CONDITION

Urethral cancer

Urethral cancer is cancer that begins in the tube carrying urine out of the body.

WHAT IT IS
Cancer beginning in the tube carrying urine outside

BODY SYSTEM
Urinary and reproductive systems

MAIN SYMPTOMS
Urethral bleeding, blood in urine, weak stream, pelvic lump

WHAT CAUSES IT
DNA changes; exact trigger usually unknown

HOW IT IS DIAGNOSED
Urethroscopy with biopsy; imaging stages its spread

MAIN TREATMENT
Surgery, often combined with radiation or chemotherapy

CAN IT BE CURED?
Sometimes - localized cancers may be removed completely

IS IT AN EMERGENCY?
Sometimes - complete urine blockage or heavy bleeding

LONG-TERM OUTLOOK
Best when small and confined to the urethra

Overview

Urethral cancer begins in the urethra, the tube that carries urine from the bladder to the outside of the body. It is different from bladder, prostate, vaginal, or penile cancer that has grown into the urethra from nearby tissue.

The urethra is short in women. In men, it is longer and passes through the prostate and penis. A tumor's exact position affects its symptoms, treatment, and likely course.

Several types of cancer can develop from the cells in the urethra. These include squamous cell carcinoma, urothelial carcinoma, and adenocarcinoma. These names describe the kind of cell in which the cancer started. They matter because different cell types may respond differently to treatment.

Urethral cancer matters because it can restrict urine flow and spread into nearby structures,

lymph nodes, or distant organs. However, symptoms are often caused by more common conditions, such as a urinary infection, a narrowing of the urethra, or an enlarged prostate. Testing is needed to find the cause.

Symptoms

Urethral cancer does not always cause symptoms at an early stage. When symptoms occur, they may include:

These symptoms are not specific to cancer. Infections, urinary stones, urethral strictures, prostate conditions, and other problems can produce similar changes. Persistent or unexplained symptoms should be assessed rather than self-diagnosed.

- Blood in the urine or bleeding from the urethral opening
- A weak, interrupted, or difficult urine stream
- Needing to urinate more often
- Pain or burning when urinating
- Discharge from the urethra
- A lump along the urethra, penis, perineum, or near the vaginal opening
- Pelvic, groin, or genital pain
- Enlarged lymph nodes in the groin
- Difficulty emptying the bladder or being unable to urinate

Causes and risk factors

Urethral cancer develops when cells in the urethra acquire DNA changes that allow them to grow without normal control. It is usually not possible to identify why those changes occurred in one person.

Factors associated with a higher risk include long-term inflammation or irritation of the urethra. This may occur with repeated urethral infections, a urethral stricture, or certain sexually transmitted infections. Infection with some high-risk types of human papillomavirus, or HPV, has been linked to some squamous cell cancers.

A previous bladder cancer can increase the chance of urothelial cancer later appearing in the urethra. This is especially relevant after bladder removal, although the overall risk for any one person is influenced by the original cancer and the treatment received.

In women, chronic problems involving a urethral diverticulum may be associated with cancer. A diverticulum is a pouch that forms beside the urethra and can collect urine or become repeatedly infected.

Having a risk factor does not mean that you will develop urethral cancer. Some people diagnosed with it have no clear risk factors.

Diagnosis

Diagnosis usually begins with questions about urinary symptoms, bleeding, previous cancers, infections, and urinary procedures. The examination may include the genitals, pelvis, rectum, and groin lymph nodes. A lump may sometimes be felt along the urethra.

A clinician may arrange urine tests to look for blood, infection, or abnormal cells. Urine cytology examines cells shed into urine, but it cannot reliably confirm or exclude every urethral cancer.

The test that usually confirms the diagnosis is a biopsy. During urethroscopy or cystourethroscopy, a thin instrument with a camera is passed through the urethra. The urethra and bladder can be inspected, and a small tissue sample can be removed. A pathologist then examines the tissue under a microscope to identify whether cancer is present and what type it is.

If cancer is found, imaging helps establish its stage. Stage describes the tumor's size, how deeply it has grown, and whether it has spread. MRI can show the urethra and nearby soft tissues in detail. CT scans may assess the chest, abdomen, pelvis, and lymph nodes. Other scans are used when the findings or symptoms suggest they would be helpful.

The pathology report may also describe the grade. Grade indicates how abnormal the cells look and can give information about how quickly the cancer may behave.

Treatment and management

Treatment is planned around the cancer's location, cell type, size, stage, and grade. Your general health, urinary function, and preferences also matter. Because urethral cancer is uncommon, care is often coordinated by a team experienced in urinary and pelvic cancers.

Surgery is a central treatment for many cancers that have not spread widely. A small, superficial tumor may sometimes be removed through the urethra or with surgery that preserves nearby organs. A larger or more deeply invasive tumor may require removal of part or all of the urethra and possibly nearby tissue.

Depending on where the cancer is located, more extensive surgery may involve part of the penis, bladder, prostate, vagina, or other pelvic structures. If the normal route for urine is removed, a surgeon creates another way for urine to leave the body. This is called urinary diversion. The proposed operation and its effects should be explained before treatment.

Radiation therapy uses high-energy beams to damage cancer cells. It may be used instead of surgery in selected situations or combined with chemotherapy. It can also help control a tumor that cannot be removed or ease symptoms from advanced cancer.

Chemotherapy uses medicines that travel through the bloodstream. It may be given before surgery for some locally advanced cancers, combined with radiation, or used when cancer has spread. The medicines chosen are influenced by the cancer's cell type and the person's health.

For some advanced cancers, immunotherapy or another targeted treatment may be considered based on the cancer type, previous treatment, and laboratory testing of the tumor. Clinical trials may also provide access to treatments being studied. Evidence is limited because this cancer is uncommon.

