CONDITION

Chronic subdural hematoma

Learn how chronic subdural hematomas develop, which symptoms need urgent care, and how doctors diagnose, treat, and monitor this condition.

WHAT IT IS
Slowly developing blood and fluid collection between the brain and dura

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Worsening headache, confusion, poor balance, one-sided weakness

WHAT CAUSES IT
Damaged veins after head injury

HOW IT IS DIAGNOSED
Head CT, MRI if uncertain

MAIN TREATMENT
Monitoring or surgical drainage

CAN IT BE CURED?
Sometimes - treatment works but recurrence occurs

IS IT AN EMERGENCY?
Sometimes - increasing difficulty staying awake

LONG-TERM OUTLOOK
Many improve, but recurrence or lasting neurological problems can occur

Overview

A chronic subdural hematoma is a collection of blood and fluid between the brain's surface and its outer protective covering, called the dura. "Chronic" means the collection develops slowly, usually over several weeks or months. It is different from an acute subdural hematoma, which forms soon after a serious head injury.

The bleeding may start after a minor bump or fall. The original injury can be easy to forget, especially when symptoms do not appear until weeks later. Some people do not remember any injury.

As blood breaks down, it can trigger inflammation and the growth of delicate new blood vessels around the collection. These vessels may leak, allowing the hematoma to enlarge or return after treatment. A growing collection can press on the brain and affect movement,

thinking, speech, or alertness.

Chronic subdural hematoma is more common in older adults, but it can occur at any age. It matters because its symptoms can resemble a stroke, dementia, medication side effects, or another neurological condition. Prompt assessment can identify whether treatment is needed. Many people improve after appropriate care, although recovery depends on their symptoms, general health, and the effect on the brain.

Symptoms

Symptoms usually develop gradually. They may change from day to day or worsen over time. A family member or caregiver may notice changes before the affected person does.

Possible symptoms include:

In older adults, the first signs may be subtle. A person may move more slowly, become less independent, or seem to have rapidly worsening memory problems. Symptoms affecting both sides of the body can occur when there are hematomas on both sides of the brain.

New one-sided weakness, difficulty speaking, a seizure, fainting, severe confusion, repeated vomiting, or increasing difficulty staying awake requires emergency assessment. These symptoms can also occur with stroke and other serious conditions. Call emergency services rather than driving if the person is difficult to wake, is having a seizure, or cannot move safely.

A mild but persistent headache, gradual balance change, or new confusion also deserves prompt medical attention, particularly after a fall or in someone taking medicine that reduces blood clotting.

- A persistent or worsening headache
- Increasing sleepiness or reduced alertness
- Confusion, memory problems, or unusual behavior
- Trouble walking, poor balance, or repeated falls
- Weakness or numbness, often affecting one side of the body
- Slurred speech or difficulty finding words
- Nausea or vomiting
- Blurred or double vision
- Loss of bladder control that is new or unexplained
- Seizures, which are episodes of abnormal electrical activity in the brain

Causes and risk factors

A chronic subdural hematoma often begins when small veins between the brain and the dura are stretched and damaged. This can follow a fall, sudden movement of the head, or another injury. Over time, inflammation and fragile blood vessels within the hematoma can contribute to continued leakage.

Aging is an important risk factor. The brain normally becomes slightly smaller with age, leaving more space inside the skull and placing greater tension on the veins. This helps explain why a relatively minor injury can sometimes lead to a hematoma in an older adult.

Other factors that may increase risk include:

Anticoagulants like warfarin or apixaban are medicines used to prevent harmful blood clots. Antiplatelet medicines reduce the ability of platelets to stick together. These treatments are important for conditions such as atrial fibrillation, heart disease, and previous blood clots. Their presence does not prove that they caused a hematoma.

Do not stop a prescribed blood thinner without medical advice unless an emergency clinician instructs you to do so. Suddenly stopping one may increase the risk of stroke or another clot.

- Medicines that reduce clotting, such as anticoagulants or antiplatelet medicines
- A bleeding disorder or low platelet count
- Heavy long-term alcohol use, which can increase falls and affect clotting
- Previous chronic subdural hematoma
- Repeated falls or head injuries
- Conditions that cause brain shrinkage
- A cerebrospinal fluid shunt or unusually low pressure around the brain
- Long-term dialysis or serious liver disease in some patients

Diagnosis

A clinician will ask when symptoms began, whether they are getting worse, and whether there has been a fall or head injury. The assessment should include all prescription medicines, over-the-counter pain relievers, supplements, alcohol use, and any history of bleeding or blood clots.

A neurological examination checks alertness, speech, memory, eye movements, strength, sensation, coordination, and walking. This helps identify which parts of the brain may be

affected and whether symptoms are changing.

