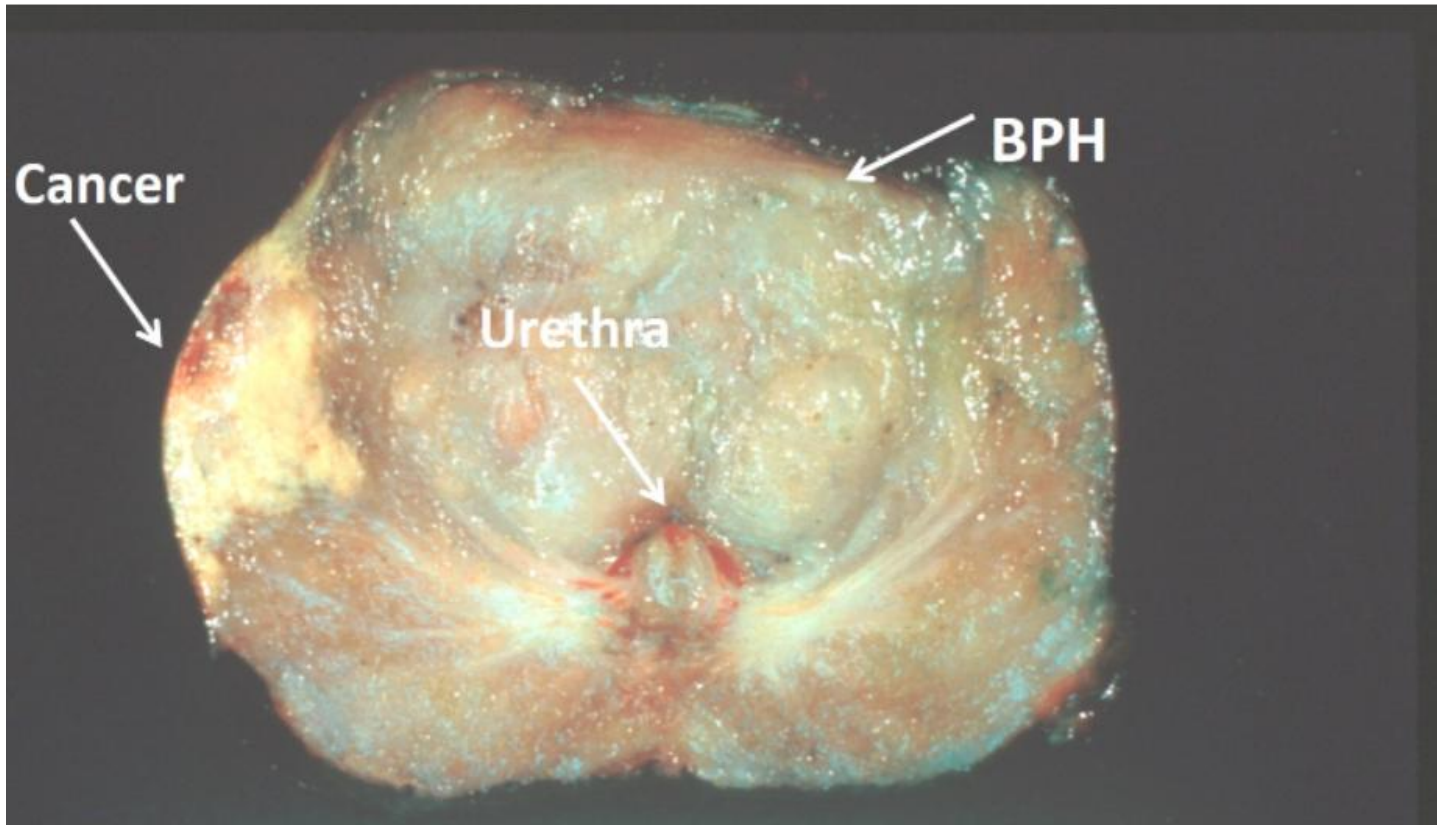
Environment:

- **geographical variations** that may be due to **dietary variations**.

