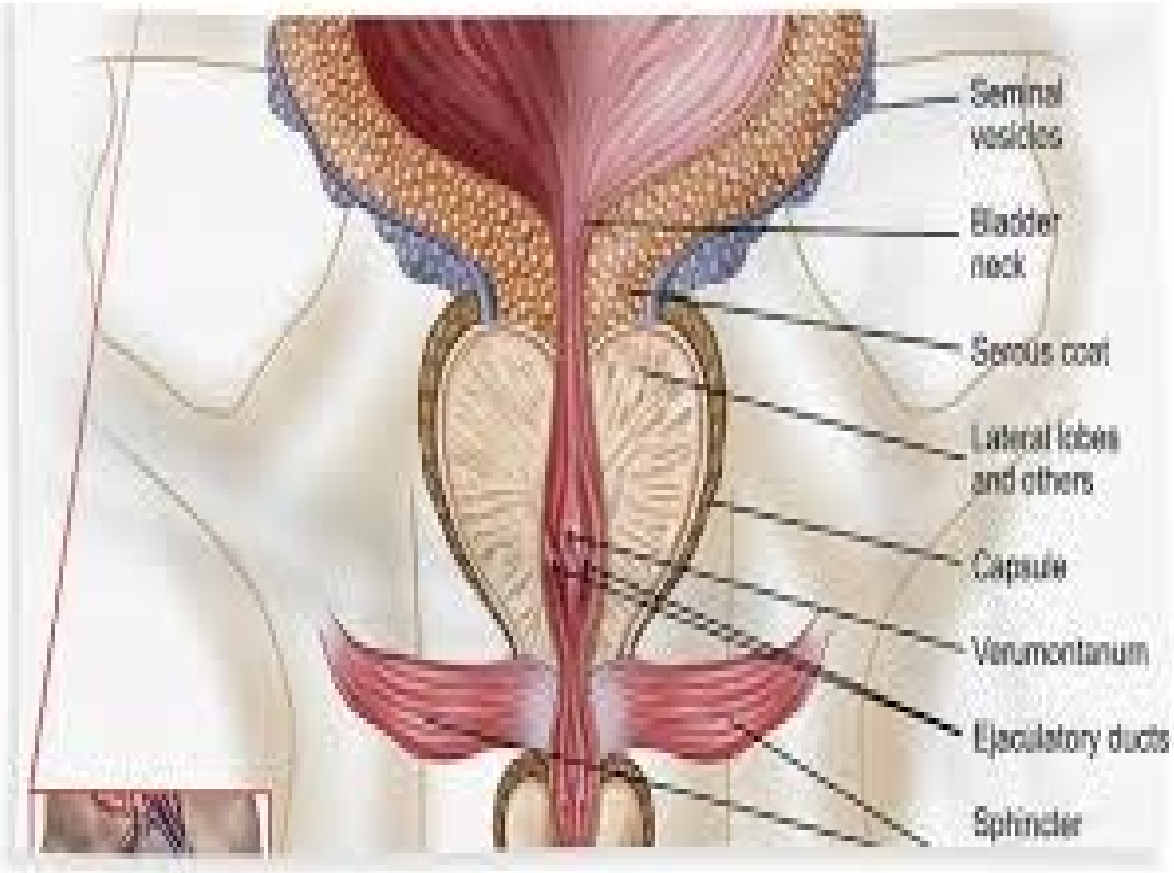
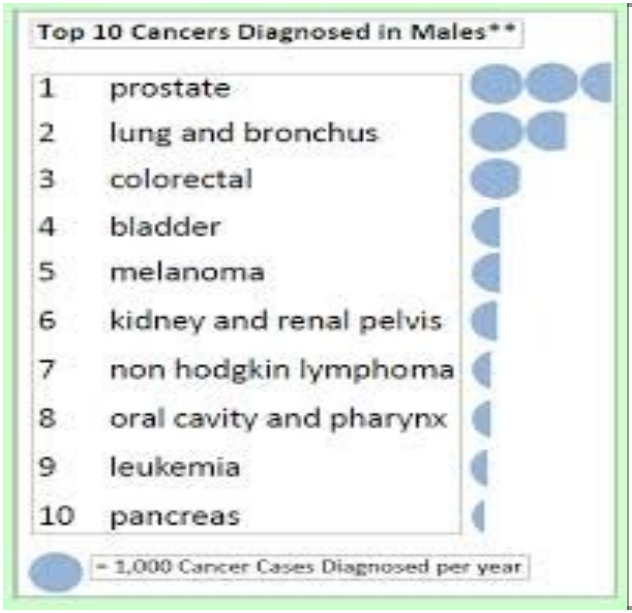
Carcinoma of the prostate
Cap