A computed tomography, or CT, scan of the head is usually the main imaging test. It uses X-rays to create detailed pictures and can show the hematoma's location, size, and effect on the brain. Chronic blood often looks different from fresh blood, although a collection may contain blood of different ages.

Magnetic resonance imaging, or MRI, may be used when the CT findings are uncertain or more detail is needed. MRI uses a magnetic field rather than X-rays.

Blood tests may check the number of blood cells and platelets, kidney or liver function, and how well the blood is clotting. These results can guide decisions about surgery and the management of blood-thinning medicines.

Doctors consider the whole picture rather than the scan alone. Symptoms, neurological findings, hematoma size, pressure on the brain, medical conditions, and treatment goals all influence the plan.

Treatment and management

Treatment depends on the severity of symptoms and the effect of the hematoma on the brain.

A small hematoma causing few or no symptoms may sometimes be monitored. This usually involves neurological checks, planned follow-up, and repeat imaging. Observation does not mean ignoring the condition. New or worsening symptoms require reassessment.

A symptomatic or enlarging hematoma often needs a procedure to remove the fluid and reduce pressure. The most common operation uses one or two small openings in the skull, called burr holes. The surgeon washes out or drains the collection. A temporary drain may be left in place because evidence shows that drainage after burr-hole surgery can lower the chance of the hematoma returning.

A larger opening, called a craniotomy, may be considered if the blood is thick or divided by membranes, if there is significant fresh bleeding, or if the hematoma returns and cannot be managed adequately with a simpler procedure. The surgical team explains the expected benefits and risks based on the individual situation.

Middle meningeal artery embolization is a less invasive procedure used in selected patients. A specialist guides a thin tube through a blood vessel and blocks branches supplying the hematoma's abnormal membranes. Recent trials suggest that embolization can reduce treatment failure or recurrence in some settings. It may be used with surgery or, in carefully selected cases, as an alternative. Availability and local practice vary, and it is not appropriate for every patient.

If a person takes an anticoagulant, the medical team may temporarily pause or reverse its effect when bleeding risk is high. The decision to restart it requires a balance between the risk of another hematoma and the risk of stroke or other blood clots. This decision should involve the clinicians managing both conditions.

Dexamethasone, a corticosteroid that reduces inflammation, has been studied for chronic subdural hematoma. A major randomized trial found worse functional outcomes and more adverse events with dexamethasone, despite fewer repeat operations. It is therefore not a routine substitute for established treatment.

Anti-seizure medicine may be given if a seizure occurs or if the clinical team believes seizure risk is significant. It is not automatically needed by every patient.

After treatment, physical, occupational, or speech therapy may help with weakness, walking, daily activities, or communication. Fall prevention, medication review, nutrition, and support at home can also be important parts of recovery.

Complications

A chronic subdural hematoma can enlarge and place increasing pressure on the brain. This may lead to worsening weakness, confusion, reduced consciousness, seizures, or lasting neurological problems. Severe pressure can become life-threatening, but timely treatment is intended to prevent this.

The hematoma may return after drainage. Recurrence is one reason follow-up and attention to new symptoms are important.

Possible complications of a procedure include infection, fresh bleeding, seizures, blood clots, or injury to nearby tissue. The risks differ by procedure and by the person's health.

Temporary interruption of anticoagulant or antiplatelet treatment can increase clotting risk. Restarting too early may increase bleeding risk. This trade-off requires an individualized medical plan.

Some people also have ongoing balance, memory, or mobility problems after the hematoma has been treated. Rehabilitation and assessment for other contributing conditions may help.

Follow up

Follow-up plans vary according to symptoms, treatment, scan findings, and other medical conditions. Routine follow-up may include a neurological examination, review of walking and

daily function, medication decisions, wound care after surgery, and repeat brain imaging.

Keep an up-to-date list of all medicines and follow instructions about blood thinners carefully. Do not restart, stop, or change these medicines independently. Ask who is responsible for the decision and when it will be reviewed.

Recovery may be gradual. Mild fatigue, headache, or reduced confidence with walking can persist for a time, but these symptoms should generally be discussed at planned follow-up. Therapy, mobility aids, and changes to the home may reduce fall risk.

Contact the treating team promptly if headaches, balance, memory, speech, or strength are worsening rather than improving. Also seek advice for fever, redness or drainage from a surgical wound, or possible medicine side effects.

Call emergency services for a seizure, fainting, new one-sided weakness, new speech difficulty, repeated vomiting, severe confusion, or increasing difficulty waking. Do not wait for a routine appointment when these symptoms occur.

Sources

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