CONDITION

Peritonitis

Peritonitis is inflammation, usually caused by infection, of the thin membrane lining the abdominal cavity and organs.

WHAT IT IS
Inflammation of the membrane lining the abdomen

BODY SYSTEM
Digestive and abdominal organs

MAIN SYMPTOMS
Severe abdominal pain, tenderness, swelling, fever

WHAT CAUSES IT
Usually infection from bowel leakage, ascites, or dialysis

HOW IT IS DIAGNOSED
Examination, blood tests, imaging, and abdominal fluid analysis

MAIN TREATMENT
Urgent antibiotics and control of the infection source

CAN IT BE CURED?
Sometimes - source control and antibiotics can resolve it

IS IT AN EMERGENCY?
Yes - suspected acute peritonitis needs immediate hospital assessment

LONG-TERM OUTLOOK
Often recovery, but severe illness and recurrence can occur

Overview

Peritonitis is inflammation of the peritoneum. This is the thin, moist membrane lining the inside of your abdomen and covering many abdominal organs.

It is usually caused by a bacterial or fungal infection. Infection may enter the abdomen through a hole or leak in the stomach or bowel. It can also develop in abdominal fluid called ascites, or during peritoneal dialysis.

Peritonitis may affect one area or spread throughout the abdomen. Without prompt treatment, infection can enter the bloodstream and affect organs elsewhere in the body. Suspected acute peritonitis therefore needs urgent hospital assessment.

Doctors sometimes describe peritonitis by how it began. Primary, or spontaneous, peritonitis

develops without a visible hole in an abdominal organ. Secondary peritonitis results from a problem such as a burst appendix, damaged bowel, or surgical leak. Peritonitis associated with peritoneal dialysis develops when germs reach the abdomen through or around the dialysis catheter.

Symptoms

Abdominal pain is the main symptom. It is often severe, constant, and made worse by movement, coughing, or touching the abdomen. Your abdominal muscles may tighten without you meaning to, making your abdomen feel firm or rigid.

Other possible symptoms include:

Symptoms are not always dramatic. Older adults, people taking medicines that suppress the immune system, and people who are seriously unwell may have less pain or fever than expected.

Spontaneous bacterial peritonitis in someone with ascites may cause fever, new abdominal discomfort, confusion, worsening kidney function, or a general decline. Sometimes the signs are subtle.

During peritoneal dialysis, cloudy drainage fluid is an important warning sign. Abdominal pain, fever, nausea, or problems draining the fluid may also occur. Contact your dialysis service immediately if the fluid becomes cloudy, even if you otherwise feel well.

- Abdominal tenderness or swelling
- Fever, chills, nausea, or vomiting
- Loss of appetite
- Difficulty passing stool or gas
- A fast heartbeat, weakness, or reduced urination

Causes and risk factors

Secondary peritonitis usually begins when bacteria and digestive material escape from an abdominal organ. Possible causes include a burst appendix, a perforated stomach ulcer, diverticulitis, bowel injury, reduced blood supply to the bowel, or a leak after abdominal surgery. Severe inflammation of the gallbladder or pancreas can also irritate the peritoneum.

Spontaneous bacterial peritonitis mainly affects people who have ascites, often because of

advanced liver scarring called cirrhosis. Bacteria may cross from the bowel or travel through the bloodstream into the abdominal fluid without creating a visible hole.

Peritoneal dialysis uses the abdominal lining to remove waste from the blood. Germs can enter through the catheter connection or catheter exit site. Infection can occur even when careful technique is used.

Less often, the peritoneum is irritated by bile, pancreatic fluid, blood, or stomach contents before infection develops. Fungal peritonitis is uncommon but can occur after abdominal surgery or during peritoneal dialysis.

Factors that raise the risk include:

Peritonitis itself is not inherited.

- Cirrhosis with ascites
- Peritoneal dialysis
- Recent abdominal surgery, injury, or medical procedures
- Bowel conditions that can cause a blockage, leak, or perforation
- A weakened immune system

Diagnosis

A healthcare team will ask about your symptoms, medical conditions, recent surgery, and dialysis treatment. They will examine your abdomen and check your temperature, blood pressure, heart rate, breathing, and alertness.

Blood tests can look for inflammation, infection, dehydration, kidney or liver problems, and signs that organs are under strain. Blood cultures may identify germs in the bloodstream.

A CT scan often helps find a perforation, abscess, blockage, or other source of infection. Ultrasound or X-rays may be used in certain situations. Imaging should not delay urgent treatment if you are very unwell.

If you have ascites, a sample may be taken through a needle in a procedure called paracentesis. The laboratory counts infection-fighting cells and cultures the fluid for germs. This fluid analysis is central to confirming spontaneous bacterial peritonitis.

For someone receiving peritoneal dialysis, the drained dialysis fluid is checked for white blood cells and sent for culture. Keep the cloudy drainage bag if your dialysis service tells you to bring it for testing.

Sometimes secondary peritonitis is confirmed during surgery or while draining an abdominal

abscess.

Treatment and management

Peritonitis is usually treated in hospital. Treatment may begin before every test result is available because delays can allow infection to spread.

Antibiotics like amoxicillin or doxycycline are commonly given into a vein. The choice may be adjusted when cultures identify the germ. Antifungal treatment may be needed if a fungal infection is found or strongly suspected.

Fluids can support blood pressure and kidney function. Treatment may also include pain relief, anti-nausea medicine, oxygen, and close monitoring. People with severe sepsis or organ problems may need intensive care.

