

Deep Vein Thrombosis (DVT) Characteristics

Deep vein thrombosis (DVT) is a serious complication in patients with specific risk factors. Patients who fulfill any part of Virchow's triad may develop DVT, which presents as redness, swelling, warmth, tenderness and a positive Homan's sign. Often, patients can be asymptomatic.



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Mechanism

Virchow's Triad

V-of-chows Triangle

Virchow's triad describes the interplay of three processes resulting in venous thrombosis; venous stasis, endothelial damage and hypercoagulability.

Venous Stasis

Vines Stop-sign

Venous stasis, or a decreased blood flow rate, can lead to deep vein thrombosis. Patients who are bedridden, postoperatively immobile, or those who are immobile for a relatively long period of time (plane ride), can develop a DVT.

Endothelial Damage

Inner-layer Damaged

Changes to the vessel wall, such as endothelial damage, can lead to thrombosis. Endothelial injury leads to a cascade of platelet repair, which can further incite the coagulation cascade.

Hypercoagulability

Hiker-clogs

Patients who are hypercoagulable, such as those with familial diseases or who are just beginning warfarin (before it works as a blood thinner), have increased risk for DVT.

Symptoms

Tenderness

Tenderizer

Those who develop DVT can complain of tenderness at the site of thrombosis.

Homan's Sign

Homeless-man showing Homan-sign

Homan's sign is described by tenderness occurring from dorsiflexion of the effected foot.



Warmth

Warm-fire

The site of thrombosis may become warm.

Redness

Redness

Redness, or rubor, may also develop at the site of thrombosis.

Swelling

Swelling

Many patients display swelling at the site of pathology. Often the calf or thigh is greatly enlarged.

Asymptomatic

Thumbs-up

About half of patients who develop DVT are asymptomatic.