Seminal vesicles
Bladder neck
Serous coat
Lateral lobes and others
Capsule
Verumontanum
Ejaculatory ducts
Sphincter

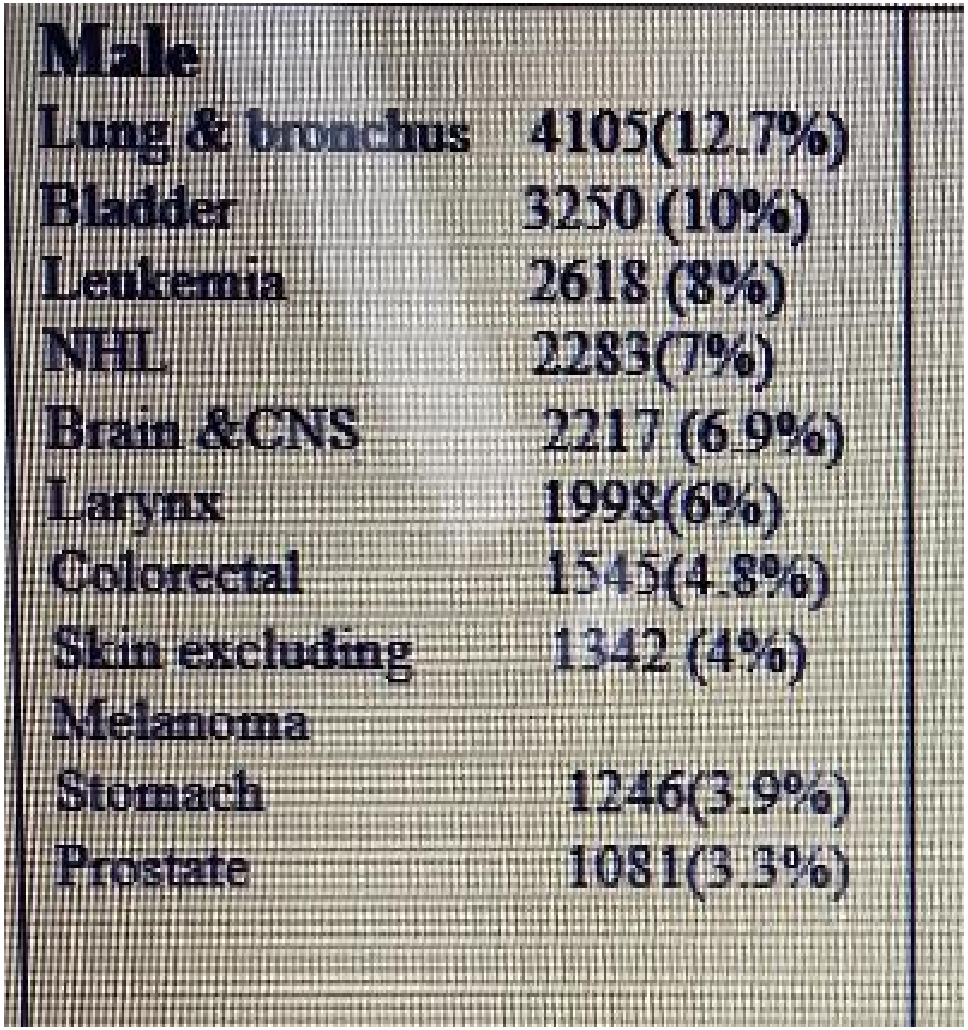


Australian Bureau of Statistics

Top 10 causes of male cancer-related deaths

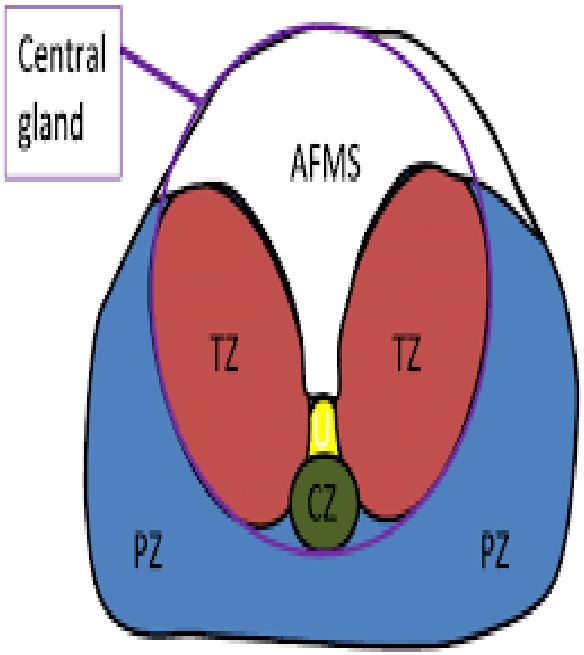
Cancer type	Deaths in 2017
Lung cancer	4,911
Prostate cancer	3,275
Bowel cancer	2,862
Blood and lymph cancers	2,660
Pancreatic cancer	1,566
Skin cancer	1,303
Liver cancer	1,241
Oesophageal cancer	925
Brain cancer	855
Bladder cancer	741

Source: ABS, Causes of Death, Australia (cat. no. 3303.0) 2017


Male
Lung & bronchus 4105(12.7%)
Bladder 3250 (10%)