Acquired somatic mutations:

- **+ TMPRSS2-ETS fusion genes are found in ~ 50% of cases.**

نفسه

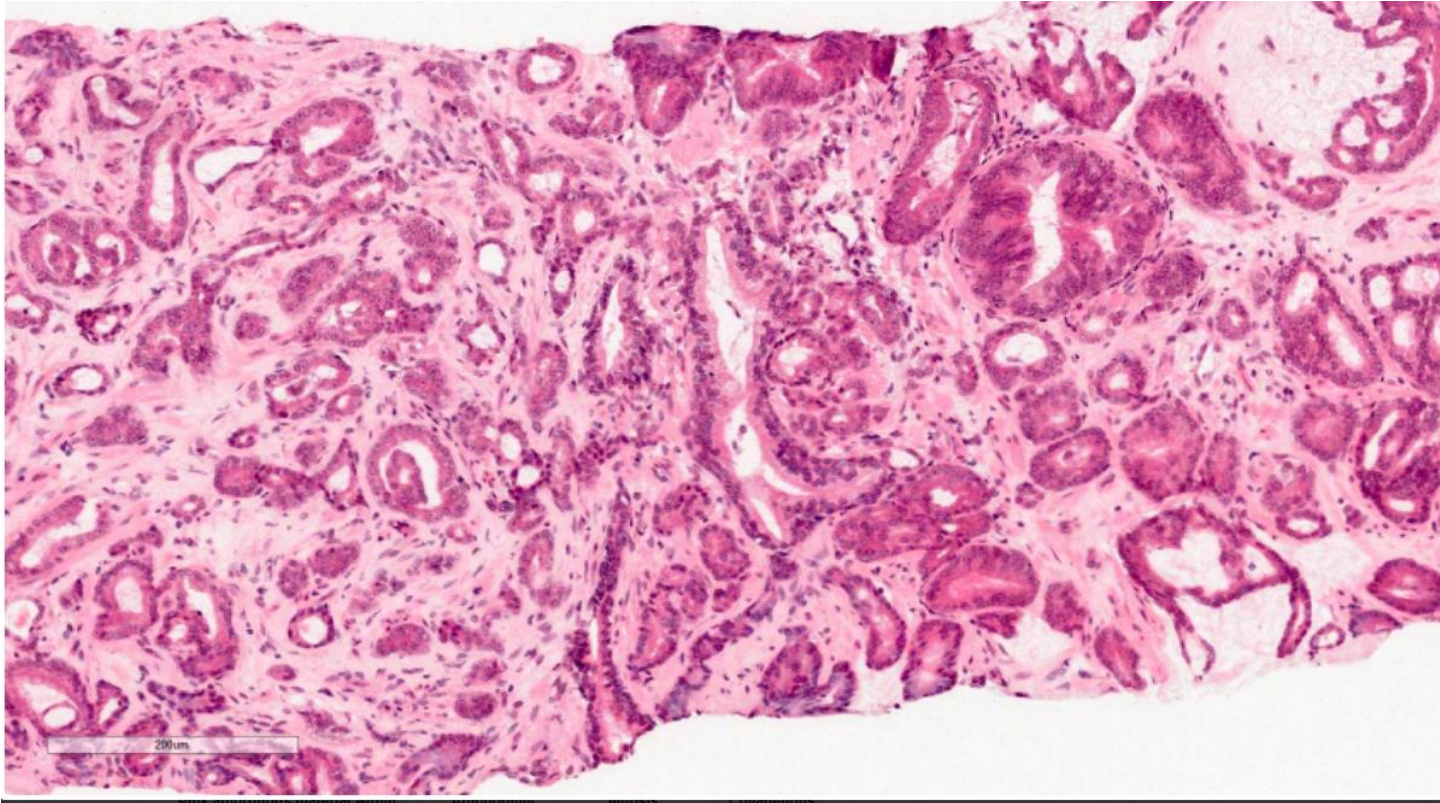


Morphology

GROSS: firm, gray-white lesions with ill-defined margins. *yellow color*

Most tumors are multifocal.

