

Difference Between Prostate Cancer and Testicular Cancer

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Key Difference – Prostate Cancer vs Testicular Cancer

Prostate cancer and testicular cancer are two disease conditions affecting the male reproductive system. The key difference between prostate cancer and testicular cancer is that they occur in two different locations. As their names imply, **prostate cancer is a malignancy arising in the prostate gland while testicular cancer is a malignancy arising in the testis**. Although it is hard to believe, testis also acts as a **gland** producing vital **hormones** such as **testosterone**.

What is Prostate Cancer?

Prostate cancer is the sixth commonest cancer in the world. It accounts for 7% of all cancers in men. With advancing age, the likelihood of malignant changes within the prostate increases. Although around 80% of the men have malignant foci in their prostate by the age of eighty, most of these remain dormant. Adenocancer is the histological type of the tumor.

Pathogenesis

Advancing age, race, and a family history are the risk factors for prostate cancer. First-degree relatives of men having prostate cancer have twice the risk compared to the general population. Hormonal factors also play a role in the pathogenesis.

Clinical Features

- Lower urinary symptoms
- Back and skeletal pain
- Weight loss
- [Anemia](#)

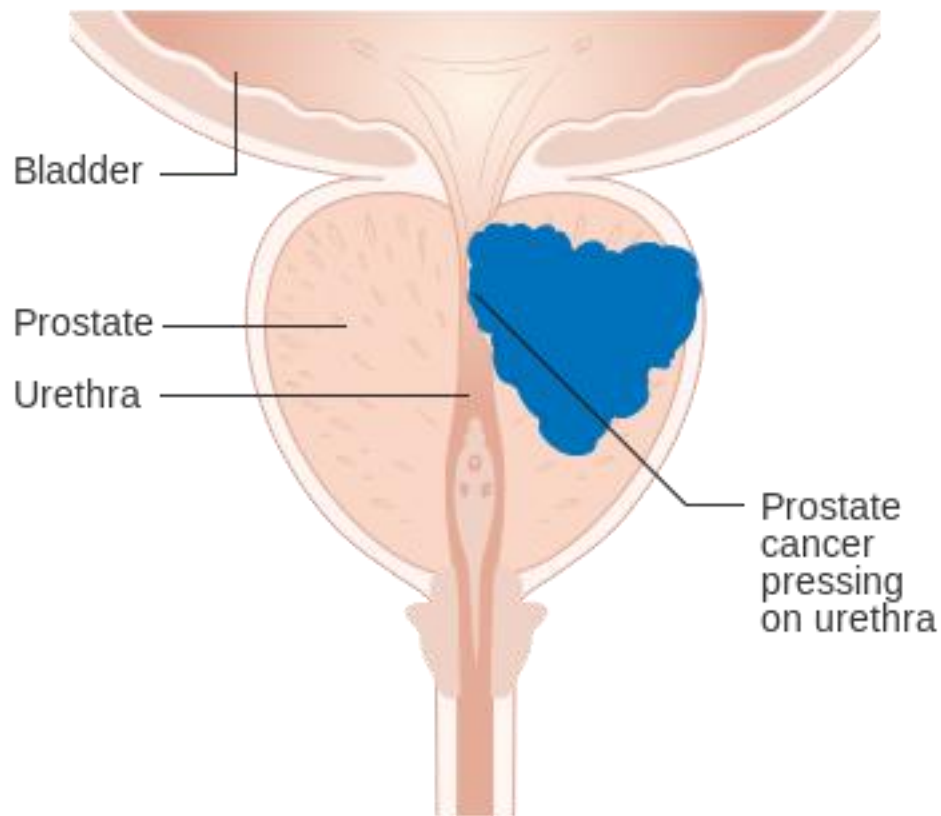


Figure 01: Prostate Cancer

Diagnosis

Diagnosis of the disease is usually made during a digital rectal examination for some other problem where the physician accidentally identifies the presence of a hard, irregular gland. In some patients after prostatectomy following benign prostatic enlargement, histological examination of the specimens reveals malignant changes in the prostate. In some countries, screening for prostate cancer is carried out by measuring the serum Prostate Specific Antigen (PSA) level.

