PROSTATE GLAND

- Prostate gland is an accessory male sex organ and fibromuscular glandular organ situated just below urinary bladder.
- It's secretions forms bulk of seminal fluid.

SHAPE, SIZE, MEASUREMENTS.

Shape - Inverted cone shape.
Weight - 3g.
Width 4cm length = 3cm
Width is greater than length.
(Caecum, cardiac trunk)

PRESENTING PARTS

- An apex
- Base
- 4 surfaces → anterior
  posterior
  2 inferolateral surface.

Location.

- located in lesser pelvis
below → neck of UB
above → urogenital diaphragm.
behind → pubic symphysis
infront of → ampulla of rectum.

RELATIONS.

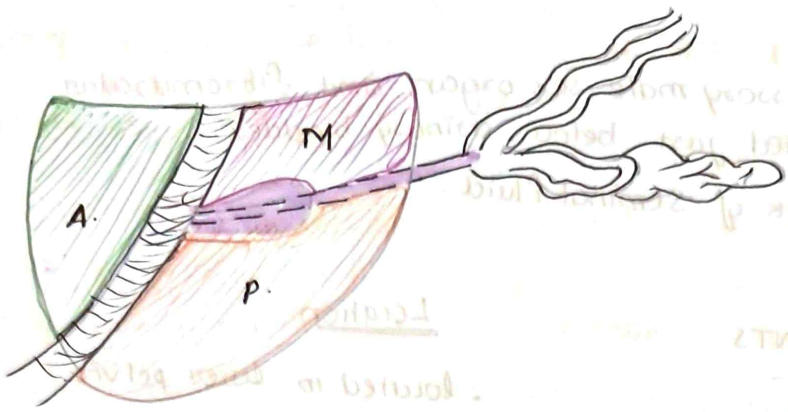
- Apex → directed downwards and rests on urogenital diaphragm
- Base → directed upward and surrounds neck of urinary bladder.
  - jnctn is marked by a groove.
  - Base is pierced by urethra
- Anterior surface → behind pubic symphysis and seperated from it by retropubic space of Retzius
  a little above apex, it is pierced by urethra.
- posterior surface → lies infront of ampulla of rectum from which it is seperated by fascia of Denonvilliers
  It is divided into small upper and large lower areas by a transverse sulcus, which is pierced on each side of median plane by ejaculatory duct. upper area is median lobe and lower → divided to 2 lateral lobes by median sulcus.

Inferolateral surface.
→ they are related to levator ani muscle.

Capsule.

True capsule → fibrous → formed by condensation of stroma.
false capsule → outer → from pelvic fascia.
[venous plexus lies in btw True & false capsule.]
NOT LIKE THYROID!!

Structures within the prostate.



(1) prostatic urethra.

enters gland by piercing base at junction of anterior 1/3rd & posterior 2/3rd

and leaves the gland by piercing anterior surface just above apex.

(2) Ejaculatory duct.

traverse the gland downward and forward, posterolateral to median lobe and open into the urethra on each side of opening of prostatic utricle.

(3) Prostatic Utricle.

- It is a sac like structure.
- that is the remnant of Mullerian duct in males.

Features of the posterior wall of prostatic urethra.

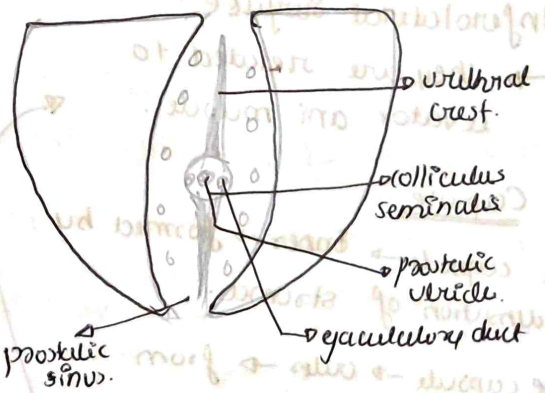
(1) Urethral crest → longitudinal fold of mucosa in median plane.

