CONDITION

Peritonitis - spontaneous bacterial

Spontaneous bacterial peritonitis is a serious infection of fluid that has collected inside the abdomen.

WHAT IT IS
Infection of fluid collected inside the abdomen

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Fever, abdominal pain, confusion, worsening swelling

WHAT CAUSES IT
Gut bacteria infecting abdominal fluid

HOW IT IS DIAGNOSED
Abdominal fluid cell count and culture

MAIN TREATMENT
Hospital antibiotics, sometimes intravenous albumin

CAN IT BE CURED?
Sometimes - infection clears, underlying risk often remains

IS IT AN EMERGENCY?
Yes - suspected infection needs urgent hospital treatment

LONG-TERM OUTLOOK
Recovery possible, but recurrence and liver complications remain common

Overview

Spontaneous bacterial peritonitis, often shortened to SBP, is an infection of ascites . Ascites is fluid that has collected inside the abdomen, around the organs.

SBP is called "spontaneous" because there is no obvious hole, injury, or abscess inside the abdomen causing the infection. This separates it from secondary peritonitis , which may result from a burst appendix, perforated bowel, or another problem that sometimes needs surgery.

Most cases happen in people with advanced liver scarring, called cirrhosis , who have ascites. SBP can occasionally occur with other conditions that cause abdominal fluid, such as severe heart or kidney problems.

SBP matters because it can worsen quickly, damage the kidneys, and lead to sepsis. Sepsis is a

dangerous whole-body response to infection. Symptoms can be mild or absent, so a change in health may be important even without severe abdominal pain.

Suspected SBP needs urgent assessment in hospital. Prompt testing and antibiotics like amoxicillin or doxycycline improve the chance of recovery.

Symptoms

SBP does not always produce the intense abdominal pain people may expect from the word "peritonitis." Some people have only a mild change in how they feel.

Possible symptoms include:

Confusion in someone with cirrhosis may be caused by hepatic encephalopathy , meaning the liver is no longer clearing certain toxins effectively. Infection, including SBP, can trigger it.

A person may also have no clear abdominal symptoms. SBP is sometimes found when someone with ascites is admitted to hospital because their general condition or kidney function has worsened.

- New or worsening abdominal pain or tenderness
- Fever, chills, or feeling unusually cold
- Increased abdominal swelling
- Nausea, vomiting, or reduced appetite
- Diarrhoea
- New confusion, unusual sleepiness, or trouble concentrating
- Low blood pressure, dizziness, or fainting
- Passing less urine
- Sudden worsening of existing liver problems

Causes and risk factors

SBP usually develops when bacteria, often from the bowel, cross into the bloodstream or lymph system and reach the ascitic fluid. Cirrhosis can weaken the body's infection defences, while ascitic fluid may contain too little protein to control bacteria effectively.

The infection is usually caused by one type of bacterium. Finding several different organisms can suggest a leak or another source inside the abdomen rather than SBP.

Factors linked with a higher risk include:

Having one of these factors does not mean SBP will occur. The risk is assessed from the overall condition of the liver, kidneys, ascitic fluid, and general health.

SBP is not caused by something you ate, and it does not spread from person to person.

- Cirrhosis with ascites, especially advanced cirrhosis
- A previous episode of SBP
- Low protein levels in ascitic fluid combined with severe liver or kidney problems
- Bleeding from enlarged veins in the digestive tract
- Recent hospital care or exposure to antibiotics
- Poor kidney function
- Severe liver failure

Diagnosis

SBP is confirmed by testing a sample of ascitic fluid. The procedure used to collect it is called paracentesis or an abdominal tap.

During paracentesis, the skin is cleaned and numbed. A thin needle or small tube is passed into the abdomen to remove some fluid. The sample is sent for a cell count and bacterial culture.

The key measurement is the number of neutrophils , a type of white blood cell that responds to infection. A neutrophil count of at least 250 cells per cubic millimetre supports a diagnosis of SBP. Treatment should not be delayed while waiting for the culture result.

A culture attempts to grow and identify bacteria so the antibiotic can be adjusted if needed. The culture may be negative even when the neutrophil count confirms SBP.

Other tests commonly include:

Doctors may suspect secondary peritonitis if the fluid results are unusual, several organisms are found, symptoms are severe, or treatment is not working as expected. Imaging and surgical assessment may then be needed.

- Blood tests for infection, liver function, kidney function, and blood clotting
- Blood cultures to look for bacteria in the bloodstream
- Urine tests and other checks for possible sources of infection
- Ultrasound or CT imaging if secondary peritonitis is a concern

Treatment and management

SBP is treated in hospital with antibiotics. Treatment usually begins as soon as the ascitic fluid has been collected, without waiting for culture results.

The antibiotic chosen depends on whether the infection began in the community or during healthcare, local patterns of antibiotic resistance, previous antibiotic exposure, allergies, and the person's condition. Treatment may be adjusted when test results return.

Intravenous albumin , a protein found in blood, is also used for some people. It helps support blood circulation and can lower the risk of kidney failure, particularly when tests show kidney strain or severe liver dysfunction.

