CONDITION

Peritonitis - secondary

Secondary peritonitis is serious inflammation and infection of the abdominal lining caused by a leak, injury, or hole in an abdominal organ.

WHAT IT IS
Abdominal lining inflammation from an organ leak or perforation

BODY SYSTEM
Digestive system and abdominal cavity

MAIN SYMPTOMS
Severe abdominal pain, tenderness, swelling, fever

WHAT CAUSES IT
Infection after leakage, perforation, injury, or surgery

HOW IT IS DIAGNOSED
Examination, CT imaging, blood tests, and sometimes surgery

MAIN TREATMENT
Urgent antibiotics, supportive care, and source control

CAN IT BE CURED?
Yes - when the source is successfully controlled

IS IT AN EMERGENCY?
Yes - urgent hospital assessment is required

LONG-TERM OUTLOOK
Often good after treatment; delays increase serious complications

Overview

The peritoneum is a thin layer of tissue lining the inside of your abdomen and covering many abdominal organs. Peritonitis means this lining has become inflamed.

Secondary peritonitis happens when material escapes from an organ into the abdominal cavity. This may include bacteria, bowel contents, bile, stomach acid, or digestive enzymes. A common reason is a hole, called a perforation, in the stomach or bowel. Leakage can also happen after an injury or an operation.

This is different from spontaneous bacterial peritonitis, which usually develops without a hole in an organ and mainly affects people with severe liver disease and fluid in the abdomen.

Secondary peritonitis is a medical emergency. Infection and inflammation can spread through

the abdominal cavity and enter the bloodstream. Prompt hospital treatment aims to control the leak or damaged organ, treat infection, and support the body while it recovers.

Symptoms

Pain is usually the main symptom. It may begin near the affected organ and then spread across the abdomen. Movement, coughing, or touching the abdomen can make it worse.

Symptoms may include:

Older adults, people with weakened immune systems, and people taking medicines that reduce inflammation may have less obvious pain or fever. After abdominal surgery, new pain, fever, vomiting, or a sudden decline in recovery can suggest a leak or infection.

If infection affects the whole body, it can cause sepsis. Sepsis is a dangerous reaction to infection that may impair blood flow and organ function. Warning signs can include confusion, faintness, clammy or mottled skin, severe breathlessness, or very little urine.

- Severe or steadily worsening abdominal pain
- Marked tenderness or a hard, tense abdomen
- Abdominal swelling or bloating
- Fever, chills, or feeling unusually cold
- Nausea, vomiting, or loss of appetite
- Difficulty passing stool or gas
- Diarrhoea in some cases
- A fast heartbeat or rapid breathing
- Passing less urine than usual

Causes and risk factors

Secondary peritonitis is usually caused by a leak or perforation in the digestive tract. Bacteria from the bowel can then enter spaces where they do not normally belong.

Possible causes include:

Pancreatic fluid, bile, or stomach acid may first cause chemical irritation. Infection can then follow.

Risk is higher after recent abdominal surgery or injury and in people with conditions that can

weaken the bowel wall. Medicines or illnesses that suppress the immune system may increase the chance of severe infection or make its signs harder to recognise.

Secondary peritonitis itself is not contagious. The infection usually comes from organisms already present inside the digestive tract rather than from contact with another person.

- A burst appendix
- A perforated stomach or duodenal ulcer
- A hole caused by diverticulitis, which is inflammation of small bowel-wall pouches
- A perforated or severely inflamed gallbladder
- Bowel damage caused by reduced blood supply
- Inflammatory bowel disease complicated by a perforation
- Bowel obstruction that damages or tears the bowel
- Abdominal trauma, such as a penetrating injury
- A leak where the bowel was joined during surgery
- Accidental bowel injury during an operation or procedure
- Cancer that blocks, weakens, or perforates the bowel

Diagnosis

Assessment takes place urgently in hospital. A clinician will ask how the pain began, whether you have had surgery or an injury, and whether you have vomiting, fever, bowel changes, or other medical conditions. Your abdomen will be examined for swelling, tenderness, and muscle tightening.

Blood tests can show signs of infection, inflammation, dehydration, or strain on organs such as the kidneys. Blood cultures may be taken to check whether bacteria have entered the bloodstream. These tests support the diagnosis but cannot identify every leak by themselves.

A CT scan is commonly used to look for a perforation, leaking bowel contents, inflamed organs, free air, or a collection of infected fluid called an abscess. Ultrasound may be useful when a gallbladder, liver, or pelvic problem is suspected. A chest or abdominal X-ray can sometimes show air that has escaped from the bowel, but a normal X-ray does not rule out peritonitis.

If you are very unwell or the signs of perforation are clear, treatment may need to start before every test is complete. Surgery may both confirm the cause and treat it. Samples of abdominal fluid are often collected during surgery or drainage to identify the organisms involved.

Treatment and management

Secondary peritonitis requires hospital treatment. Care often begins with fluids through a vein, pain relief, treatment for nausea, and close monitoring of blood pressure, urine output, breathing, and blood test results. Oxygen or intensive care support may be needed if the infection has affected circulation or organ function.

Antibiotics like amoxicillin or doxycycline are usually started promptly. They need to cover the mixture of bacteria commonly found in the digestive tract. The choice and length of treatment are based on the suspected source, test results, severity of illness, allergies, local resistance patterns, and whether the leak has been controlled. Antifungal treatment is used only in selected situations.

A key part of treatment is source control . This means stopping the leak, removing badly infected or dead tissue, and draining infected fluid. Depending on the cause, this may involve:

A stoma is an opening made in the abdomen so stool can leave through a bag. It may be temporary or permanent, depending on the damage, the operation, and later recovery.

