CONDITION

Urethral stricture

A urethral stricture is scar tissue that narrows the tube carrying urine out of the body.

WHAT IT IS
Scar narrowing of the tube that carries urine out

BODY SYSTEM
Urinary system

MAIN SYMPTOMS
Weak stream, straining, spraying, incomplete emptying

WHAT CAUSES IT
Injury, procedures, inflammation, infection, or unknown causes

HOW IT IS DIAGNOSED
Cystoscopy or urethrogram, often with urine-flow testing

MAIN TREATMENT
Dilation, internal incision, or reconstructive surgery

CAN IT BE CURED?
Sometimes - reconstruction can give lasting relief

IS IT AN EMERGENCY?
Sometimes - inability to pass urine requires urgent care

LONG-TERM OUTLOOK
Usually manageable, but narrowing can return after treatment

Overview

The urethra is the tube that carries urine from the bladder to the outside of the body. A urethral stricture is an area where scar tissue has made this tube narrower.

The narrowing can slow or partly block urine flow. A severe stricture may prevent the bladder from emptying. This can lead to urinary infections, bladder problems, or, less commonly, kidney damage.

Strictures are more common in people with a penis because their urethra is longer and more exposed to injury and medical instruments. However, people of any sex can develop one.

A stricture may be short or may involve a longer part of the urethra. Its location, length, cause, and previous treatments all affect how it is managed. Some narrowings remain stable, while others gradually worsen or return after treatment.

Symptoms

Symptoms often develop slowly. You may first notice that urinating takes longer or that the stream is not as strong as before.

Possible symptoms include:

Some strictures cause few symptoms until the opening becomes very narrow. Similar symptoms can also come from an enlarged prostate, infection, bladder conditions, pelvic floor problems, or medicines. Tests are needed to identify the cause.

Complete inability to pass urine is called acute urinary retention. This is an urgent problem, especially when the lower abdomen becomes painful or swollen.

- A weak, thin, split, or spraying urine stream
- Straining or pushing to begin or continue urinating
- Taking a long time to empty the bladder
- Feeling that the bladder has not emptied completely
- Dribbling after urination
- Needing to urinate more often or more urgently
- Pain or burning when passing urine
- Repeated urinary tract infections
- Blood in the urine or semen
- Reduced force of ejaculation

Causes and risk factors

A stricture forms when injury or inflammation leads to scarring in or around the urethra. In many cases, no definite cause is found.

Medical procedures are a common cause. A catheter, surgical instrument, or scope passed through the urethra can sometimes damage its lining. Risk may be greater after difficult, repeated, or long-term catheter use, but most people who need a catheter do not develop a stricture.

Other causes and risk factors include:

Strictures are not usually inherited. They are not caused by poor hygiene or by something you ate.

A narrowing near the bladder outlet after prostate surgery may be called a bladder neck contracture or urethral stenosis. These problems can produce similar symptoms but may require different treatment.

- A pelvic fracture or direct injury to the area between the legs
- Previous prostate, bladder, urethral, or genital surgery
- Radiation treatment involving the pelvis
- Earlier surgery for hypospadias, where the urethral opening developed in an unusual position
- Sexually transmitted infections that inflame the urethra, particularly if untreated
- Lichen sclerosus, a long-term inflammatory skin condition affecting genital skin
- Previous treatment for another urethral stricture

Diagnosis

Assessment usually begins with questions about your symptoms, past operations, catheter use, infections, injuries, and previous stricture treatments. The genital area may be examined for scarring, inflammation, or signs of lichen sclerosus.

A urine test can check for blood or infection. Blood tests may be used if there is concern about kidney function, but they do not confirm a stricture.

Urine-flow testing measures how quickly you urinate and the shape of the flow pattern. An ultrasound scan can then estimate how much urine remains in the bladder. These tests can show that urine flow is obstructed, but they cannot always show what is causing it.

Tests that can confirm and examine a stricture include:

An ultrasound of the urethra or other imaging may be helpful in selected cases. Not everyone needs every test.

- Cystoscopy: A thin camera is passed gently into the urethra to look for narrowing
- Retrograde urethrogram: Contrast liquid is placed into the urethra before X-rays are taken to show the location and length of the stricture
- Voiding cystourethrogram: X-rays are taken while urine or contrast leaves the bladder, often to examine the urethra beyond a severe narrowing

Treatment and management

Treatment is based on how much the stricture affects urine flow, whether the bladder empties safely, and the narrowing's location and length. Your overall health, previous procedures, and preferences also matter.

A mild stricture that causes little difficulty may sometimes be monitored. Follow-up may include symptom checks, urine-flow testing, and measurement of urine left in the bladder.

Urethral dilation stretches the narrowed area using gradually larger instruments or a balloon. It can improve flow without open surgery, but scar tissue may tighten again.

Internal urethrotomy uses a small camera and blade or other device to cut the scar from inside the urethra. It is also called direct visual internal urethrotomy. It is most useful for selected short strictures. Recurrence is common after repeated dilation or urethrotomy, particularly with longer or complex strictures.

Some people are taught intermittent self-catheterisation after an endoscopic treatment. Passing a catheter at planned intervals may help keep the channel open, but it does not remove the underlying scar. It is not suitable or acceptable for everyone.

