December 2023

Missouri Cancer Registry and Research Center
Show-Me-Tips

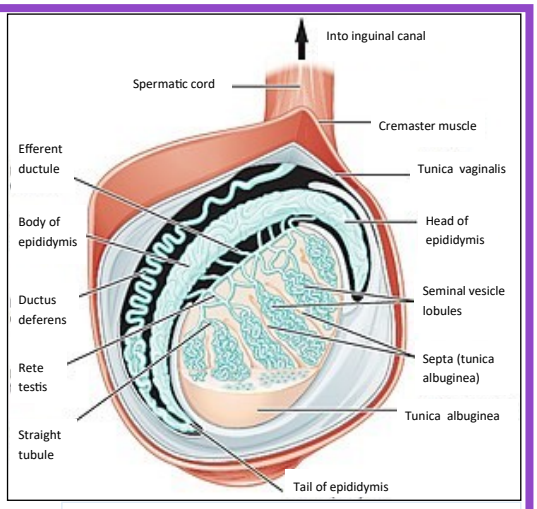
Coding...Abstracting...Education…

Ed 23:04
Testicular Cancer

Testicular Cancer

Testicular cancer is a disease in which cancer develops in one or both of the testicles. It occurs when germ cells experience abnormal growth. Germ cells are a highly specialized cell that form gametes (cells that make sperm), and like stem cells, have the potential to form any cell in the body. Normally these cells lie dormant until sperm fertilizes an egg. If germ cells become cancerous, they multiply, forming a mass of cells called tumors that begin to invade normal tissue. When this happens, these cells could potentially form a variety of embryonic like features including, but not limited to, hair, nails, teeth etc.

Testicular cancer has a very fast onset. If not detected early, the cancerous tumors can grow rapidly with the ability to double in size in just 10 - 30 days



https://commons.wikimedia.org/wiki/File:Figure_28_01_03.JPG

Testicular cancer is on the rise and can affect any male from infancy to the elderly. An estimated 9,190 will be diagnosed in 2023 according to the American Cancer Society. The highest rate of diagnoses are males between the ages of 15 and 44. It is estimated that 1 out of 250 males will be diagnosed with testicular cancer at some point in their lifetime.

Topography Codes

- C62.0 Undescended
- C62.1 Descended
- C62.9 Testis NOS
  - Unknown if descended

Cryptorchidism (undescended testicle) - a condition in which one or both of the testes fail to descend from the abdomen into the scrotum is the most common genital malformation in boys with a third of premature boys being affected and 2–5% of full-term boys having at least one undescended testicle.

Empty Scrotum: Undescended versus Ectopic

ETC Testis presentation Sept 2023

Lymphatics

The lymphatics ascend along the testicular vessels & drain into the preaortic & paraaortic groups of lymph nodes

Different Types of Testicular Cancer

https://www.testicularcancerawarenessfoundation.org/what-is-testicular-cancer

https://www.cancer.org/cancer/types/testicular-cancer/about/what-is-testicular-cancer.html

Germ Cell Tumors

More than 90% of cancers of the testicle start in cells known as germ cells. These are the cells that make sperm. The main types of germ cell tumors (GCTs) in the testicles are **seminomas** and **non-seminomas**.

Seminomas arise from sperm producing germ cells of the testicles and grow or spread at a slower rate than non-seminomas. Seminomas are most likely to occur in men aged 30 to 50. Fortunately, seminomas are very treatable by surgery and respond well to chemotherapy and radiation, if these treatments are needed. There are two sub-types of seminoma tumors:

Classical seminoma - 95% of all seminomas are classical. These usually occur in men between 25 and 45.

Spermatocytic seminoma - this is a more rare type of seminoma that occurs in older men. (average age is about 65)

Some seminomas can increase of blood levels of human chorionic gonadotropin (HCG).

This project was supported in part by a cooperative agreement between the Centers for Disease Control and Prevention (CDC) and the Missouri Department of Health and Senior Services (DHSS) (NU58DP007130-02) and a Surveillance Contract between DHSS and the University of Missouri.