(2) Colliculus seminalis
→ rounded elevation in middle of urethral crest.

(3) opening of prostatic utricle.
→ in the centre of colliculus seminalis

(4) opening of ejaculatory duct.
→ on either side of opening of prostatic utricle

(5) prostatic sinus → depressed fossa on either side of urethral crest → it floor is perforated by apertures of ducts of prostatic gland



LOBES OF PROSTATE - 5 lobes.

Anterior lobe → infront of urethra.

Median lobe → above ejaculatory duct & behind urethra.

posterior lobe → below ejaculatory duct & behind urethra.

Lateral lobes → on either side of urethra.

median lobe → commonest site for BPH
Benign prostatic hypertrophy

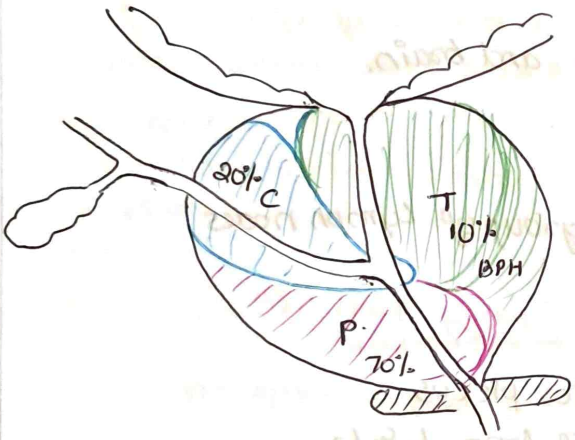
posterior lobe → commonest site of carcinoma

anterior lobe → lacks glandular tissue so less chance of carcinoma.

{← Figure}

Mc Neals Zones of prostate.

3 zones → central, transitional & peripheral zones.



central zone → surround ejaculatory duct, 20% of glandular tissue.
not involved in disease

Transitional zone → surround urethra.
10% of glandular tissue.
BPH → common site.

peripheral zone → 70%.
Commonest site for prostatic cancer.

Supports of prostate.

→ Urogenital diaphragm → apex rests on it.

→ two pairs (4) puboprostatic ligaments.
that connect it to pubic bones.
medial & lateral pairs
(apex) (base).

→ Denon villiers fascia.
posterior part of prostatic sheath adhers to this fascia.

Arterial supply.

supplied by branches of inferior vesical, middle rectal & internal pudendal arteries.

Venous drainage.

The prostatic venous plexus is present between true and false capsule.

The venous drainage of prostate follows two pathways.

(a) prostatic venous plexus → Internal iliac veins → IVC.
This explain metastasis of cancer to heart & Lungs.

(b) prostatic venous plexus → vertebral venous plexus (of Batson)
→ intracranial dural venous sinus
→ explains metastasis into vertebral column and brain.

Lymphatic drainage.

- Internal iliac., external iliac & sacral group of Lymph nodes

Nerve supply.

- sympathetic → by superior hypogastric plexus.
  preganglionic sympathetic fibres arise from L_1 & L_2 spinal segments.

- The parasympathetic supply → pelvic splanchnic nerves.
  preganglionic fibre from S_2, S_3, S_4 spinal segments.

Changes in prostate with age.

① Childhood → small, mainly fibromuscular stroma & rudiments of duct.
② puberty → testosterone —(influence)→ ↑ in size → 2x → proliferation of prostatic follicles that start secreting.
③ 3rd decade → Irregular epithelial infolding in the lumen of follicles → makes them Irregular
④ 4th decade → size constant, amyloid concretions appear in follicles.

5th decade → prostatic hyperthrophy invariably present to some degree.
some cases → size ↓ → senile atrophy.

Applied

① Benign prostatic hypertrophy - BPH.
prostate gland is enlarged due to hyperthrophy of median lobe (commonly)
it compress prostatic urethra & obstructs urine flow.
removal → prostatectomy

② Prostatic carcinoma
usually in peripheral zone ie, posterior lobe.
most common approach to remove adenoma of prostate → Transurethral.