Hospital care may also include:

If there is a perforation, abscess, or other source of secondary peritonitis, antibiotics alone may not be enough. A drainage procedure or surgery may be required.

After recovery, many people who have had SBP are offered preventive antibiotics because another episode is common while the underlying risk remains. The choice requires medical review because long-term antibiotics can cause side effects and encourage resistant bacteria.

An episode of SBP also signals advanced liver disease. Assessment by a liver specialist may include discussion of liver transplantation when appropriate.

- Monitoring blood pressure, urine output, and mental alertness
- Repeated blood tests for liver and kidney function
- Treatment for sepsis or low blood pressure
- Managing hepatic encephalopathy
- Reviewing medicines that may affect blood pressure or kidney function
- Another paracentesis if improvement is uncertain or resistance is suspected

Complications

SBP can place extra strain on organs that are already affected by liver disease.

Possible complications include:

Not everyone develops these problems. The risk is influenced by how advanced the liver disease is, kidney function, antibiotic resistance, and how quickly treatment begins.

- Sepsis and dangerously low blood pressure

- Acute kidney injury
- Hepatorenal syndrome, a serious decline in kidney function linked to liver failure
- Hepatic encephalopathy
- Breathing difficulty from worsening fluid build-up
- Return of the infection after treatment
- Further loss of liver function

Prevention

SBP cannot always be prevented. Ascites and reduced infection defences result mainly from the underlying liver or other serious health condition.

Preventive antibiotics may be recommended for selected people at high risk. This commonly includes people who have already had SBP and some people with gastrointestinal bleeding or particular high-risk ascitic fluid results. Antibiotics are not suitable for everyone, so they should not be started or saved for later use without medical guidance.

Reducing further liver injury and keeping regular liver appointments may help manage the underlying risk. This can include avoiding alcohol when advised, receiving recommended vaccinations, and taking cirrhosis medicines as directed.

Report fever, abdominal pain, confusion, reduced urine, or an unexplained decline promptly. Early assessment cannot prevent every episode, but it can reduce delays in treatment.

Living with it and what to expect

Many people improve after antibiotics, but recovery depends heavily on liver and kidney health. The immediate hospital stay focuses on clearing the infection and preventing organ failure.

Tiredness, weakness, poor appetite, and abdominal swelling may continue after the infection has settled because SBP treatment does not reverse cirrhosis or permanently remove the tendency to develop ascites.

Follow-up usually includes review by a liver team, monitoring of kidney and liver function, and a plan for preventing another infection. You may need ongoing treatment for ascites and other complications of cirrhosis.

A previous SBP episode increases the chance of recurrence. Seek advice early if familiar symptoms return, even while taking preventive antibiotics. No preventive treatment removes

the risk completely.

Over months and years, the main influence on health is usually the underlying liver condition rather than the past infection alone. Some people remain stable with specialist care, while others have repeated hospital admissions or worsening liver function. A liver transplant may offer the best long-term option for suitable people with advanced cirrhosis.

When to get medical help

If you have ascites or cirrhosis, seek urgent same-day hospital assessment for:

Call emergency services if the person is difficult to wake, faints, has severe breathing difficulty, develops cold or mottled skin, or appears seriously unwell. These can be signs of sepsis, shock, or severe liver-related complications.

Routine follow-up is appropriate when you feel stable and need review of ascites treatment, preventive antibiotics, blood tests, nutrition, or transplant assessment. Do not wait for a routine appointment if new infection symptoms appear.

- New fever, chills, or abdominal pain
- New abdominal tenderness or rapidly increasing swelling
- Vomiting or being unable to keep fluids down
- New confusion, unusual behaviour, or marked sleepiness
- Passing much less urine
- A sudden, unexplained decline in your health

Common questions

Is spontaneous bacterial peritonitis contagious?

No. SBP usually develops when bacteria already present in the body reach ascitic fluid. It does not spread through ordinary contact, shared food, coughing, or touching.

Can SBP happen without a fever?

Yes. Some people have no fever or obvious abdominal pain. Confusion, kidney problems, low blood pressure, or a general decline may be the only signs. This is why hospitals often test ascitic fluid when someone with cirrhosis and ascites becomes unwell.

Can spontaneous bacterial peritonitis be cured?

The immediate infection can often be cleared with antibiotics. However, treatment does not cure the cirrhosis or ascites that allowed the infection to develop. Another episode remains possible, so follow-up and prevention planning are important.

Will SBP come back?

It can. Recurrence is common enough that people who recover from SBP are generally assessed for long-term preventive antibiotics. The risk continues while significant ascites and advanced liver dysfunction remain.

How long does recovery take?

There is no single recovery time. Doctors expect signs of infection to begin improving after treatment starts, but weakness, swelling, confusion, or kidney problems may take longer. Recovery may be slower when liver disease is advanced or complications develop.

Does SBP always need a hospital stay?

Suspected SBP generally needs urgent hospital testing and intravenous treatment. Hospital monitoring is important because blood pressure, kidney function, mental alertness, and antibiotic response can change quickly.

Sources

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