Different Types of Testicular Cancer (cont.)

Non-seminoma Germ Cell Tumors often show characteristics of embryonic tissues or of the embryonal yolk sac. Non-seminomas usually develop earlier in life, usually in men between their late teens and early 30s. Most tumors are a mix of different types (sometimes with seminoma cells too), but this doesn't change the treatment of most non-seminoma cancers.

Embryonal carcinomas are a type of non-seminoma cancer that is present in about 40% of testicular cancer tumors, but pure embryonal carcinomas occur only 3-4% of the time. When seen under a microscope, these tumors can look like tissues of very early embryos. This type of non-seminoma tends to grow rapidly and spread outside the testicle.

Embryonal carcinomas can increase blood levels of alpha-fetoprotein (AFP) & human chorionic gonadotropin (HCG)

Yolk sac carcinomas are so named because their cells look like the yolk sac of an early human embryo. Other names for this type of cancer include yolk sac tumor, endodermal sinus tumor, infantile embryonal carcinoma or orchidoblastoma.

This is the most common form of testicular cancer in children, but pure yolk sac carcinomas (tumors that do not have other types of non-seminoma cells in them) are rare in adults. When they occur in children, these tumors usually are treated successfully. But they're of more concern when they occur in adults, especially if they are pure. Yolk sac carcinomas respond very well to chemotherapy, even if they have spread.

Yolk sac carcinomas almost always increases blood levels of AFP (alpha-fetoprotein).

Choriocarcinoma is a very rare and fast-growing type of testicular cancer in adults. Pure choriocarcinoma is likely to spread rapidly to other parts of the body, including the lungs, bones, and brain. More often, choriocarcinoma cells are seen with other types of non-seminoma cells in a mixed germ cell tumor. These mixed tumors tend to have a somewhat better outlook than pure choriocarcinomas, although the presence of choriocarcinoma is always a worrisome finding.

Choriocarcinomas increases blood levels of HCG (human chorionic gonadotropin).

Teratomas are germ cell tumors with areas that, under a microscope, look like each of the 3 layers of a developing embryo: the endoderm (innermost layer), mesoderm (middle layer), and ectoderm (outer layer). Pure teratomas of the testicles are rare and do not increase AFP (alpha-fetoprotein) or HCG (human chorionic gonadotropin) levels. Most often, teratomas are seen as parts of mixed germ cell tumors.

There are 3 main types of teratomas:

Mature teratomas are tumors formed by cells a lot like the cells of adult tissues. They rarely spread.
Immature teratomas are less well-developed cancers with cells that look like those of an early embryo. This type is more likely than a mature teratoma to invade nearby tissues, spread outside the testicle, and recur years after treatment.
Teratomas with somatic type malignancy are very rare. These cancers have some areas that look like mature teratomas but have other areas where the cells have become a type of cancer that normally develops outside the testicle (such as a sarcoma, adenocarcinoma, or even leukemia).

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Different Types of Testicular Cancer (cont.)

Stromal tumors can arise in the supportive and hormone-producing tissues, or stroma, of the testicles. These tumors are known as gonadal stromal tumors. They make up less than 5% of adult testicular tumors, but up to 20% of childhood testicular tumors. The main types are **Leydig cell tumors** and **Sertoli cell tumors**.

Leydig cell tumors These tumors start in the Leydig cells in the testicle that normally make male sex hormones (androgens like testosterone). Leydig cell tumors can develop in both adults and children. These tumors often make androgens (male hormones), but sometimes they make estrogens (female sex hormones).

Sertoli cells act as supportive stromal cells of the testicles that nourish sperm producing cells. Sertoli cell tumors are also usually benign but once they spread throughout the body can be unresponsive to chemo and radiation therapy.

