CONDITION

Ureterocele

A ureterocele is a pouch-like swelling where a tube from the kidney enters the bladder.

WHAT IT IS
A congenital pouch at the bladder end of a ureter

BODY SYSTEM
Kidneys and urinary tract

MAIN SYMPTOMS
Often none, urinary infections, painful urination, side pain

WHAT CAUSES IT
Urinary tract development before birth; exact cause unknown

HOW IT IS DIAGNOSED
Urinary tract ultrasound, with cystoscopy in some cases

MAIN TREATMENT
Monitoring, infection care, or procedures to improve urine drainage

CAN IT BE CURED?
Sometimes - procedures can correct obstruction

IS IT AN EMERGENCY?
Sometimes - fever with infection or inability to urinate

LONG-TERM OUTLOOK
Usually good with preserved kidney function and appropriate follow-up

Overview

A ureterocele is a pouch-like swelling at the lower end of a ureter. The ureters are the tubes that carry urine from the kidneys to the bladder. In a ureterocele, part of a ureter balloons where it passes through the bladder wall.

The condition develops before birth. It may affect one or both sides of the urinary tract. Some ureteroceles are small and cause no problems. Others partly block urine flow, leading to swelling of the ureter or kidney.

A ureterocele is often linked to a duplex kidney, also called a duplicated collecting system. This means one kidney has two drainage systems and usually two ureters instead of one. The ureterocele commonly affects the tube draining the upper part of that kidney.

Ureteroceles matter because poor drainage can increase the risk of urinary tract infections

and, in some cases, kidney damage. However, many are found early through pregnancy or childhood ultrasound. Treatment is based on symptoms, drainage, urine backflow, and how well the affected kidney tissue works.

Symptoms

A ureterocele may not cause symptoms. It may first be noticed during an ultrasound in pregnancy or during a scan for another reason.

When symptoms occur, they can include:

Urine trapped above a blockage may stretch the kidney. This is called hydronephrosis. It usually does not cause a visible symptom by itself, although significant swelling may cause side or abdominal pain.

Rarely, a large ureterocele can obstruct the bladder outlet and make it difficult to urinate. In a girl, ureterocele tissue may occasionally extend through the urethra, the opening where urine leaves the body, and appear as a small mass outside the body.

Adults with a ureterocele may have urinary infections, kidney stones, blood in the urine, or episodes of side pain. Some have no symptoms and learn about it after imaging for another concern.

- Repeated urinary tract infections
- Fever, irritability, or poor feeding in a baby with an infection
- Pain or burning when passing urine
- Side, back, or abdominal pain
- Blood in the urine
- Difficulty starting urine or a weak urine stream
- New daytime wetting or unusually frequent urination

Causes and risk factors

A ureterocele forms while the urinary tract is developing before birth. The end of the ureter does not develop or open in the usual way, allowing it to swell like a small balloon inside or near the bladder.

The exact reason this happens is often unknown. It is not caused by anything a pregnant person did or did not do. Most cases occur without a clear family pattern.

The main associated condition is a duplex kidney. In this arrangement, the ureter linked to the ureterocele may drain a part of the kidney that works poorly. The second ureter may also allow urine to flow backward from the bladder toward the kidney. This backward flow is called vesicoureteral reflux.

A ureterocele can also occur with a single, otherwise normally arranged ureter. Its importance is determined more by obstruction, infections, reflux, and kidney function than by its size alone.

Diagnosis

Some ureteroceles are suspected during pregnancy when an ultrasound shows a swollen kidney, enlarged ureter, or cyst-like area in the bladder. Ultrasound after birth is usually used to examine the kidneys, ureters, bladder, and ureterocele more closely.

A person diagnosed later may first have an ultrasound because of urinary infections, pain, blood in the urine, or an abnormal finding on another scan.

Additional tests may be used to map the urinary tract and plan follow-up or treatment:

Urine testing is needed when an infection is suspected. Blood tests may be used if there are concerns about overall kidney function or a significant infection.

Not everyone needs every test. The choice depends on age, symptoms, ultrasound findings, previous infections, and whether a procedure is being considered.

- A voiding cystourethrogram uses X-rays while the bladder fills and empties. It checks for urine flowing backward toward the kidneys and for blockage at the bladder outlet.
- A kidney scan uses a small amount of radioactive tracer to measure drainage and how much each kidney, or each part of a duplex kidney, contributes to kidney function.
- MRI may provide detailed pictures without X-rays when the anatomy is complex.
- Cystoscopy uses a thin camera passed through the urethra to view the bladder and ureter openings. It may confirm the anatomy and can sometimes be used for treatment at the same time.

Treatment and management

Treatment is tailored to how the ureterocele affects urine drainage and kidney health. A small ureterocele without infections, significant obstruction, or loss of kidney function may be monitored with examinations and occasional imaging.

A urinary tract infection is treated with antibiotics like amoxicillin or doxycycline . Some

children may receive preventive antibiotics for a period while the urinary tract is being assessed or if their infection risk is considered high. This is not necessary for everyone.