Secondary peritonitis often requires "source control." This means stopping the leak or removing the infected material. Depending on the cause, this may involve surgery to repair a hole, remove damaged tissue, or wash out the abdomen. Some abscesses can be drained through a tube placed using imaging guidance.

Spontaneous bacterial peritonitis is treated with antibiotics. Some people also receive intravenous albumin, a blood protein, to reduce the risk of kidney complications. After recovery, selected people may be offered preventive antibiotics because recurrence can be common. This decision is based on liver health and individual risks.

Peritoneal dialysis-associated peritonitis is often treated with antibiotics placed directly into the dialysis fluid. A badly infected or fungal-infected catheter may need to be removed. Dialysis may be interrupted or temporarily changed to haemodialysis while the infection is managed.

Complete treatment as directed, even if you begin to feel better. Follow-up tests may be needed to check whether the infection has cleared and whether the underlying cause has been controlled.

Complications

Peritonitis can lead to an abscess, which is a pocket of infected fluid. Infection can also enter the bloodstream and cause sepsis, a harmful whole-body response that may affect blood pressure, kidneys, lungs, or other organs.

Healing after inflammation or surgery can leave bands of scar tissue called adhesions. These

sometimes cause long-term pain or a future bowel blockage, although many people never develop symptoms from them.

Peritonitis may return, particularly in people with cirrhosis and ascites or those continuing peritoneal dialysis. Severe illness, delayed source control, and major underlying health problems can worsen the outlook.

Prevention

Not every episode can be prevented. A sudden bowel perforation, appendicitis, or surgical leak may occur without a reliable way to predict it.

If you use peritoneal dialysis, careful handwashing, clean connection technique, and proper catheter exit-site care reduce infection risk. Follow the training provided by your dialysis service. Report cloudy drainage, abdominal pain, or catheter-site redness immediately.

People who have recovered from spontaneous bacterial peritonitis may be offered preventive antibiotics. These medicines are not suitable for everyone and should not be started without specialist guidance.

Keeping follow-up appointments for cirrhosis, bowel conditions, and recent abdominal surgery may help problems be recognised earlier. Seek prompt care for new severe abdominal symptoms rather than trying to manage them at home.

Living with it and what to expect

The course depends on what caused the inflammation, how quickly it was treated, and whether infection affected other organs. Some people improve after antibiotics and drainage. Others need major surgery and a longer hospital stay.

After discharge, tiredness, reduced appetite, and abdominal discomfort may continue for days or weeks. Recovery can take longer after surgery, sepsis, or an extended stay in intensive care. Your follow-up plan may include wound or drain care, blood tests, imaging, or review by a surgical, liver, or dialysis team.

If cirrhosis caused spontaneous bacterial peritonitis, the infection can be treated, but the liver condition remains. Ongoing specialist care is important because ascites and infection may return. Some people with advanced liver disease may be assessed for liver transplantation.

After dialysis-associated peritonitis, many people can continue peritoneal dialysis. Repeated, severe, or fungal infections may damage the peritoneum or require a change in dialysis

method.

Many people recover when the source is controlled promptly, but no single recovery pattern applies to everyone. Ask at follow-up which symptoms are expected during healing and which should lead to an earlier review.

When to get medical help

Suspected peritonitis needs emergency assessment. Go to an emergency department now for new or worsening severe abdominal pain, especially when the abdomen is very tender, swollen, or rigid.

Emergency warning signs include:

Call emergency services if you may be developing shock, cannot travel safely, or someone is becoming unresponsive.

If you have ascites, seek urgent assessment for fever, new abdominal pain, confusion, vomiting, or a sudden decline. If you use peritoneal dialysis, contact your dialysis service immediately for cloudy drainage fluid or new abdominal pain. Do not wait for a routine appointment.

Routine follow-up is still important after treatment. Contact your care team sooner if pain or fever returns, a wound becomes red or drains fluid, a drain stops working, or you cannot eat, drink, pass stool, or manage the recovery plan.

- Fainting, confusion, extreme drowsiness, or difficulty waking
- Fast or difficult breathing
- Cold, clammy, pale, or mottled skin
- Repeated vomiting or inability to keep fluids down
- Very little urine
- Severe pain with fever or a rapidly worsening condition

Common questions

Can peritonitis go away on its own?

It is not safe to wait for suspected peritonitis to settle. Infection may spread quickly, and a bowel leak or abscess will not usually resolve without medical treatment. Urgent assessment helps identify whether antibiotics, drainage, or surgery is needed.

Does peritonitis always need surgery?

No. Spontaneous bacterial peritonitis and many dialysis-related infections are usually treated without abdominal surgery. Surgery or drainage is more likely when there is a perforation, damaged bowel, abscess, or ongoing leak.

How long does recovery take?

Hospital treatment may last several days or longer. Recovery at home can take weeks, especially after surgery or sepsis. The source of infection, organ complications, and your health before the illness all affect the timeline.

Is peritonitis contagious?

Peritonitis itself does not normally spread from person to person. It usually develops when germs enter the abdominal cavity from inside the body, a catheter, or a surgical problem.

Can peritonitis come back?

Yes. Recurrence is a particular concern after spontaneous bacterial peritonitis and during peritoneal dialysis. Follow-up care, catheter hygiene, and preventive treatment for selected people can reduce risk but cannot remove it completely.

What is the difference between appendicitis and peritonitis?

Appendicitis is inflammation of the appendix. If the appendix leaks or bursts, bacteria can spread into the abdominal cavity and cause peritonitis. Peritonitis can also have many other causes.

Sources

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