CONDITION

Gastrointestinal perforation

Gastrointestinal perforation is a hole in the digestive tract that lets its contents leak into the body.

WHAT IT IS
A hole through the wall of the digestive tract

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Severe pain, tender abdomen, bloating, fever

WHAT CAUSES IT
Injury, inflammation, blockage, ulcers, or medical procedures

HOW IT IS DIAGNOSED
CT imaging, sometimes confirmed during surgery

MAIN TREATMENT
Urgent repair, antibiotics, drainage, and supportive care

CAN IT BE CURED?
Yes - the hole can often be repaired

IS IT AN EMERGENCY?
Yes - immediate hospital treatment needed

LONG-TERM OUTLOOK
Often good after prompt treatment; severe infection worsens outlook

Overview

A gastrointestinal perforation is a hole through the wall of the digestive tract. It can occur in the food pipe, stomach, small intestine, large intestine, or rectum.

The hole allows air, digestive fluids, food, or stool to leak outside the digestive tract. Leakage into the abdomen can inflame its lining, causing peritonitis . Bacteria may also enter the bloodstream and cause sepsis , a dangerous whole-body response to infection.

A perforation may develop suddenly after an injury or medical procedure. It can also result from an ulcer, inflamed bowel, blockage, or another condition that weakens the digestive tract wall.

Gastrointestinal perforation is a medical emergency. Early treatment reduces leakage and the

risk of severe infection. Most people need urgent hospital care, and many need an operation or procedure to close the hole.

Symptoms

Symptoms often begin suddenly, although a small or contained leak may initially cause milder symptoms.

Possible symptoms include:

Pain may begin near the damaged area and spread across the abdomen. The abdominal muscles may tighten automatically, causing guarding or rigidity .

A perforation of the food pipe, or esophagus, may cause chest, neck, or upper abdominal pain, painful swallowing, shortness of breath, or swelling beneath the skin of the neck.

Symptoms are not always dramatic. Older adults, people taking corticosteroids like prednisone or hydrocortisone , and people with weakened immune systems may have less pain or fever despite a serious problem.

- Severe or steadily worsening abdominal pain
- Pain when the abdomen is touched or when you move
- A swollen, firm, or unusually tight abdomen
- Nausea or vomiting
- Fever or chills
- A fast heartbeat
- Difficulty passing stool or gas
- Weakness, dizziness, confusion, or fainting

Causes and risk factors

Problems that can damage or weaken the digestive tract wall include:

Non-steroidal anti-inflammatory drugs like ibuprofen or naproxen , or NSAIDs, can contribute to stomach or small-intestinal ulcers. Examples include ibuprofen and naproxen.
Corticosteroids and medicines that suppress the immune system may affect healing or make symptoms less obvious.

Having a risk factor does not mean a perforation will occur.

- Peptic ulcers: Sores in the stomach or first part of the small intestine can deepen and create a hole.
- Diverticulitis: Inflamed or infected pouches in the large intestine may rupture.
- Appendicitis: An inflamed appendix can develop a hole or burst.
- Inflammatory bowel disease: Crohn's disease can cause deep inflammation through the bowel wall.
- Bowel blockage: Pressure behind a blockage can reduce blood supply and damage the bowel.
- Loss of blood supply: A clot, twisted bowel, severe illness, or another circulation problem can cause tissue to die.
- Cancer: A tumour may grow through the wall or cause a blockage that leads to perforation.
- Injury: A forceful blow, penetrating wound, or swallowed sharp object may create a tear.
- Medical procedures: Perforation is an uncommon complication of colonoscopy, upper endoscopy, bowel surgery, or endoscopic treatment.

Diagnosis

A clinician will ask about your symptoms and any recent surgery, endoscopy, injury, bowel disease, or ulcer symptoms. They will examine your abdomen for swelling, tenderness, guarding, and rigidity.

A CT scan is commonly used to find air or fluid outside the digestive tract, inflammation, an abscess, a blockage, or the likely location of the hole. Contrast material may be used to make structures clearer.

A chest or abdominal X-ray may show air beneath the diaphragm. However, a normal X-ray does not rule out a small or recent perforation.

Blood tests can identify signs of infection, inflammation, blood loss, dehydration, or organ problems, but cannot confirm a perforation by themselves.

The exact location and cause may be confirmed during an operation. A carefully selected contrast-swallow study may be used if an esophageal leak is suspected.

Treatment and management

Treatment begins in hospital, often before every test result is available.

You may be told not to eat or drink because the digestive tract needs to rest and an operation may be necessary. Fluids are given through a vein to treat dehydration and support blood pressure. Treatment can also include pain relief, oxygen, anti-nausea medicine, and antibiotics like amoxicillin or doxycycline .

The goals are to close or control the leak, remove contamination, drain infected fluid, and treat the cause.

Many perforations require urgent surgery. The surgeon may:

The healthy bowel ends may sometimes be joined immediately. In other cases, the surgeon creates a stoma , bringing the bowel through an opening in the abdominal wall so stool passes into a bag. A stoma may be temporary or permanent.