A procedure may be recommended when there is significant blockage, repeated infection, worsening swelling, bladder outlet obstruction, or concern about kidney function.

One common procedure is endoscopic puncture or incision. A small camera is passed through the urethra, and an opening is made in the ureterocele so urine can drain more freely. This avoids an external incision. It may be the only procedure needed, but opening the ureterocele can sometimes lead to urine flowing backward up the ureter.

More extensive surgery may be needed when the anatomy is complex or problems continue. Options include moving the ureter to a new position in the bladder, joining two ureters together, or reconstructing part of the urinary tract. If one part of a duplex kidney has very little function and causes ongoing problems, surgery may remove that poorly working part. The functioning kidney tissue is preserved whenever possible.

A ureterocele that is blocking infected urine may need prompt drainage. The immediate aim is to relieve pressure and control the infection. Further reconstruction, if needed, may take place later.

Complications

Possible complications are mainly related to blocked or backward urine flow. They include:

A serious kidney infection can spread into the bloodstream, particularly when urine drainage is blocked. Early assessment of fever and urinary symptoms lowers the chance of this complication.

Procedures can also have complications, including bleeding, infection, continued obstruction, or reflux. Follow-up imaging helps check whether urine is draining as intended.

- Repeated bladder or kidney infections
- Hydronephrosis and continued stretching of the urinary tract
- Permanent damage to part of a kidney
- Vesicoureteral reflux after or without treatment
- Kidney or ureter stones
- Difficulty emptying the bladder

Prevention

A ureterocele cannot currently be prevented because it develops before birth and usually has no known avoidable cause. Routine prenatal care may detect urinary tract swelling, but it does not prevent the ureterocele from forming.

After diagnosis, follow-up can help prevent or limit complications. This may involve treating urinary infections promptly, completing recommended imaging, and checking kidney drainage and function over time.

For children who are toilet trained, regular bathroom use and treatment of constipation may support bladder health. These steps do not remove the ureterocele, but they may reduce other factors that contribute to urinary infections.

Living with it and what to expect

The course of a ureterocele is different for each person. Some remain stable and only need monitoring. Others need one or more procedures to improve drainage or manage reflux.

After endoscopic treatment, follow-up scans may show that the kidney and ureter are less swollen. Some people develop reflux or continue to have infections, which may lead to further testing or surgery. Complex duplex systems are more likely to need care over several stages than a small ureterocele in a single ureter.

Kidney tissue already severely damaged before treatment may not regain normal function. However, healthy tissue in the same kidney or the other kidney often provides enough function for everyday life. People with reduced kidney function may need longer-term checks of blood pressure, urine, and kidney blood tests.

Many children can take part in ordinary school, play, and sports once infection or obstruction is controlled. Adults without symptoms may only need periodic review. Follow-up is more important when there has been kidney damage, recurrent infection, reflux, or reconstructive surgery.

When to get medical help

Arrange routine follow-up as advised if a ureterocele has been found but is not causing current symptoms. Contact a healthcare professional promptly for new burning with urination, blood in the urine, side pain, repeated wetting, a weak urine stream, or symptoms of a urinary infection.

Seek urgent medical assessment for:

Go to emergency care if you or your child cannot pass urine, appears seriously unwell, becomes confused, has trouble breathing, or has signs of severe dehydration. Fever with a known urinary blockage also needs urgent assessment because infected urine may not drain normally.

- Fever with back or side pain, vomiting, or urinary symptoms
- A baby younger than 3 months with a temperature of 38°C or higher
- A child who is unusually sleepy, difficult to wake, or not feeding
- Severe or rapidly worsening abdominal, back, or side pain
- A new mass of tissue appearing at the urinary opening

Common questions

Is a ureterocele cancer?

No. A ureterocele is a structural condition that develops before birth. It is not a tumour and does not become cancer.

Can a ureterocele go away on its own?

The underlying pouch does not usually disappear on its own. A small ureterocele may remain harmless and need only monitoring. When drainage is blocked, a procedure can open or reconstruct the affected area.

Does every ureterocele need surgery?

No. Monitoring may be suitable when urine drains adequately, kidney function is preserved, and there are no significant infections or symptoms. Surgery is considered when the ureterocele is causing obstruction, infection, reflux, or kidney problems.

Can you live normally with one?

Many people do. Daily life is usually not restricted when kidney function is good and infections or obstruction are controlled. Some people need imaging or kidney checks over the long term.

Can a ureterocele damage the kidney?

It can if it causes prolonged obstruction, repeated kidney infections, or significant urine backflow. Sometimes the affected part of a duplex kidney developed poorly before birth and had limited function from the start. Treatment aims to protect the remaining healthy kidney tissue.

Can a ureterocele come back after surgery?

A treated ureterocele does not usually regrow, but drainage problems or reflux may remain or

develop afterward. Some people therefore need another procedure. Follow-up imaging checks the result rather than relying on symptoms alone.

Sources

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