75 - 80% are posterior / posterolateral peripheral zone

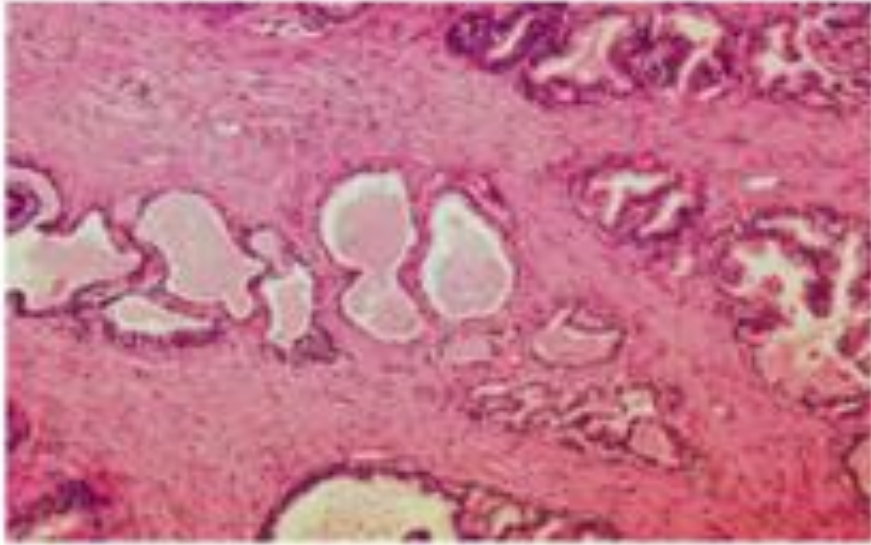


Microscopically

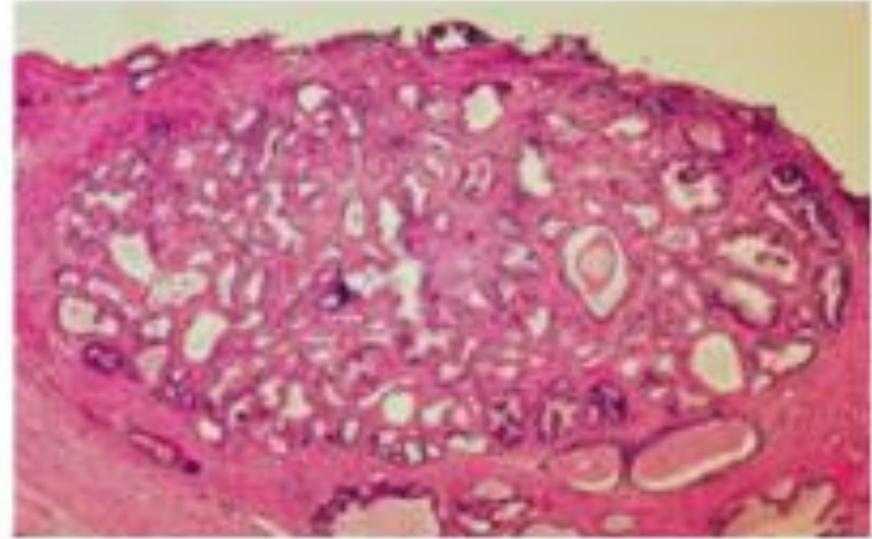
well-defined glands, typically smaller than benign glands and are lined by a single uniform layer of cuboidal epithelium, lacking basal cell layer seen in benign glands and containing prominent nucleoli.

