CONDITION

Thrombophlebitis

Thrombophlebitis is inflammation in a vein caused by a blood clot, usually in the leg.

WHAT IT IS
Vein inflammation caused by a blood clot

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Pain, redness, warmth, swelling

WHAT CAUSES IT
Blood clot with vein inflammation

HOW IT IS DIAGNOSED
Duplex ultrasound, sometimes D-dimer testing

MAIN TREATMENT
Symptom relief or blood-thinning medicine

CAN IT BE CURED?
Yes - most episodes resolve with treatment

IS IT AN EMERGENCY?
Sometimes - breathlessness or chest pain may signal embolism

LONG-TERM OUTLOOK
Most recover; some develop recurrent or lasting swelling

Overview

Thrombophlebitis means that a vein is inflamed because a blood clot has formed inside it. It most often affects a leg, although it can occur in an arm or another part of the body.

There are two main forms.

Superficial thrombophlebitis , also called superficial vein thrombosis, affects a vein just under the skin. It often causes a sore, red area and a firm vein that feels like a cord. Varicose veins are a common site.

Deep vein thrombosis , or DVT, affects a vein deeper inside the body. DVT is more serious because part of the clot can break away and travel to the lungs. This is called a pulmonary embolism.

Most small superficial clots settle without causing lasting problems. However, a superficial clot

can sometimes grow toward the deep veins. Its location and size therefore matter. Symptoms that appear to be superficial may also need an ultrasound to rule out DVT.

Thrombophlebitis is different from phlebitis without a clot, in which a vein is inflamed for another reason. In practice, the terms are sometimes used interchangeably.

Symptoms

Superficial thrombophlebitis usually causes symptoms along the path of a visible vein. You may notice:

Redness may be harder to see on brown or black skin. The area may instead look darker, purple or different from the surrounding skin.

Symptoms from DVT can be less clearly defined. They may include swelling of one leg or arm, a deep ache, warmth, tenderness or a change in skin colour. Leg swelling may affect the calf or the whole limb. Some DVTs cause few or no noticeable symptoms.

Chest pain, sudden shortness of breath, coughing up blood, fainting or a very fast heartbeat can be symptoms of a pulmonary embolism. These require emergency care.

- Local pain or tenderness
- Red or darker skin over the vein
- Warmth and mild swelling
- A hard, knobbly or cord-like vein

Causes and risk factors

A clot can form when blood flow slows, the vein wall is damaged or the blood is more likely than usual to clot. These factors are sometimes called the three parts of "Virchow's triad."

Superficial thrombophlebitis often develops in a varicose vein, where blood does not flow as smoothly. It can also follow an injury, an injection or the use of an intravenous cannula, which is a small tube placed in a vein.

Factors that can raise the likelihood of superficial or deep clots include:

Having a risk factor does not mean that you will develop thrombophlebitis. Some people have several factors, while others have no clear trigger.

A rare form called septic thrombophlebitis involves infection in or around the affected vein. It may occur after a catheter or bloodstream infection and can cause fever or pus at the site.

Repeated clots in different veins are sometimes called migratory thrombophlebitis. This pattern may lead to tests for an underlying clotting condition, inflammatory condition or cancer. Most single episodes do not mean that cancer is present.

- A previous DVT, pulmonary embolism or superficial clot
- Recent surgery, serious injury or a hospital stay
- Long periods with little movement, including prolonged travel
- Pregnancy and the weeks after giving birth
- Oestrogen-containing contraception or hormone therapy
- Cancer and some cancer treatments
- Varicose veins, especially for superficial clots
- An inherited or acquired tendency to form clots
- Increasing age, obesity and smoking

Diagnosis

A healthcare professional will ask when your symptoms began, where they are located and whether you have risk factors for a blood clot. They will examine the affected limb and compare it with the other side.

