CONDITION

Retroperitoneal inflammation

Retroperitoneal inflammation is swelling or irritated tissue in the space behind the lining of the abdomen.

WHAT IT IS
Inflammation behind the lining of the abdomen

BODY SYSTEM
Urinary, digestive, immune, and blood vessel systems

MAIN SYMPTOMS
Back or abdominal pain, nausea, urinary changes, fever

WHAT CAUSES IT
Often immune-related or unknown; sometimes infection, cancer, drugs, or treatment

HOW IT IS DIAGNOSED
CT or MRI; biopsy when the cause remains uncertain

MAIN TREATMENT
Treating the cause, reducing inflammation, relieving urinary blockage

CAN IT BE CURED?
Sometimes - treatable causes may resolve

IS IT AN EMERGENCY?
Sometimes - very little urine, severe illness, or sudden worsening

LONG-TERM OUTLOOK
Often controllable, though relapse or lasting organ damage can occur

Overview

The retroperitoneum is the space at the back of your abdomen, behind the thin lining called the peritoneum. It contains the kidneys, ureters, pancreas, major blood vessels, and several other structures. The ureters are the tubes that carry urine from the kidneys to the bladder.

"Retroperitoneal inflammation" is a description rather than one single disease. It means that imaging or another test has found inflamed tissue in this space. The inflammation may be limited to one organ, caused by an infection, or part of a wider immune condition.

One important form is retroperitoneal fibrosis . In this condition, ongoing inflammation leads to firm, scar-like tissue, often around the large blood vessel called the aorta. This tissue can surround or squeeze the ureters, causing urine to back up into the kidneys. Retroperitoneal fibrosis is often what clinicians mean when they discuss persistent retroperitoneal

inflammation.

Finding the cause matters because treatment is different for infection, immune-related inflammation, cancer, and inflammation caused by medicines or previous treatment. Protecting kidney function is often an early priority.

Symptoms

Symptoms depend on which structures are inflamed or compressed. Some people have vague symptoms that develop over weeks or months. Others become unwell more quickly, particularly when infection is involved.

Possible symptoms include:

Ureter blockage may not cause obvious urinary symptoms at first. A person can still pass urine even when one kidney is obstructed. If both ureters become severely blocked, urine output may fall and waste products can build up in the blood.

These symptoms can have many more common causes. They do not, by themselves, show that you have retroperitoneal inflammation.

- A dull ache in the lower back, side, abdomen, or groin
- Pain that does not clearly change with movement
- Nausea, reduced appetite, or unplanned weight loss
- Tiredness or a general feeling of being unwell
- Fever or chills, especially with infection
- Passing less urine than usual
- Blood in the urine or discomfort when urinating
- Swelling in one or both legs
- Testicular pain or swelling
- Constipation or other bowel symptoms

Causes and risk factors

In many cases of retroperitoneal fibrosis, no single trigger is found. This is called idiopathic , meaning the cause is unknown. The immune system appears to play a part by mistakenly maintaining inflammation around otherwise healthy tissue.

Some cases are related to IgG4-related disease , an immune condition that can cause swollen or scarred tissue in several organs. It may affect the pancreas, salivary glands, kidneys, lymph nodes, or blood vessels as well as the retroperitoneum.

Other possible causes of retroperitoneal inflammation include:

Smoking and previous asbestos exposure have been associated with idiopathic retroperitoneal fibrosis, but an association does not prove that either one directly caused an individual case.

A medicine should not be stopped because of a possible association without medical advice. The risks of stopping it suddenly may be greater than the suspected risk.

- Infection in a kidney, the pancreas, the spine, or nearby deep tissues
- Pancreatitis, which is inflammation of the pancreas
- Cancer in the retroperitoneum or cancer that has spread there
- Lymphoma, a cancer of infection-fighting lymph cells
- Bleeding, injury, or recent surgery
- Radiation treatment to the abdomen or pelvis
- A reaction associated with certain medicines
- Inflammation around the aorta or another large blood vessel

Diagnosis

Retroperitoneal inflammation is often first seen on a CT scan of the abdomen and pelvis. CT can show where the tissue is, whether it surrounds blood vessels or ureters, and whether urine is backing up into the kidneys.

MRI may provide more detail about soft tissue and can sometimes help assess whether inflammation is active. Ultrasound may show swollen kidneys, called hydronephrosis , but it usually cannot fully define the retroperitoneal tissue.

Blood and urine tests may check:

Tests for IgG4 and other immune markers may be useful in some situations. A normal result does not always rule out an immune-related condition.

A biopsy removes a small sample of tissue for examination under a microscope. It may be needed when imaging is unusual, cancer is possible, treatment has not worked as expected, or the cause remains unclear. Not everyone needs a biopsy.

No single symptom or blood test confirms all forms of retroperitoneal inflammation. Diagnosis usually combines imaging, laboratory results, medical history, and sometimes tissue testing.

- Kidney function
- Signs of inflammation
- Blood cell counts
- Liver and pancreas function
- Evidence of infection
- Urine for blood, protein, or infection

Treatment and management

Treatment is guided by the cause, the organs involved, and whether urine flow or blood flow is blocked.

If a ureter is significantly obstructed, the immediate aim may be to drain the kidney. A thin internal tube called a ureteric stent can hold the ureter open. Another option is a nephrostomy , in which a tube passes through the skin into the kidney to drain urine. These procedures relieve blockage but do not treat the underlying inflammation.