Investigations

Transrectal ultrasounds (TRUS) of the prostate and extended sampling prostatic biopsy are the main investigations done. These are used in defining the size of the gland and staging of the tumors. Before starting the treatment, it is essential to have the histological diagnosis. Serum PSA levels are usually elevated (>16 ng/ml) if metastases are present, but can be normal as well. Extraprostatic extensions can be detected by endorectal coil MRI. Upper urinary tract can be investigated by ultrasonography to find any evidence of **dilatation**. Osteosclerotic lesions can be identified on X-ray if bone metastases are present.

Management

If the cancer is localized, management can be done by curative therapy (radical prostatectomy), external beam radiotherapy or brachytherapy implants, which may have unwanted side-effects such as incontinence and sexual dysfunction. For older patients who wish to avoid surgery, radiotherapy is used. There should be a good communication between the clinician and patient for the purpose of selecting the most appropriate mode of treatment. The strategy of watchful waiting can be used in patients with localized prostate cancer.

Endocrine Therapy

Prostate cancer is a hormone-sensitive malignancy. Prostate cancer tissue is able to trap circulatory androgens for the maintenance of the tissue androgen levels.

Cancer tissues can be deprived of androgens by giving the following drugs.

- GnRH agonists
- Androgen receptor blockers
- Androgen synthesis inhibitors
- Corticosteroids and estrogens

What is Testicular Cancer?

Testicular germ cell tumor is the commonest cancer among men aged 15-35 years. Seminoma and nonseminoma are the 2 main histological types. Non-seminomas contain mature and immature elements and the mature elements found in these tumors are called the [teratomas](#). In rare occasions, germ cell tumors can occur in extra gonadal sites such as the [pituitary](#), mediastinum, and retroperitoneum.

Clinical Features

- Painful testicular mass
- Back pain
- Gynecomastia

Investigations

- Ultrasound or MRI scanning
- Assay of serum tumor markers includes alpha-fetoprotein, beta-human chorionic gonadotrophin and lactate dehydrogenase
- CT or MRI