A duplex ultrasound is the main imaging test. It uses sound waves to show the vein, the clot and the movement of blood. It can confirm whether the clot is superficial or deep and show how close a superficial clot is to a deep vein.

Ultrasound is especially important when symptoms are extensive, above the knee, near the groin or behind the knee, or when DVT cannot be excluded from the examination.

A D-dimer blood test may be used when DVT is suspected. D-dimer is a substance released as clots break down. A low result can help rule out DVT in someone assessed as having a low likelihood of it. A raised result does not confirm a clot because many other conditions can increase D-dimer levels.

Further blood tests are not routinely needed for every superficial clot. Testing for inherited clotting conditions is reserved for selected situations, such as unusual, repeated or unexplained clots, because results do not always change treatment.

Treatment and management

Treatment is based on whether the clot is superficial or deep, its size and location, your symptoms and your risk of the clot extending.

For a small, low-risk superficial clot, treatment may focus on comfort and circulation. This can include remaining mobile, raising the limb while resting and using a warm compress. Anti-inflammatory pain relief may help, but it is not suitable for everyone, particularly people with certain stomach, kidney, bleeding or medication-related risks.

Compression stockings may reduce pain and swelling for some people. They should fit correctly and may not be appropriate when blood flow through the arteries is poor.

Some superficial clots need an anticoagulant like warfarin or apixaban , often called a blood thinner. These medicines do not immediately dissolve the clot. They reduce the blood's ability to form or enlarge clots while the body gradually clears the existing clot. They may be considered when a clot is long, close to the deep-vein system, progressing or associated with other clotting risks.

DVT usually requires anticoagulant treatment. The type and length of treatment are chosen according to the cause of the clot, bleeding risk, other health conditions and whether clots have happened before. A small number of people with severe DVT may need a procedure to remove or break down the clot.

If an intravenous cannula caused superficial inflammation, it is usually removed or replaced by the clinical team. Antibiotics like amoxicillin or doxycycline are not used for ordinary thrombophlebitis because a blood clot is not a bacterial infection. They are needed when there is evidence of infection.

Follow-up may include another examination or ultrasound to check that a superficial clot has not moved toward the deep veins. Do not stop an anticoagulant or change other prescribed medicines without medical advice.

Complications

A superficial clot can extend into a deep vein, particularly when it is close to the groin or the back of the knee. DVT can lead to a pulmonary embolism if part of the clot travels to the lungs.

After the inflammation settles, the affected vein may remain firm or discoloured for a while. Some people have further episodes, especially when varicose veins remain.

DVT can damage valves inside the vein. These valves normally help blood return toward the heart. Damage may lead to long-term swelling, aching, skin changes or, less commonly, leg ulcers. This is called post-thrombotic syndrome.

Bleeding is an important possible complication of anticoagulant treatment. Unexpected heavy bleeding, blood in vomit or stool, or a serious head injury while taking an anticoagulant needs urgent assessment.

Septic thrombophlebitis can allow infection to spread through the bloodstream. It needs prompt treatment but is not the usual cause of a red, tender superficial vein.

Prevention

Not every episode can be prevented. This is especially true when a clot follows an unavoidable hospital stay, cancer treatment or an inherited tendency to clot.

Regular movement can help blood flow during recovery from illness and on long journeys. If you sit for a long time, change position and move your legs when it is safe to do so. Follow the movement and clot-prevention plan given after surgery or during a hospital stay.

Hospitals may use anticoagulants, compression devices or both for people at increased risk. These measures are selected after balancing clotting risk against bleeding risk.

If you have had a previous clot, discuss future surgery, pregnancy and oestrogen-containing medicines with a healthcare professional. Do not stop contraception, hormone therapy or anticoagulants on your own.

Managing varicose veins may reduce repeated superficial clots in some people. Treatment is usually considered after the active inflammation has settled.