Some small, contained perforations can be managed without open surgery if the person is stable and the leak is not spreading. Treatment may include close monitoring, antibiotics, bowel rest, drainage through the skin, or endoscopic closure. This is suitable only in selected cases because deterioration can be rapid.

People with severe infection, low blood pressure, breathing difficulty, or organ problems may need intensive care.

- Close the hole
- Remove damaged bowel
- Wash contamination from the abdomen
- Drain an abscess or infected fluid
- Treat a blockage or other underlying cause

Complications

Possible complications include:

A gastrointestinal perforation can be fatal, particularly if treatment is delayed or severe infection develops. Prompt treatment improves the chance of recovery.

- Peritonitis
- An abscess
- Sepsis and septic shock
- Bleeding

- Kidney, lung, heart, or other organ problems
- Poor wound healing
- A fistula, or abnormal connection between organs
- Scar tissue that later blocks the bowel
- Need for a temporary or permanent stoma

Prevention

Not every gastrointestinal perforation can be prevented. Injuries, sudden loss of blood supply, and some complications of cancer or medical procedures may occur without warning.

Treating conditions that weaken or obstruct the digestive tract can reduce some risks. This may include follow-up for ulcers, diverticular disease, inflammatory bowel disease, cancer, or previous bowel surgery.

Take NSAIDs only as directed. Do not combine several NSAID products unless a clinician has specifically advised it. If you have had ulcers or digestive bleeding, ask a healthcare professional whether these medicines are safe for you.

Seek medical advice for persistent or recurring abdominal symptoms rather than repeatedly using painkillers. If you swallow a sharp object, do not try to make yourself vomit; get urgent medical advice.

Follow all preparation and aftercare instructions for medical procedures so complications can be recognised early.

Living with it and what to expect

Recovery depends on the location and cause of the perforation, the amount of leakage, and whether sepsis or organ damage developed.

The first stage usually involves a hospital stay. You may need antibiotics, intravenous fluids, drains, and a gradual return to drinking and eating. After surgery, tiredness, reduced appetite, abdominal discomfort, and temporary bowel changes are common.

Recovery may take weeks or months. A dietitian may help if eating is difficult, bowel was removed, or you have lost weight and strength. Activity usually increases gradually as the wound heals.

If you have a stoma, a specialist nurse can teach you how to care for it, choose supplies, and

manage skin problems. Whether it can be reversed depends on the underlying condition and how well the bowel heals.

Follow-up may include checking the wound, reviewing bowel function and nutrition, and treating the original cause. Some people need later tests for ulcers, inflammatory bowel disease, diverticular disease, or cancer.

Many people return to their usual activities, although recovery can take longer after widespread infection or major bowel surgery. Future risk depends mainly on whether the cause remains active.

When to get medical help

Call emergency services or go to an emergency department now if you have:

Do not eat, drink, take laxatives, or try to treat severe symptoms at home while waiting for emergency care. Do not drive yourself if you feel faint, confused, or very unwell.

After treatment, contact your surgical or hospital team promptly for increasing pain, fever, vomiting, wound redness or drainage, inability to eat or drink, or an unexpected change in stoma output. Do not wait for a routine appointment if symptoms are rapidly worsening.

- Sudden, severe, or rapidly worsening abdominal or chest pain
- A hard, swollen, or very tender abdomen
- Severe pain after abdominal injury, endoscopy, or bowel surgery
- Abdominal pain with fever, repeated vomiting, fainting, or confusion
- Trouble breathing or swallowing after vomiting, injury, or a procedure
- Severe weakness, cold or clammy skin, or very little urine

Common questions

Can a gastrointestinal perforation heal on its own?

A very small, contained leak may sometimes seal with antibiotics, bowel rest, drainage, and close hospital monitoring. Many perforations require a procedure or operation.

How quickly do symptoms appear?

Symptoms may start suddenly, especially after an injury, ulcer rupture, or procedure. A small or contained perforation may cause slower or less obvious symptoms. Steadily worsening pain still needs urgent assessment.

Can you survive a perforated bowel?

Yes. Many people recover, especially when treatment begins before infection becomes widespread. The outlook depends on the cause, contamination, other health conditions, and whether sepsis or organ failure develops.

Does every perforation require surgery?

No, but many do. Selected small leaks may be treated with antibiotics, drainage, or an endoscopic procedure. Hospital monitoring is essential because surgery may become necessary if the leak spreads or the person's condition worsens.

Will I need a stoma bag?

Not everyone needs a stoma. It may be used when infection, swelling, or tissue damage makes immediately joining the bowel unsafe. Some stomas are reversed after healing; others are permanent.

Can a perforation happen after a colonoscopy?

Yes, but it is uncommon. Severe or worsening abdominal pain, fever, vomiting, breathing difficulty, or marked abdominal swelling after colonoscopy needs urgent medical assessment.

Sources

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