

CHAPTER 5 SUPERFICIAL VENOUS THROMBOSIS

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Clinical Presentation /Diagnosis

Superficial venous thrombophlebitis (SVT) is an attack of **blood clots** in **veins** that lie under the skin within the fat of the body but not in the **deep veins**. It is a relatively common medical problem. It can get better and then happen again (recurrence). It has a low chance but known risk of **deep vein thrombosis (DVT, blood clots in the deep veins)** and **pulmonary embolism (blood clots moving to the lungs)**. How often **SVT** occurs in the population is unknown. It affects men and women at about the same rates with most occurring in the mid-fifties. **Varicose veins** are present in over sixty-two percent of patients having **SVT**. Other risk factors (factors that increase the risk of having **SVT**) include greater than 60 years old, obesity, smoking, and a prior history of **DVT** or **SVT**. The physical signs of **SVT** is warmth and redness with pain along a **superficial vein** and sometime even a cord or thickening of the vein that can be felt because the blood clot within is making the vein bigger in size. Swelling of the lower leg or arm may or may not be present. Other disease conditions such as infection of the skin and fat (**cellulitis**) or infection of the third type of blood vessel (**lymphangitis**) may look like **SVT**. However, a **duplex ultrasound** (a sound wave study used to see the **vein** though the skin) will help to know if **venous thrombosis** is present. So the diagnosis is made by the presence of associated symptoms, physical findings, and showing the blood clot within the vein by **duplex ultrasound**.

The treatment of **SVT** depends on the location of the **venous thrombosis** and what caused it. The most common cause of **SVT** in the upper extremities is from an intravenous catheter (plastic tube placed into the **vein**) used to give the patient fluids or medicines. **SVT** can also occur in the large **veins** alongside the breast and chest wall. It can also develop at various sites in the lower leg. It is not uncommon for these events to be associated with an underlying cancer or **hypercoagulable** (increased blood clotting) **states**. **SVT** of the lower extremities can be found in branches of the **greater saphenous vein** (the large vein going from groin to ankle which lies in the fat just under the skin) only, involving the **greater saphenous vein** and its offshoot vein. It can also happen in the **small saphenous vein** located in the back of the calf. **SVT** can occur in **varicose veins** with or without an **ulcer** present in the lower leg.

Once physical findings suggest that **SVT** is present, this clinical idea is proven by a venous **duplex ultrasound** study. A **duplex ultrasound** study uses sound waves to make a picture of the vein and to show if blood is flowing in the vein or not. No blood movement and a large vein show that **SVT** is present. A **venogram** involves placing a needle in a vein further out from the suspected clot and injecting agents which can be seen by X-ray to show where the clot is located. This is rarely used in current medical

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practice. **Duplex ultrasound** has taken its place, is safe, can be repeated as needed, is completely noninvasive (does not invade the body) and is very accurate in showing the **superficial vein thrombosis**. **Duplex ultrasound** should be done whenever **SVT** is found in the legs. Up to forty percent of patients with leg **SVT** may also have a **deep vein thrombosis** which is more risky for the patient.

Etiology

The cause of **SVT** is not always easy to find. Certainly injury to a **varicose vein** from trauma (hitting) or the presence of an IV catheter in an area where **SVT** is found is the likely cause. But, in about forty percent of patients there is a **hypercoagulable state** which is causing the increase risk of **blood clots**. Identifying which abnormal **clotting factor** is present may change how the doctor must treat the **SVT**.

Treatment

The location of the **SVT** will help the doctor decide on what local care or drug and how long the treatment should be given. **SVT** caused by an intravenous catheter can be treated by taking the catheter or needle out of the vein and placing warm cloths (compresses) over the area. Non-steroidal anti-inflammatory drugs, such as ibuprofen, taken by mouth for a short time helps to relieve the discomfort and decrease the local effects. Antibiotics may be necessary if pus is noted from the drainage site around the IV catheter when removed. Occasionally infection which can not be cleared from the vein with these methods and results in making the person very sick (sepsis) may require taking the vein out with an operation. This is rarely needed.

Recurrent **SVT** occurring in varying sites of the lower extremity or the presence of **SVT** along the chest wall or breast area is most commonly treated with warm compresses and non-steroidal drugs. Work up for these conditions should include a search for an unknown cancer or state which is causing the patient to be too active in forming blood clots (hypercoagulable state).

There are still questions as to how best to treat **SVT** involving the lower extremities which appear to have no known cause and in some particular locations within the body. **SVT** of the lower extremities not associated with **deep vein thrombosis**, having no **hypercoagulable state** and occurring in a place not near the groin or upper thigh are most often managed with warm compresses, compressive stockings, and non-steroidal drugs. **SVT** with a **deep vein thrombosis** and/or **hypercoagulable conditions** and/or **venous thrombosis** in the **saphenous vein** near the groin and upper thigh or upper calf are given full dose **blood thinning drugs (anticoagulants)** such as **heparin**. A **duplex ultrasound** is obtained at the first thought that **SVT** is present to make sure these conditions are not present and if **anticoagulant** drugs are not given it is repeated in 48 to 72 hours to make sure that the clot has not gone up the **vein** or deeper in the body. **Anticoagulant** therapy with **heparin** and long term **blood thinning** with **warfarin** may be used if the clot is extending. Occasionally, surgical removal of the clotted **great saphenous vein** with tying it off in the high groin may be suggested as another way to

decrease pain and stop any more clotting from taking place. This may become necessary if the patient cannot take anticoagulant medication for medical reasons.

Conclusion

Most cases of **SVT** are not noticed or taken seriously by the patient and get better without treatment. It found, the treatment is often conservative with the use of **compression stockings**, non-steroidal drugs, and removing an IV catheter if this is the cause. It is important to make sure that the patient does not have a condition which is causing more than normal blood clotting (**hypercoagulable states**) or has an unknown cancer. Finally, **anticoagulant** medication may be necessary for those **SVT's** that are in the largest part of the **saphenous vein** (near the groin or upper thigh), are increasing up the **vein** during observation or those who are also found to have a **deep vein thrombosis** or **pulmonary embolism**. If there is no treatment with a **blood thinning drug**, a repeat **duplex ultrasound** study should be obtained in most patients with lower extremity SVT.

Commonly asked questions

What is superficial venous thrombosis?

Superficial venous thrombosis is a **blood clot** forming in one or more **veins** located in the fatty tissue lying directly below the skin. These are usually rather small **veins** and the clot stops within these **veins**. If the blood clotting stops before it gets to the largest part of the major **superficial vein** (the **saphenous vein**) or before it goes to the **deep veins**, it generally will not cause much more than local pain, swelling, and redness over the **vein**.

How do I know if I have superficial venous thrombosis?

You will usually have a tender area over a **vein** and may see local redness with some swelling of the lower leg. When you go to the doctor to have it further studied, the doctor will usually obtain a **duplex ultrasound** study which uses sound waves to have a picture of your **veins** and to show if blood is moving normally in the **veins**. Venous clotting (**thrombosis**) is present when the **veins** are bigger than normal (filled with **blood clot**) and little or no blood movement is taking place.

What is the treatment of superficial venous thrombosis?

If the **SVT** is located only in a lower leg **varicose vein** and not close to the big part of the biggest **superficial vein** (the **saphenous vein**), treatment is usually warm compresses, **compressive stockings** and anti-inflammatory drugs to decrease local discomfort. If **SVT** goes into the biggest **superficial veins** especially close to the groin and upper thigh or if there is also **deep venous thrombosis**, than full dose **blood thinning agents** (**anticoagulant** therapy) are needed to protect you from blood clot going to the lungs (**pulmonary embolus**).