Living with it and what to expect

Pain and redness from a small superficial clot often begin to improve over days or weeks. The hard vein or skin staining can take longer to disappear and may remain noticeable for several months. A persistent lump does not necessarily mean that the clot is still growing.

Gentle daily activity is usually encouraged because it supports circulation. The amount you can comfortably do may change while pain and swelling settle. Prolonged immobility is generally avoided unless another condition limits movement.

Recovery from DVT is less predictable. Many people return to their usual activities, but swelling or heaviness can continue. Anticoagulant treatment may last for several months or longer, based on why the clot occurred and the likelihood of another episode.

While taking an anticoagulant, you may bruise or bleed more easily. You may need advice before dental work, surgery or starting other medicines, including non-prescription pain

relievers and supplements.

Repeated superficial clots may lead to an assessment of varicose veins or other contributing factors. Repeated DVT or pulmonary embolism may result in longer-term anticoagulant treatment. Routine follow-up is used to review symptoms, medicine safety and whether further testing is useful.

When to get medical help

Call emergency services for:

These symptoms may indicate a pulmonary embolism or another serious condition.

Seek urgent same-day medical assessment for new one-sided limb swelling, rapidly increasing pain or swelling, or redness that is spreading toward the groin or behind the knee. Urgent assessment is also appropriate if clot symptoms develop during pregnancy, soon after giving birth, after recent surgery, or when you have cancer or a previous blood clot.

Fever, chills, pus or worsening redness around a cannula site may suggest infection and should be assessed promptly.

Arrange routine medical review for a tender, hard superficial vein even if you otherwise feel well. Follow-up is also appropriate if symptoms are not improving as expected, keep returning or remain troublesome after the initial episode.

If you take an anticoagulant, seek urgent help for heavy or uncontrolled bleeding, vomiting blood, black stools, severe headache after a head injury or other bleeding that concerns you.

- Sudden or unexplained shortness of breath
- Chest pain, especially pain that worsens with breathing
- Coughing up blood
- Fainting, severe weakness or collapse

Common questions

Is thrombophlebitis the same as DVT?

Not always. Superficial thrombophlebitis affects a vein near the skin. DVT affects a deeper vein and has a greater risk of pulmonary embolism. An ultrasound can show which type is present.

Will the hard vein go away?

It often becomes softer as inflammation settles, but this can take weeks or months. Some

firmness or skin discolouration may remain, especially in a varicose vein.

Can I walk with thrombophlebitis?

Gentle walking is usually encouraged when it is comfortable and safe. Movement supports blood flow. Your activity may need to be adjusted if you have severe pain, extensive swelling or another condition that limits mobility.

Do all superficial clots need blood thinners?

No. Small, low-risk clots may need only symptom relief and follow-up. Anticoagulants are more likely to be used when a clot is extensive, close to a deep vein or at increased risk of progressing.

Can thrombophlebitis come back?

Yes. Recurrence is more likely with varicose veins, a previous clot or an ongoing clotting risk. Repeated episodes may require further assessment.

Is a red, painful vein always a blood clot?

No. Skin infection, an inflamed vein without a clot and other conditions can look similar. A clinical assessment and, when needed, an ultrasound can identify the cause.

Sources

- National Institute for Health and Care Excellence. Venous thromboembolic diseases: diagnosis, management and thrombophilia testing (NG158)
- European Society for Vascular Surgery. 2021 Clinical Practice Guidelines on the Management of Venous Thrombosis . European Journal of Vascular and Endovascular Surgery, 2021;61(1):9-82
- American Society of Hematology. 2020 guidelines for management of venous thromboembolism: treatment of deep vein thrombosis and pulmonary embolism . Blood Advances, 2020;4(19):4693-4738
- NHS. Phlebitis (superficial thrombophlebitis)
- Thrombosis Canada. Superficial Vein Thrombosis, Superficial Thrombophlebitis: Clinical Guide
- Centers for Disease Control and Prevention. About Venous Thromboembolism (Blood Clots)