CONDITION

Hemothorax

A hemothorax is a collection of blood between the lung and chest wall.

WHAT IT IS
Blood collected around a lung

BODY SYSTEM
Lungs and chest

MAIN SYMPTOMS
Chest pain, breathlessness, rapid breathing, weakness

WHAT CAUSES IT
Usually chest injury, sometimes procedures or disease

HOW IT IS DIAGNOSED
Chest imaging and sometimes pleural fluid testing

MAIN TREATMENT
Chest drainage and control of bleeding

CAN IT BE CURED?
Yes - when bleeding is controlled

IS IT AN EMERGENCY?
Yes - especially with breathing trouble or shock

LONG-TERM OUTLOOK
Often full recovery after prompt treatment

Overview

A hemothorax is a collection of blood in the pleural space. This is the narrow space between a lung and the inside of the chest wall. It normally contains only a thin layer of lubricating fluid.

As blood builds up, it can press on the lung and stop it from expanding fully. Heavy bleeding can also reduce the amount of blood circulating through the body. This may lead to shock, meaning the organs are not receiving enough blood and oxygen.

Most hemothoraces follow a blunt or penetrating chest injury, such as a road crash, fall, or stab wound. They can also occur after chest surgery or a medical procedure. Less often, bleeding begins without an injury.

A hemothorax can be small or large. A small, stable collection may cause few symptoms, while rapid or heavy bleeding can be life-threatening. Medical assessment is important because the

amount of blood and the source of bleeding cannot be judged reliably from symptoms alone.

Symptoms

Symptoms may begin immediately after an injury or develop over several hours. The main symptoms are:

Heavy blood loss may cause pale, cool, or clammy skin, confusion, extreme tiredness, or low blood pressure. These are possible signs of shock and require emergency care.

Some people have symptoms from related chest injuries. For example, a fractured rib may cause sharp pain and tenderness. Air may collect around the lung at the same time as blood; this is called a hemopneumothorax.

A small hemothorax may be found on an X-ray or CT scan before it causes noticeable symptoms. Symptoms alone cannot show whether pleural fluid is blood or another type of fluid.

- Chest pain, which may be worse when breathing deeply
- Shortness of breath or rapid, shallow breathing
- A fast heartbeat
- Weakness, dizziness, or fainting

Causes and risk factors

Chest trauma is the most common cause. Blunt trauma can tear blood vessels, damage the lung, or break ribs that injure nearby tissues. Penetrating injuries can directly damage the lung, heart, diaphragm, or major blood vessels.

A hemothorax may also happen as a complication of:

A spontaneous hemothorax occurs without a recent injury or procedure. This is uncommon. Possible causes include abnormal blood vessels, problems with blood clotting, some cancers, lung tissue damage, and endometriosis affecting the chest.

Medicines that reduce blood clotting can increase the seriousness of bleeding. They may contribute to a spontaneous hemothorax, but most people taking these medicines do not develop one. Do not stop a prescribed blood thinner like warfarin or apixaban without medical advice unless an emergency team tells you to do so.

- Chest, heart, or upper abdominal surgery

- Placement of a central venous catheter, a tube inserted into a large vein
- Thoracentesis, a procedure that removes fluid from around a lung
- Lung or pleural biopsy
- Cardiopulmonary resuscitation, particularly if ribs are injured

Diagnosis

Initial assessment usually includes checking your breathing, pulse, blood pressure, oxygen level, and signs of chest injury or blood loss. A clinician will listen to your lungs, although examination alone cannot confirm a hemothorax.

Imaging tests may include:

Ultrasound and X-rays can detect fluid but may not prove that the fluid is blood. In an unclear case, a sample may be removed with a needle and tested. Comparing the concentration of red blood cells in the pleural fluid with that in the bloodstream can help confirm the diagnosis.

If a chest tube is inserted, the appearance and amount of fluid draining through it also provide important information. Blood tests may check for anemia, which means too few red blood cells, and whether the blood is clotting normally. Tests may be repeated because early blood counts do not always show the full extent of recent blood loss.

- Chest X-ray: Can show fluid around a lung, although small collections may not be visible
- Chest ultrasound: Can quickly detect pleural fluid, especially during emergency trauma assessment
- CT scan: Gives more detail about the amount and location of blood, injuries, and possible bleeding source

Treatment and management

Treatment aims to support breathing and circulation, remove blood from around the lung, and stop further bleeding.

Emergency care may include oxygen, intravenous fluids, and blood transfusion. If blood-thinning medicine or a clotting problem is contributing, the medical team may take steps to restore clotting. The approach depends on the medicine involved and the seriousness of the bleeding.

Most moderate or large hemothoraces are drained through a chest tube. This is a flexible tube

placed between the ribs and connected to a drainage system. Removing the blood allows the lung to expand and lets the team measure ongoing bleeding.

A small, stable hemothorax may sometimes be watched closely rather than drained immediately. This decision is based on imaging, symptoms, other injuries, and access to repeat examinations. It is not something to monitor at home without medical assessment.

Surgery may be needed when bleeding is heavy or continues, when the person remains unstable, or when a major injury needs repair. Options include:

Blood can clot before the chest tube removes it. This is called a retained hemothorax. VATS may be used to clear the clot and wash out the pleural space. In selected cases, medicines that break down clots may be placed through the chest tube, but this is not suitable for everyone.