Leukemia 2618 (8%)
NHL 2283(7%)
Brain &CNS 2217 (6.9%)
Larynx 1998(6%)
Colorectal 1545(4.8%)
Skin excluding 1342 (4%)
Melanoma
Stomach 1246(3.9%)
Prostate 1081(3.3%)

Incidence and epidemiology

One of the most common cancer in the world,
several ***risk factors*** have been identified,
-increasing age ,
-race (more common in black),
-positive family history of cap,
-high dietary fat intake, &
-smoking.



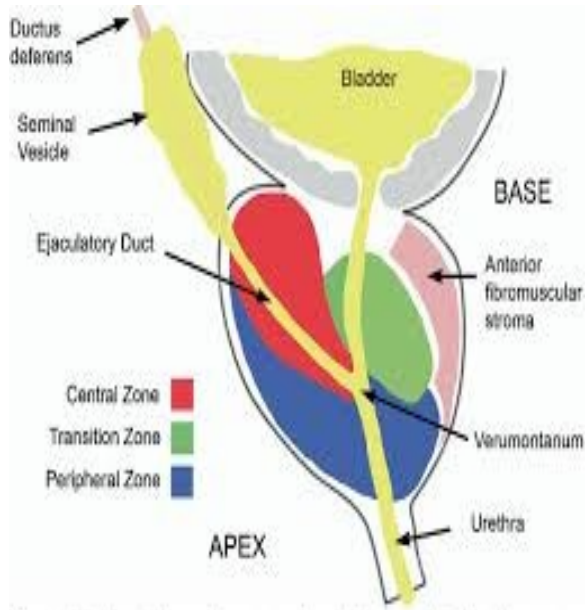


FIG. 1. Sagittal view of prostate gland that specifically illustrates

Pathology

95% of cap are adenocarcinomas

rarely transitional cell ca. (more than 90% of the remaining 5%)