Urethroplasty is reconstructive surgery. The surgeon may remove a short scarred section and reconnect the healthy ends. A longer area may be widened using a graft, often tissue taken from inside the cheek. Urethroplasty generally offers a better chance of lasting improvement than repeated endoscopic procedures, although recurrence is still possible.

For complex strictures, another option may be a perineal urethrostomy. This creates a new urinary opening in the area between the legs, allowing urine to bypass the narrowed section.

If urine cannot leave the bladder, urgent drainage is needed. A catheter may be placed through the urethra if this can be done safely. A suprapubic catheter, inserted into the bladder through the lower abdomen, may be used when the urethra cannot be crossed or needs to rest.

People with female anatomy may be treated with dilation or urethral reconstruction, depending on the cause and extent of the narrowing. Specialist assessment is important because true female urethral stricture is uncommon and can be difficult to distinguish from other causes of urinary symptoms.

Complications

An untreated or severe stricture can cause urine to remain in the bladder. This may lead to repeated urinary infections, bladder stones, or weakening and thickening of the bladder muscle. Long-standing severe obstruction can occasionally affect the kidneys.

A sudden complete blockage causes acute urinary retention. The bladder may become painful

and swollen, and it must be drained.

Treatment can also have complications. These may include bleeding, infection, discomfort, catheter problems, or another stricture. Urethral surgery can sometimes affect ejaculation, erections, sensation, or urine control, although the risks differ by procedure and stricture location.

Scar tissue can return after any treatment. This does not mean that treatment was performed incorrectly. It reflects how urethral scar tissue can behave over time.

Prevention

Not every urethral stricture can be prevented. Strictures caused by necessary medical treatment, an unexpected injury, lichen sclerosus, or an unknown process may occur despite appropriate care.

Careful catheter and instrument placement by trained healthcare professionals helps reduce avoidable urethral injury. If you use a catheter at home, follow the technique and catheter plan provided by your healthcare team. Do not force a catheter that will not pass.

Using barrier protection during sex and getting prompt testing and treatment for a possible sexually transmitted infection can lower the chance of infection-related urethral inflammation. This does not prevent strictures caused by other factors.

Protective equipment may reduce the risk of some work, sport, or cycling-related injuries, but it cannot remove all risk.

Living with it and what to expect

Some people need one procedure and have long-lasting relief. Others experience recurrent narrowing over months or years and need further monitoring or treatment. Longer strictures, inflammatory conditions, and strictures that have already returned can be more difficult to manage.

After a procedure, you may need a urinary catheter while the urethra heals. Recovery time and limits on lifting, cycling, work, exercise, or sexual activity differ according to the treatment. Follow the plan provided by your surgical team rather than restarting activities based only on how you feel.

Follow-up is important even when urine flow improves. It may involve questions about symptoms, urine-flow testing, measurement of urine remaining in the bladder, or cystoscopy

or imaging if recurrence is suspected.

Pay attention to changes in stream strength, the time needed to urinate, repeated infections, or increasing difficulty emptying. These can be early signs that the narrowing has returned.

Most people can continue their usual work, relationships, exercise, and travel after recovery. If symptoms or repeated procedures affect your sleep, sexual wellbeing, or confidence, these concerns are reasonable to discuss during routine follow-up.

When to get medical help

Arrange a routine appointment if you develop a persistently weak or spraying stream, need to strain, take much longer to urinate, or repeatedly feel that your bladder has not emptied. Recurrent urinary infections, blood in the urine, or steadily worsening symptoms also need assessment.

Seek urgent medical advice if you can pass only a few drops despite a strong need to urinate, particularly if your lower abdomen is becoming painful or swollen.

Get emergency help if you cannot pass urine at all and have significant lower abdominal pain. Fever, chills, vomiting, confusion, or feeling very unwell alongside difficulty urinating also requires urgent assessment because infection and blockage can occur together.

After a procedure, follow the specific contact instructions from your surgical team. Seek prompt help if a catheter stops draining, falls out, or is associated with worsening pain, fever, heavy bleeding, or large blood clots.

Common questions

Can a urethral stricture heal by itself?

Usually not. Once mature scar tissue has narrowed the urethra, it rarely disappears without treatment. A mild stricture may remain stable and only require monitoring, but worsening difficulty urinating should be reassessed.

Is a urethral stricture cancer?

No. A stricture is scar-related narrowing, not cancer. However, blood in the urine, pain, or obstructed urine flow can have other causes. These symptoms should be assessed rather than assumed to come from a stricture.

Can a urethral stricture come back after treatment?

Yes. Recurrence can happen after dilation, internal urethrotomy, or reconstructive surgery.

The chance is influenced by the stricture's length, location, cause, and previous treatments. Repeated endoscopic procedures are often less durable than urethroplasty for recurrent or complex strictures.

Will I need a catheter?

You may need one temporarily after dilation, urethrotomy, or urethroplasty. If the urethra cannot be used safely, urine may be drained through a suprapubic catheter in the lower abdomen. Long-term catheter use is not necessary for everyone.

Will it affect sex, erections, or fertility?

A stricture may reduce the force of ejaculation, and pain or worry can affect sexual activity. It does not usually cause infertility or erection problems by itself, but the underlying injury or some operations can affect sexual function. Discuss new changes during follow-up.

Does urinating after sex prevent a stricture?

No. Urinating after sex does not prevent scar tissue from forming. Barrier protection and timely treatment of sexually transmitted infections can reduce infection-related urethral inflammation, but many strictures have unrelated causes.

Sources

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