Immune-related or idiopathic retroperitoneal fibrosis is commonly treated with corticosteroids like prednisone or hydrocortisone , which reduce inflammation. Other medicines that change immune activity may be considered when steroids are unsuitable, the condition returns, or longer-term control is needed. Treatment choice and monitoring must be tailored to the person because these medicines can have important side effects.

Treatment for other causes may include:

Surgery may be considered when drainage procedures do not provide lasting relief or dense fibrosis continues to trap the ureters. Even after surgery, inflammation can return, so follow-up remains important.

Monitoring usually includes kidney blood tests, symptom review, and repeat imaging. The timing is based on the cause, treatment response, and degree of organ involvement.

- Antibiotics and drainage for a bacterial infection
- Treatment directed at pancreatitis or another inflamed organ
- Cancer treatment when a tumour or lymphoma is responsible
- Reviewing a medicine that may be contributing

- Surgery to free the ureters from surrounding fibrous tissue

Complications

The most important complication is ureter blockage. This can cause hydronephrosis and, if it continues, permanent kidney damage. Severe blockage of both ureters can lead to kidney failure.

Other possible complications include:

Complications also depend on the underlying cause. An abscess can spread infection, while cancer-related inflammation follows the course of the cancer.

Early relief of obstruction can protect kidney function, but recovery may be incomplete if damage was already advanced.

- Repeated urinary infections
- Persistent pain
- Narrowing or compression of major blood vessels
- Leg swelling from reduced blood or lymph drainage
- Blood clots in deep veins
- Bowel or nerve compression, although this is less common
- Side effects from corticosteroids or other immune treatments
- Return of inflammation after an initial response

Prevention

There is no proven way to prevent idiopathic or IgG4-related retroperitoneal inflammation. These conditions are not known to result from something a person did wrong.

Some secondary causes may be partly avoidable, but not all are. Avoiding smoking supports general blood vessel, kidney, and cancer health, although it cannot guarantee prevention of retroperitoneal fibrosis.

If a medicine may be involved, it should be reviewed by the clinician who prescribed it. Do not stop a prescribed medicine on your own.

Regular monitoring does not prevent inflammation from starting, but it can find returning inflammation or ureter blockage before major kidney damage develops.

Living with it and what to expect

The course depends mainly on the cause and whether organs have been damaged. In immune-related retroperitoneal fibrosis, inflammation often improves with treatment over several weeks or months. The scar-like tissue may shrink slowly or remain visible on scans even when it is no longer active.

Pain and general symptoms may improve before imaging returns toward normal. Kidney function may recover after urine flow is restored, but long-standing obstruction can leave permanent loss of function.

Relapse is possible after treatment is reduced or stopped. It does not always cause clear symptoms, which is why blood tests and imaging may continue after you feel better. Some people need several courses of treatment or longer-term immune therapy.

Stents and nephrostomy tubes need planned care and replacement or removal. Report new pain, fever, leakage, or a change in urine drainage rather than waiting for a routine appointment.

Many people can return to usual work, exercise, and family life once inflammation and obstruction are controlled. Others live with reduced kidney function, ongoing fatigue, treatment side effects, or repeated procedures. Cancer-related or severe infectious inflammation has a different outlook based on the underlying illness and response to treatment.

When to get medical help

Arrange a routine medical review if you develop persistent back, side, or abdominal pain; unexplained weight loss; ongoing tiredness; or a lasting change in urination. These symptoms often have other causes, but they deserve assessment.

If you have already been diagnosed, contact your care team promptly for returning pain, reduced urine output, leg swelling, fever, or worsening treatment side effects. Keep planned appointments for blood tests, scans, and tube or stent care even when you feel well.

Seek urgent medical help if you have:

Call emergency services for collapse, severe breathing difficulty, sudden chest or abdominal pain, or signs of shock such as cold, clammy skin with confusion.

- Very little or no urine
- Severe or rapidly worsening abdominal, back, or side pain

- Fever with chills, vomiting, or pain near the kidneys
- New confusion, fainting, marked weakness, or difficulty staying awake
- A nephrostomy tube that stops draining, comes out, or is accompanied by fever

Common questions

Is retroperitoneal inflammation the same as retroperitoneal fibrosis?

Not always. Inflammation is a broad finding with several possible causes. Retroperitoneal fibrosis is a specific pattern in which chronic inflammation produces scar-like tissue, often around the aorta and ureters.

Is retroperitoneal inflammation cancer?

Usually not, but some cancers can cause a similar-looking mass or inflammatory reaction. Imaging, blood tests, and sometimes a biopsy are used to tell the difference. A recommendation for biopsy does not mean that cancer has been confirmed.

Can retroperitoneal fibrosis go away?

Active inflammation can improve substantially with treatment, and the tissue may shrink. Some fibrosis may remain on scans. Symptoms can settle even when residual tissue is visible, but continued monitoring may be needed.

Why does it affect the kidneys?

The kidneys sit in the retroperitoneum, and their drainage tubes pass through it. Inflamed or fibrous tissue can squeeze the ureters, causing urine to back up. The kidneys themselves may initially be normal even though their drainage is blocked.

Will I need surgery?

Not everyone does. Medicines may control immune-related inflammation, while a stent or nephrostomy can relieve urinary blockage. Surgery may be considered if obstruction continues, returns repeatedly, or cannot be managed with drainage tubes.

Can it come back after treatment?

Yes. Relapse can happen, particularly in immune-related retroperitoneal fibrosis. It may be found through symptoms, kidney blood tests, or follow-up imaging. Returning inflammation can usually be reassessed and treated, but the approach is individual.

Sources

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