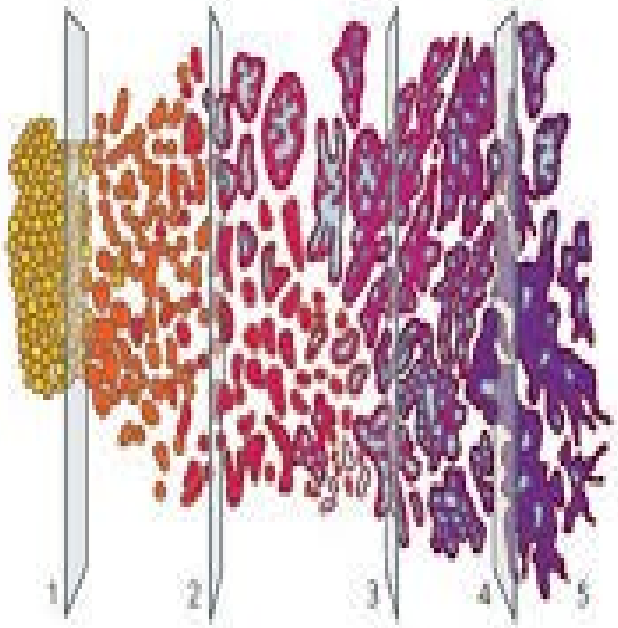
*The diagnosis of cap differ from other tumor it depend on architecture.

-70% of cap originate in the peripheral zone,

-10-20% in the transitional zone, &

-5-10% in the central zone.

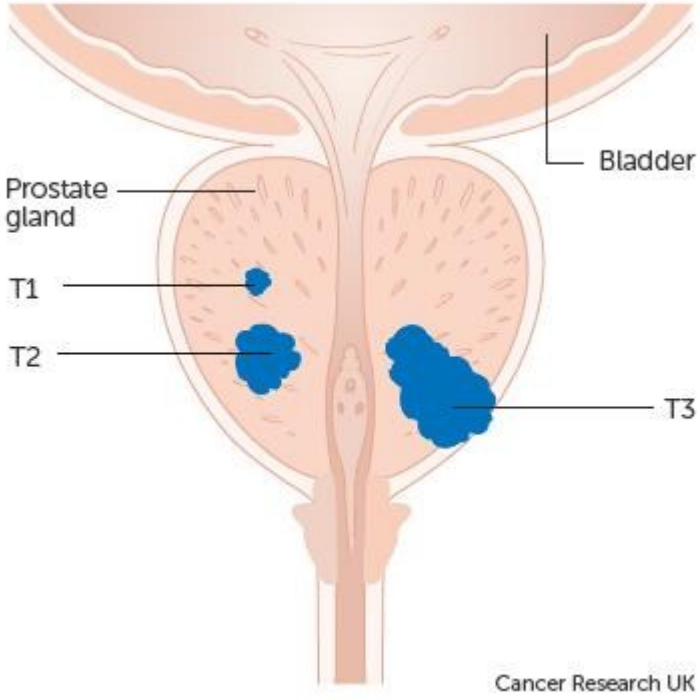
GLEASON PROSTATE GRADE SCALE



*PIN (prostatic intraepithelial neoplasia) is a precursor for cap.
*Usually the tumor is multifocal within the prostate with some variation in tumor grade.

Grading

Gleason grading system most commonly used, it relies upon the glandular architecture.
There are 5 grades from well differentiated to undifferentiated glandular achitecture
Gleason score by summation of the primary & secondary areas so its from 2 to 10 grades


Bladder
Prostate gland
T1
T2
T3
Cancer Research UK

Staging: (TNM staging system)

Tis-carcinoma in situ (PIN)

T1-discovered accidentally either by resected prostate or high PSA level.