- 1- gland are small back to back
- 2- lost of basal cell layer
- 3- Promenent nucleoli

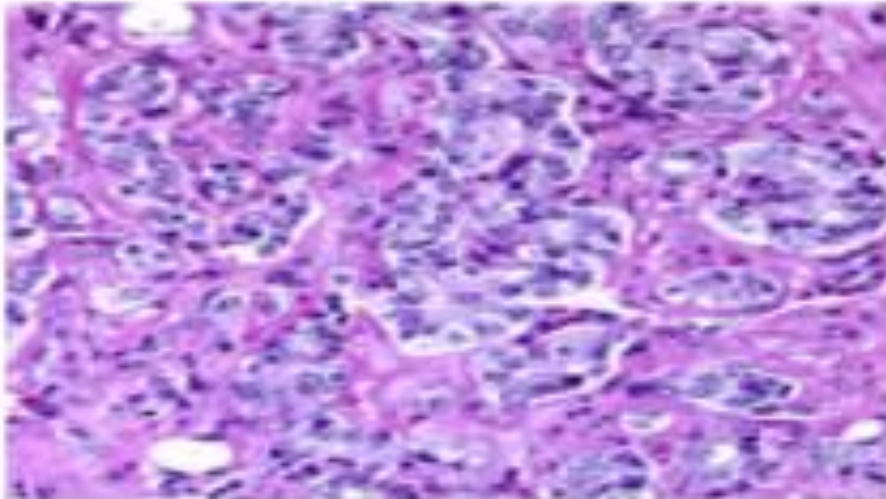
Normal Prostate



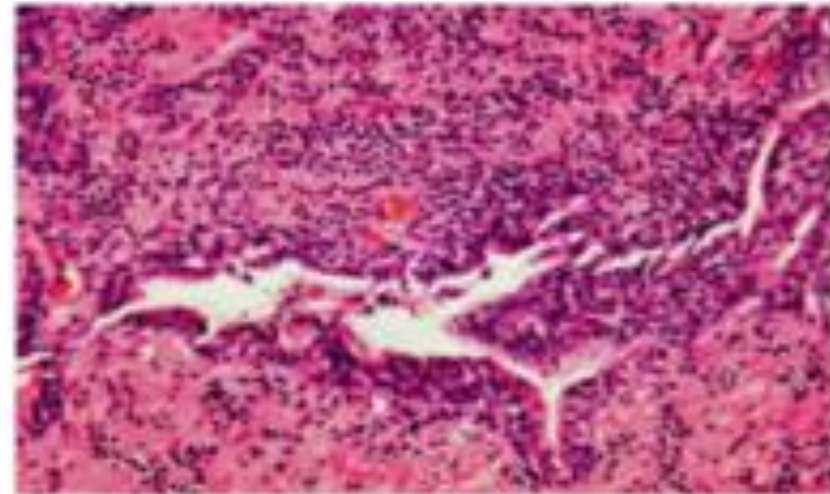
BPH



Prostate Cancer



Prostate Inflammation



Clinical features

Generally **asymptomatic** unless **locally advanced** or **metastatic**

Often discovered following investigation of nonspecific lower urinary tract symptoms.

Serum screening tests: elevated **prostate-specific antigen** (PSA) level.

Digital rectal examination (DRE): prostate may **feel normal** or **may be enlarged** / **asymmetrical** .

Bone metastases, particularly to the axial skeleton, are frequent late in the disease and typically cause osteoblastic (bone-producing) lesions.



Digital
rectal
examination



Trans
rectal
ultrasound



MRI
Fusion
biopsy



PCA3
(Prostate
Cancer



Prostate-specific
antigen
blood test (PSA)

specific

Diagnosis

Treatment.

The most common treatments for clinically **localized prostate cancer** are **radical prostatectomy** and **radiotherapy**.

The prognosis after radical prostatectomy is based on:

- the **pathologic stage**.
- the **margins of the resected specimens are free of tumor or not**.
- **Gleason grade** (grading system on the basis of glandular patterns of differentiation)

هم مجردا جایی
لا تخاز