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SEER Summary Stage - Testis

- Code **Summary Stage 1** (Localized only) for tumors limited to the testis **WITH OR WITHOUT** lympho-vascular (LVI) invasion
  - AJCC T1
- Code **Summary Stage 2** (Regional by direct extension only) **WITH OR WITHOUT** lympho-vascular invasion (LVI)
  - AJCC T2 Lympho-vascular invasion (LVI) can upstage testis from T1 to T2
- Code **Summary Stage 4 (**Regional by BOTH direct extension (**WITH OR WITHOUT** lympho-vascular invasion (LVI) **AND** regional lymph node(s) involved)

SEER Summary Stage Manual

ETC Testis presentation Sept 2023

Record presence or absence of lympho-vascular (LVI) from:
Path report or medical documentation (path report has priority)
Any primary tumor specimen: biopsy or resection

Surgery Primary Site - Testis

Surgery code A400 - Excision of testicle WITH cord or cord not mentioned (radical orchiectomy)
The surgical code should be based on the extent of the surgery that's documented in the operative report and the procedure that was performed.

Question: Can surgery code A400 - Excision of testicle WITH cord or cord not mentioned (radical orchiectomy) only be used if it is stated that it is a radical orchiectomy?

Per STORE rules code A400 should be used when an excision of testicle was performed (WITH cord or cord not mentioned (radical orchiectomy). Code S400 for orchiectomy with or without cord mention.

Question: If it is not specified to be partial/local, or specifically excision of testicle without cord, it is preferred to use code A400 over code A800?

Assign code A800 - Orchiectomy, NOS (unspecified whether partial or total testicle removed). Code A800 when you know an orchiectomy was performed, but it is not specified as a partial or total removal.

https://cancerbulletin.facs.org/forums/node/144785

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Clinically positive lymph nodes found post orchiectomy

Example: Patient presents with an 8cm right testicular mass, no palpable groin adenopathy. 2/13/21 patient had a right radical orchiectomy to diagnose and treat right testicular mass. Path shows mixed germ cell tumor confined to testis. No nodes removed at surgery. Post op CT/chest abdomen pelvis on 2/22/17 is positive for two metastatic retroperitoneal lymph nodes, largest 3.7 cm.

The information from the surgical resection cannot be used to assign the clinical stage in retrospect. Clinical staging is all information know prior to the treatment. The cN can NEVER be assigned based on information after the surgical resection. Clinical staging is not always assigned for testicular cancers.

For the pN, the rules state you must have at least one node microscopically examined in order to assign the pN. Without that information, you may not use post-op imaging. This information cannot be included in the pathological staging. There is a small percentage of cases where this happens.

https://cancerbulletin.facs.org/forums/node/73077#post118150

Testicular cancer staging - pathological vs post therapy staging

Question: How do you stage a testicular cancer that has an orchiectomy followed by chemotherapy followed by retroperitoneal node dissection? Do you use pathological or post-therapy staging?

If the patient's initial treatment is surgical resection, then that patient qualifies for pathological staging.

There is no other staging system that the patient qualifies for, as the chemotherapy is ADJUVANT treatment (following initial surgical resection).

There are no staging systems that exist for the retroperitoneal lymph nodes as they followed surgical resection, and then chemotherapy.

The definition of posttherapy staging is that the INITIAL treatment is systemic/radiation therapy followed by a surgical resection of the **primary** site. You do not have anything that qualifies for posttherapy staging.

https://cancerbulletin.facs.org/forums/node/87484

Secondary Testicular Cancers

Cancers that start in another organ and then spread (metastasize) to the testicle are called secondary testicular cancers. These are not true testicular cancers – they don't start in the testicles. They're named and treated based on where they started.

Lymphoma is the most common secondary testicular cancer. Testicular lymphoma is more common in men older than 50 than primary testicular tumors. The outlook depends on the type and stage of lymphoma. The usual treatment is surgical removal, followed by radiation and/or chemotherapy.

In boys with acute leukemia, the leukemia cells can sometimes form a tumor in the testicle. Along with chemotherapy to treat the leukemia, this might require treatment with radiation or surgery to remove the testicle.

Cancers of the prostate, lung, skin (melanoma), kidney, and other organs also can spread to the testicles. The prognosis for these cancers tends to be poor because these cancers have usually spread widely to other organs as well. Treatment depends on the specific type of cancer.

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