-T1a- less than 5% of resected tissue,

-T1b- more than 5% of resected tissue,

-T1c- detected by elevated PSA

T2-tumor palpable by DRE or visible by TRUS confined to prostate.

T2a- confined to one lobe

T2b- to both lobes

T3-extracapsular extension including seminal vesicle.

T4-tumor extend to bladder neck, rectum, or pelvic side wall.

N = Regional lymph node.

N0—no regional LN.

N1—metastases to regional lymph node.

M =distant metastases.

M1a—distant metastases to non regional LN

M1b—distant metastases to bone.

M2—distant metastases to other sites.

Clinical features

*Most cases are asymptomatic
-the presence of symptom suggest locally advance or metastatic disease.
*Obstructive or irritative voiding symptoms
if tumor grow into the urethra or trigone.
*metastatic disease to the bone or spinal cord may cause bone pain pathologic fracture or spinal cord compression.
*DRE may detect induration.

D.Dx of prostatic nodule include.
1-Chronic granulomatous prostatitis,
2-previous TURP or needle biopsy,
3-prostatic calculus.

*locally advance disease with lymphadenopathy may lead to lymphedema of lower limb.

Investigation

*Uremia, if pt had obstructive uropathy.
*Anemia, may be present in metastatic disease.
*Tumor markers Alkaline phosphatase & serum acid phosphatase may be elevated,
-***PSA*** (prostate specific antigen) has great rule in diagnoses of cap

D.DX of high PAS

1-BPH
2-urethral instrumentation
3-infection
4-vigorous massage
4-prostatic biopsy or TURP
But the elevation not as high as in cap.
*normal value depend on age usually <4 ng/ml.
*PSA need about one month to return to its normal value after prostatic biopsy or TURP and only one week after prostatic message

*Imaging. Like
-TRUS (transrectal ultrasound),
-endorectal MRI, &
-bone scan
(cap typically give osteoblastic lesion in bone).

*Prostatic biopsy
Usually obtained under TRUS guidance.
Indicated in pt with either abnormal DRE or elevated PSA.

Treatment

The treatment depend on
-the grade & stage of the tumor,
-the life expectancy of the pt,
-associated morbidity,
-the ability of therapy to ensure disease free survival,
-the pt & physician preference.

A-Localized disease

1-Radical prostatectomy. Result depend on tumor stage &selection of better candidate pt usually with organ confined tumor.

2-Radiation therapy& brachytherapy. improved imaging & the use of 3-dimention can increase the dose & decrease the toxicity to the surrounding normal organs.

3-Cryosurgery. Freezing of the prostate by using multiprobe cryosurgical device. Temperature may reach -25 to-50 C lead to tissue destruction.

The term ***brachytherapy*** refers to a treatment technique that places radioactive sources in close proximity to or directl into the tumor.

-can be classified as either interstitial or intracavity.

* ***Interstitial brachytherapy*** involves the placement of radioactive needles, afterloaded needles or catheters, or radioactive seeds directly into the prostate,
bladder, penis, or periurethral soft tissues.

* ***Intracavitary brachytherapy*** includes placement of radioactive catheters into a lumen or orifice, such as in the urethra, to treat urethral and penile tumors.

*Permanent implants involve the use of radioactive seeds that are left in the patient

B-Metastatic disease.

a single microscopic metastatic focus of prostate cancer in only one pelvic lymph nodes is a hallmark that its incurable by any currently available treatment madality

Usually treated by endocrine therapy, because cap is hormonal dependant tumor about 70-80% of pt with metastatic cap responding to androgen deprivation.

Complete deandrogenization is regarded as gold standard procedure need blockage of both testicular & adrenal androgen.

Testiculat androgen (95% of testosteron)
can be blocked by either
Surgical through bilateral orcheactomy or
Medical by LHRH analogue which cause increase testosterone release in the first few weeks so should covered by flutamide to overcome flare up specially if there is spinal cord metastasis

Andral androgen blocked by drug acting on the peripheral receptors like flutamide