Pain relief is also important. Pain can make it difficult to breathe deeply or cough, increasing the risk of partial lung collapse and infection. Breathing exercises, movement when safe, and respiratory therapy may be part of recovery.

- Video-assisted thoracic surgery, or VATS: Keyhole surgery using a camera and small chest incisions
- Thoracotomy: Open chest surgery, generally used when rapid access is needed to control severe bleeding

Complications

A large or rapidly developing hemothorax can cause shock from blood loss. Pressure from blood around the lung may also lead to breathing failure.

Blood that remains trapped in the chest can form thick clots. A retained hemothorax may become infected, producing pus in the pleural space. This is called an empyema.

Over time, inflammation may cause a firm layer of scar tissue around the lung. Known as fibrothorax, this can limit lung expansion and cause lasting breathlessness. Prompt drainage of a significant hemothorax lowers the chance of these later problems.

Other possible complications include anemia, pneumonia, persistent pain, or complications related to the original injury. Chest tubes and surgery also carry risks such as infection, air leakage, or damage to nearby tissues.

Prevention

Not every hemothorax can be prevented. Injuries, unexpected procedure complications, and

spontaneous bleeding may occur despite reasonable precautions.

Using seat belts, following workplace safety measures, and wearing appropriate protective equipment during higher-risk sports or activities can reduce the chance of serious chest injury.

Medical teams use imaging, sterile technique, and careful monitoring to reduce procedure-related risk. Tell healthcare professionals if you take blood-thinning medicine or have a bleeding disorder before a planned procedure.

Take blood thinners exactly as directed and attend any required monitoring. Do not skip, double, or stop doses in an attempt to prevent bleeding without advice from the prescribing service.

There is no general screening test or lifestyle plan that prevents spontaneous hemothorax. If one occurs, investigating and treating its underlying cause may reduce the chance of recurrence.

Living with it and what to expect

Recovery is shaped by the amount of bleeding, the cause, other injuries, and whether surgery was needed. Many people recover fully once the bleeding has stopped, the blood has been drained, and the lung has expanded again.

Chest pain and tiredness can continue after leaving hospital. The chest tube site may remain sore while it heals. Recovery from broken ribs, major trauma, or surgery often takes longer than recovery from the pleural blood itself.

Follow-up may include a chest X-ray or other imaging to check that fluid is clearing and the lung remains expanded. Appointments may also review anemia, wound healing, breathing, and the cause of any spontaneous bleeding. These are routine parts of recovery, not signs that treatment has failed.

Gentle movement and prescribed breathing exercises may help restore normal breathing. Return to work, driving, exercise, flying, or heavy lifting should be guided by the type of injury and treatment. Avoiding tobacco smoke supports lung healing.

A hemothorax does not usually become a permanent condition. Long-term breathing problems are more likely after a very large collection, infection, scarring, or serious damage to the lung and chest. Recurrence is uncommon after a one-time injury but may occur if an underlying bleeding, blood vessel, or pleural condition remains.

When to get medical help

Call emergency services after a chest injury if you have new or worsening shortness of breath, severe chest pain, fainting, confusion, pale or clammy skin, or a very fast heartbeat. These symptoms may indicate major bleeding, a collapsed lung, or shock.

Seek emergency help after recent chest surgery or a chest procedure if breathing suddenly becomes difficult, you feel faint, or chest pain is rapidly worsening.

If you have already been treated for a hemothorax, obtain prompt medical advice for fever, increasing breathlessness, worsening chest pain, redness or drainage around a chest tube wound, or coughing up blood. These may suggest infection, recurrent fluid, or another complication.

Routine follow-up is appropriate when symptoms are steadily improving. Keep planned appointments for examination, imaging, blood tests, or wound review even if you feel well.

Common questions

Is a hemothorax the same as a collapsed lung?

No. A hemothorax is blood around the lung. A pneumothorax is air around the lung. Either can compress the lung, and both can occur together after a chest injury.

Can a hemothorax heal without a chest tube?

Some small, stable collections can be absorbed by the body under close medical observation. Larger collections, worsening symptoms, or ongoing bleeding usually require drainage. Imaging and repeat assessments guide this decision.

Does every hemothorax need surgery?

No. Many are treated successfully with a chest tube and supportive care. Surgery is more likely when bleeding continues, circulation is unstable, a major injury needs repair, or clotted blood remains trapped.

How long does recovery take?

There is no single recovery time. A small hemothorax may clear relatively quickly, while broken ribs, major trauma, surgery, anemia, or infection can extend recovery over weeks or months. Follow-up imaging helps show how the chest is healing.

Can a hemothorax come back?

It can, but the risk is linked to the cause. Recurrence is less likely after a healed one-time injury. An unexplained or spontaneous hemothorax may return if its underlying cause is not found or

controlled.

Does a spontaneous hemothorax mean cancer?

Not necessarily. Cancer is one possible cause, but blood vessel problems, clotting disorders, endometriosis, and other conditions can also cause spontaneous bleeding. Further testing is usually needed to identify the reason.

Sources

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