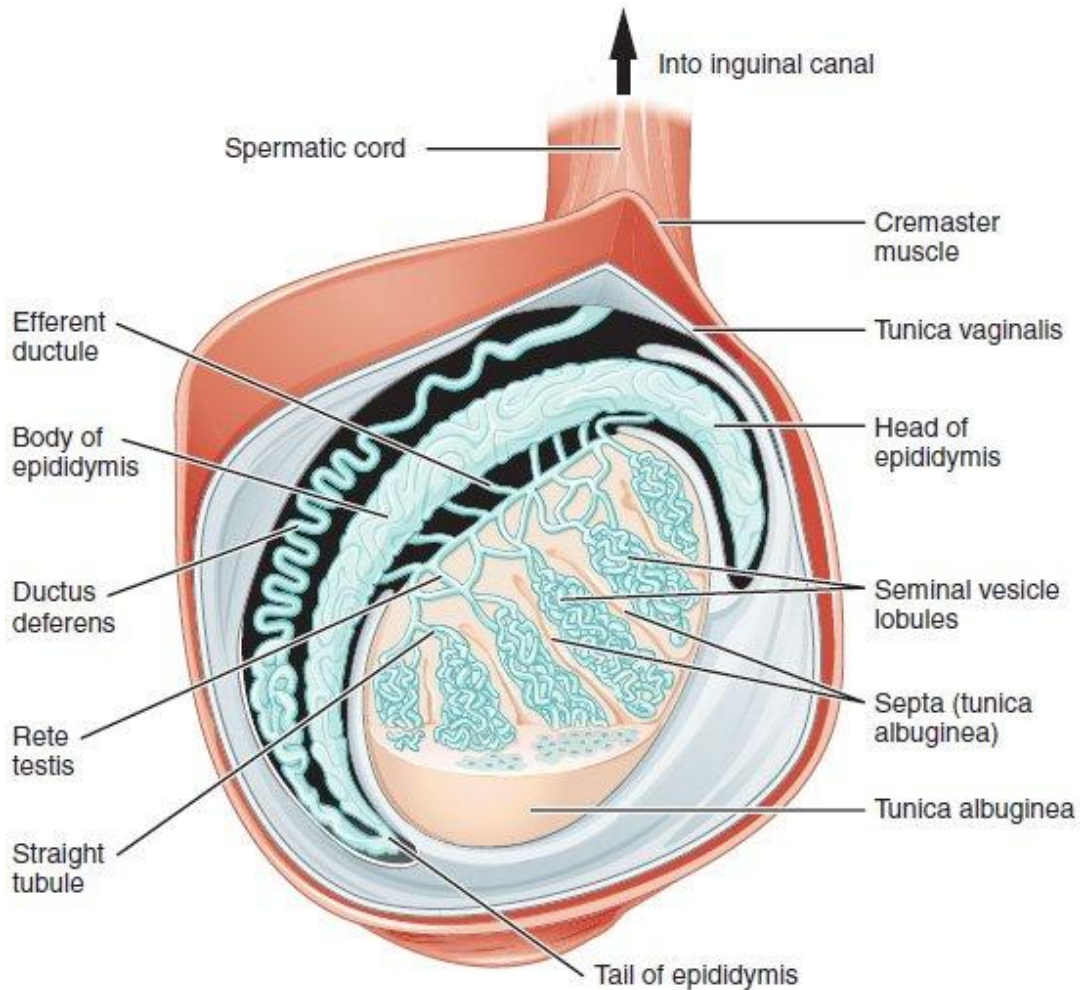


Figure 02: Testes

Management

Seminomas

Radiosensitivity and chemosensitivity of seminoma are very high. Seminomas are associated with raised serum LDH levels, a rare mild elevation of the β - human chorionic gonadotrophin level and normal AFP level. Stage 1 disease which is limited to the gonad, has a 10-30% risk of recurrence following surgery unaccompanied by any other treatment modality. Adjuvant therapy with either chemotherapy or radiotherapy to the para-aortic lymph nodes is preferred because it increases the survival rate by about 95% in the early disease. Carboplatin is the drug of choice because of the convenience of administration and minimal side-effects.

Non-seminomas

The risk of relapse varies depending on the prognostic factors such as histological differentiation, the presence of embryonal elements and the extent of local and vascular invasion.

What is the difference between Prostate Cancer and Testicular Cancer?

Prostate Cancer vs Testicular Cancer	
Prostate cancer arises in the prostate.	Testicular cancer arises in the testis.
Spread	
The spread is relatively slow.	The spread is fast.
Dormant Forms	
This can sometimes be dormant.	There are no dormant forms.
Sensitivity	
Usually, there is a very high hormone sensitivity.	Radio sensitivity and chemosensitivity are very high.

Summary – Prostate Cancer vs Testicular Cancer

Prostate cancers are the malignancies arising in the prostate gland. They have a very good prognosis. Unlike the prostate cancers, testicular cancers which are the malignancies occurring in the testis have a poor prognosis and they spread rapidly due to the high rate of proliferation of the germ cells. This is the key difference between prostate cancer and testicular cancer.

References:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009. Print.

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- 1."Diagram showing prostate cancer pressing on the urethra CRUK 182" By Cancer Research UK – Original email from CRUK (CC BY-SA 4.0) via [Commons Wikimedia](#)
2. "Figure 28 01 03" By OpenStax College – Anatomy & Physiology, [Connexions Web site](#). Jun 19, 2013. (CC BY 3.0) via [Commons Wikimedia](#)

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APA: Difference Between Prostate Cancer and Testicular Cancer. (2017, August 21). Retrieved (date), from <http://www.differencebetween.com/difference-between-prostate-cancer-and-vs-testicular-cancer/>

MLA: "Difference Between Prostate Cancer and Testicular Cancer" Difference Between.Com. 21. August 2017. Web.

Chicago: "Difference Between Prostate Cancer and Testicular Cancer." Difference Between.Com. <http://www.differencebetween.com/difference-between-prostate-cancer-and-vs-testicular-cancer/> (accessed [date]).



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