Treatment decisions often balance cancer control against urinary, sexual, and reproductive function. Asking for an explanation of organ-preserving options and their trade-offs can help you take part in that decision.

Complications

The cancer itself may narrow or block the urethra. This can cause urinary retention, repeated infections, kidney problems, bleeding, or pain. Cancer may also grow into nearby organs or spread through lymph nodes to other parts of the body.

Possible treatment effects depend on the area treated. Surgery can change the direction or control of urination and may affect sexual function, sensation, body image, or fertility. Some people need a catheter temporarily or learn to manage a urinary diversion.

Radiation can irritate the bladder, urethra, bowel, skin, or genital tissues. Some effects improve after treatment, while scarring or narrowing may appear later. Chemotherapy and other systemic treatments can cause broader side effects, which depend on the medicines used.

Rehabilitation, continence services, sexual health support, and psychological care can help with these effects. New urinary problems after treatment should be reported because some can be treated.

Prevention

There is no reliable way to prevent every case of urethral cancer. Many people who develop it have no avoidable cause.

HPV vaccination prevents infection with HPV types linked to several cancers. It may reduce the chance of HPV-related disease, but it is not a guarantee against urethral cancer. Barrier protection during sex lowers exposure to many sexually transmitted infections but does not remove all HPV risk.

Seek care for persistent urinary infections, urethral discharge, unexplained bleeding, or difficulty urinating. Treating these problems is important for urinary health, although it has not been proven to prevent every urethral cancer.

If you have had bladder cancer, attend the follow-up arranged for you. Surveillance may include checking the urethra when your original cancer or surgery places it at risk.

Living with it and what to expect

What happens over months and years is closely related to the cancer's stage and location. Small cancers confined to the urethra may be treated with the aim of cure. Cancers that have grown deeply into nearby tissue, reached lymph nodes, or spread to distant organs are harder to cure and may require several forms of treatment.

Recovery after local treatment may involve temporary discomfort, a catheter, and gradual improvement in urination. More extensive surgery can produce permanent changes in how urine leaves the body. Specialist nurses can teach practical care and help you adjust to equipment or body changes.

Follow-up is important because urethral cancer can return in the urethra, nearby tissues, lymph nodes, or distant organs. Follow-up may include physical examinations, urethroscopy, urine tests, or scans. The type and timing are tailored to the original tumor and treatment because there is no single schedule suitable for everyone.

Many people continue their usual relationships, work, and activities after recovery, although treatment may require adjustments. Urinary changes, fatigue, sexual concerns, or anxiety about recurrence can last longer than the visible healing period. These concerns are appropriate reasons to request support.

If cancer cannot be cured, treatment may still slow its growth, reduce bleeding or blockage, and help preserve comfort and daily function. Palliative care can be provided alongside cancer treatment at any stage to address symptoms and quality of life.

When to get medical help

Arrange a routine medical appointment if you notice blood in your urine, urethral bleeding or discharge, a persistent weak stream, pain when urinating, or a new lump near the urethra. These symptoms usually have causes other than cancer, but they should be checked if they persist or recur.

If you have been treated for urethral cancer, contact your cancer team promptly about new bleeding, worsening urinary symptoms, unexplained weight loss, persistent pelvic pain, or a new groin lump. Do not wait for the next routine follow-up visit.

Seek urgent medical care if you cannot pass urine, especially with increasing lower abdominal pain. Heavy bleeding, large blood clots, or fever with difficulty urinating also needs urgent assessment.

Call emergency services for severe uncontrolled bleeding, fainting, confusion, or other signs of a serious immediate illness.

Common questions

Is urethral cancer the same as bladder cancer?

No. Urethral cancer starts in the urethra, while bladder cancer starts in the bladder lining. Some are made from the same type of cell, and bladder cancer can recur in or extend into the urethra, but they are classified according to where they began.

Can urethral cancer be cured?

Sometimes. Cure is more likely when the tumor is small, confined to the urethra, and can be fully treated. Cancer involving nearby organs, lymph nodes, or distant sites is more difficult to cure, although treatment may still control it.

Does blood in my urine mean I have urethral cancer?

No. Blood in urine has many possible causes, including infection, stones, prostate conditions, bladder problems, and kidney disease. It should still be medically assessed, even if it occurs only once.

Where does urethral cancer spread?

It may first grow into nearby structures or spread to lymph nodes in the groin or pelvis. More advanced cancer can reach organs such as the lungs, liver, or bones. Scans help determine whether spread has occurred.

Will treatment change how I urinate?

It may. Limited treatment may preserve normal urination, while removal of much of the urethra or bladder requires a new route for urine. Your surgical team should explain the expected permanent and temporary changes before treatment.

Can urethral cancer come back after treatment?

Yes. Recurrence can happen in the urethra, nearby tissue, lymph nodes, or elsewhere. The risk is shaped by the original stage, grade, location, and treatment, which is why planned follow-up remains important.

Sources

- National Cancer Institute. Urethral Cancer Treatment \(PDQ®\)-Patient Version
- National Cancer Institute. Urethral Cancer Treatment \(PDQ®\)-Health Professional Version
- European Association of Urology. Guidelines on Primary Urethral Carcinoma
- Canadian Cancer Society. Urethral cancer
- Gakis G, Witjes JA, Compérat E, and colleagues. "European Association of Urology Guidelines on Primary Urethral Carcinoma." European Urology . 2013;64(5):823-830.
- Janisch F, Abufaraj M, Fajkovic H, and colleagues. "Current Disease Management of Primary Urethral Carcinoma." European Urology Focus . 2019;5(5):722-734.