

Testicular Cancer:

What is Testicular Cancer?

Cancer of the testicle (also called the testis), a rare kind of cancer in men, is a disease in which cancerous (malignant) cells develop in the tissues of one or both testicles. There are two testicles located inside of the scrotum (the sac of loose skin that lies directly under the penis). Sperm and male hormones are made in the testicles.

There are three main types of testicular tumors, which develop in different types of cells in the testicles. The most common type, called a germ cell tumor, develops in the germ cells, the cells that produce sperm cells. About 90 percent of testicular tumors are germ cell tumors. Stromal cell tumors are much less common; they are cancers that start in the hormone-producing cells in the testicles. There are several different subtypes of germ cell and stromal cell tumors. A third type of testicular tumor, called a secondary testicular tumor, is a tumor that results from cancer that has started elsewhere in the body. Many of these tumors begin as lymphoma, particularly in men over the age of 50.

Risk Factors

The American Cancer Society predicts that about 7,200 men in the United States will be diagnosed with testicular cancer in 2001. The disease occurs most commonly in men who are between 15 and 35 years old and is much more common among white American men than among African American or Asian American men.

Men who have an undescended testicle (a testicle that has never moved down into the scrotum) are at higher risk of developing cancer of the testicle than other men whose testicles have moved down into the scrotum. This is true even if surgery has been done to place the testicle in the appropriate place in the scrotum.

Other risk factors for testicular cancer include the following:

- + A history of cancer in the other testicle
- + A family history of the disease
- + Carcinoma in situ (this precancerous condition usually results in cancer)
- + HIV infection

Symptoms and Diagnosis

If a man experiences any of the following symptoms, he should see a doctor:

- + A lump in either testicle
- + Enlargement of a testicle
- + A feeling of heaviness in the scrotum
- + A dull ache in the lower abdomen or groin
- + A sudden collection of fluid in the scrotum
- + Pain or discomfort in a testicle or the scrotum
- + Enlargement or tenderness of the breasts

The doctor will examine the testicles and feel for lumps. If the scrotum doesn't feel normal, the doctor may need to do an ultrasound examination, which uses sound waves to make a picture of the inside of the testes. Blood tests can also be used to look for proteins or enzymes that are typically secreted by certain types of tumors.

The doctor may need to surgically remove the testicle in order to perform a biopsy, an examination of tissue under a microscope to see if there are any cancer cells. In rare cases, the biopsy is performed without severing the testicle. More often, if the doctor suspects cancer, the testicle is removed before the biopsy is performed.

The chance of recovery (prognosis) and choice of treatment for cancer of the testicle depend on the stage of the cancer (whether it is just in the testicle or has spread to other places) and the patient's general state of health.

Stages and Treatment Options

If a man has testicular cancer, the doctor will do more tests to find out if the cancer has spread from the testicle to other parts of the body. This process, called staging, helps the doctor to plan the patient's treatment. The following stages are used for testicular cancer:

Stage I: Cancer is found only in the testicle.

Stage II: Cancer has spread to the lymph nodes in the abdomen.

Stage III: Cancer has spread beyond the lymph nodes in the abdomen. There may be cancer in parts of the body far away from the testicles, such as the lungs and liver.

Recurrent: The cancer has come back (recurred) after it has been treated. It may come back in the same place or in another part of the body. A patient should regularly examine the opposite testicle for possible recurrence for many years after treatment. Patients will probably have check-ups once per month during the first year after surgery, every other month during the next year, and less frequently after that.

Treatment Options

Testicular cancer is one of the more curable types of cancer. There are four primary treatments for disease:

- + surgery
- + radiation therapy
- + chemotherapy
- + bone marrow transplantation

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Surgery

Surgery is a common treatment for most stages of cancer of the testicle. A doctor may take out the cancer by removing one or both testicles through an incision (cut) in the groin. This is called a radical inguinal orchiectomy. Some of the lymph nodes in the abdomen may also be removed (lymph node dissection).

Side effects of surgery: The side effects of surgery depend on the location of the tumor and the type of operation, among other factors. Although patients are often uncomfortable during the first few days after surgery, this pain can usually be controlled with medicine. The recovery period after an operation varies from patient to patient.

Radiation Therapy

Radiation therapy uses x-rays or other high-energy rays to kill cancer cells and shrink tumors. Radiation therapy for testicular cancer usually comes from a machine outside the body (external-beam radiation).

Side effects of radiation therapy: The

most common side effects of radiation therapy are tiredness, skin reactions in the treated areas (such as a rash or redness) and loss of appetite. Radiation therapy may also cause a decrease in the number of white blood cells that help protect the body against infection. Most of these side effects can be treated or controlled and in most cases they are not permanent.

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. Chemotherapy may be taken by pill, or it may be put into the body by a needle in a vein. Chemotherapy is called a systemic treatment because the drugs enter the bloodstream, travels through the body, and can kill cancer cells outside the testicle.

Side Effects of Chemotherapy

Chemotherapy drugs generally fight rapidly dividing cells in the body. Cells that divide rapidly include both the targeted cancer cells and healthy cells in the blood, digestive tract and hair follicles. Depending on which anticancer drugs a patient receives, he or she may experience symptoms when healthy cells are damaged along with the cancer cells. If healthy

blood cells are destroyed by chemotherapy, the patient may be more susceptible to infections, bruising or bleeding and fatigue. When cells in the hair roots or digestive tract are affected by anticancer drugs, the patient may have hair loss, nausea, vomiting or mouth sores. Not all chemotherapy patients develop all of these side effects, and the symptoms usually go away during the recovery period or after the treatments are done. Doctors can prescribe medicines and other treatments to control most of the symptoms.

Bone Marrow Transplantation

Bone marrow transplantation is a newer type of treatment for testicular cancer. In autologous bone marrow transplants, bone marrow is taken from the patient and treated with drugs to kill any cancer cells. The marrow is then frozen and the patient is given high-dose chemotherapy with or without radiation therapy to destroy all of the remaining marrow. The marrow that was taken out is then thawed and given back to the patient through a needle in a vein to replace the marrow that was destroyed.

(Editor's Note: This information was provided by the UM Greenebaum Cancer Center.)

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