Eating and drinking may be paused around surgery or while the bowel is not working normally. Nutrition may then restart gradually. A tube through the nose into the stomach is sometimes used to relieve vomiting or pressure.

If pain, fever, or abnormal blood results do not improve, further scans or procedures may be needed to look for an ongoing leak or an undrained abscess.

- Removing an inflamed or perforated appendix or gallbladder
- Repairing or removing a damaged section of stomach or bowel
- Washing infected material from the abdominal cavity
- Draining an abscess through the skin using image guidance
- Treating a leaking surgical join
- Creating a stoma when the bowel cannot safely be reconnected

Complications

Secondary peritonitis can become serious because inflammation affects the whole abdomen and may spread into the bloodstream.

Possible complications include:

Septic shock means infection has caused dangerously poor circulation and organ dysfunction.

It requires intensive treatment. The risk of severe complications is higher when treatment is delayed, the contamination is widespread, or a person already has major health problems.

- An abdominal or pelvic abscess
- Sepsis or septic shock
- Kidney, lung, heart, or other organ problems
- Paralysis of normal bowel movement, called ileus
- Wound infection or breakdown
- A persistent abnormal connection between organs, called a fistula
- Scar tissue known as adhesions
- Later bowel obstruction caused by adhesions
- The need for further drainage or surgery

Prevention

Secondary peritonitis cannot always be prevented. Appendicitis, bowel ischaemia, and unexpected perforations may occur without a clear way to stop them in advance.

Prompt treatment of conditions that can damage or perforate an abdominal organ may reduce the chance of infection spreading. This includes seeking assessment for persistent or worsening abdominal pain rather than waiting for it to become severe.

After abdominal surgery, follow the wound, activity, diet, and medicine instructions provided by your surgical team. Report increasing pain, fever, repeated vomiting, wound discharge, or a recovery that suddenly begins to worsen. These symptoms do not always mean there is a leak, but they need timely assessment.

If you have a known digestive condition, attending planned follow-up can help manage complications before they become emergencies. There is no supplement, special diet, or home remedy proven to prevent all forms of secondary peritonitis.

Living with it and what to expect

Recovery depends on the cause, the extent of contamination, how quickly source control is achieved, and your health before the illness. Some people recover after one operation and a short hospital stay. Others need intensive care, repeated drainage, more than one operation, or a longer period of rehabilitation.

After successful treatment, abdominal pain, fever, and blood test abnormalities often begin to settle over the following days. Appetite, bowel function, strength, and sleep may take longer to return. Fatigue can continue for weeks, especially after sepsis or major surgery.

You may leave hospital with a healing wound, a drain, or a stoma. The hospital team should explain how to care for these and who to contact if there is a problem. Stoma nurses can provide practical support with bags, skin care, diet, and daily activities.

Follow-up may include checking the wound, reviewing test results, and deciding whether more imaging is needed. If a temporary stoma was created, reversal is considered later only when healing and general health make another operation appropriate.

Most lasting issues are related to the underlying cause or surgery rather than continuing peritonitis. Abdominal adhesions can occasionally cause pain or bowel obstruction months or years later. Recurrence is less likely when the original problem has been fully corrected, but it remains possible with conditions that can cause new inflammation, blockage, or perforation.

When to get medical help

Suspected secondary peritonitis always needs urgent hospital assessment. Call emergency services if you have severe or rapidly worsening abdominal pain, especially with a hard or swollen abdomen, repeated vomiting, fever, faintness, confusion, breathing difficulty, clammy skin, or very little urine.

Do not drive yourself if you feel faint, confused, severely weak, or unable to move safely. Avoid eating or drinking while waiting for emergency advice because urgent surgery or anaesthesia may be needed.

After treatment, contact your surgical or hospital team urgently if you develop increasing abdominal pain, a new fever, repeated vomiting, worsening swelling, pus or bowel-like fluid from a wound, or a drain that suddenly changes or stops working.

Routine follow-up is appropriate for gradual recovery concerns such as ongoing tiredness, reduced appetite, bowel-pattern changes, stoma care, or questions about returning to work and activity. A sudden decline is not a routine follow-up issue.

Common questions

Is secondary peritonitis curable?

It often can be cured when the leak or damaged organ is successfully treated and the infection

is controlled. Recovery may still take time. Extensive contamination, delayed treatment, or organ failure can make the illness harder to treat.

Can secondary peritonitis go away without surgery?

Not usually without some form of source control. A small, contained abscess may sometimes be drained through the skin rather than treated with open surgery. A continuing perforation or leak commonly needs an operation. Antibiotics alone cannot reliably correct ongoing contamination.

How quickly does peritonitis develop?

Symptoms can develop over hours, but the timing depends on the cause and size of the leak. A large perforation may cause sudden severe pain. A small or contained leak may begin with more localised symptoms and worsen over time.

What is the difference between peritonitis and sepsis?

Peritonitis is inflammation or infection within the abdominal lining. Sepsis is the body's harmful, body-wide response to an infection. Secondary peritonitis can cause sepsis, but the terms do not mean the same thing.

Can I eat if peritonitis is suspected?

Do not eat or drink while waiting for urgent medical advice unless a healthcare professional tells you otherwise. Tests, anaesthesia, surgery, or bowel rest may be needed. Fluids and nutrition can be provided safely in hospital when necessary.

Will I need a stoma?

Many people do not. A stoma may be needed if damaged bowel must be removed and it is unsafe to reconnect the ends immediately. Whether it can later be reversed depends on healing, the underlying condition, and overall health.

Sources

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