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Venous Thromboembolism (DVT) Assessment

A venous thromboembolism can occur when there is damage to a blood vessel or when the flow of blood is interrupted, causing venous stasis. Pooling of blood, activation of platelets, and clotting factors can lead to platelet aggregation and thrombus formation, known as a deep vein thrombosis, or DVT. Patients with a DVT may experience tenderness, warmth, and swelling of the affected extremity, though some patients may also be asymptomatic. A patient with this condition is at risk for embolization of the clot and should be monitored closely for signs and symptoms of a pulmonary embolism including dyspnea, tachycardia, and chest pain.



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Mechanism

Venous Wall Inflammation caused by Thrombus

Vines at Vine Wall In-flames by Trombone

Thrombus formation can be attributed to three factors: venous stasis, endothelial damage, and blood hypercoagulability. When valves in the veins of the leg(s) do not function properly or when muscles of the leg are inactive for extended periods of time, pooling of blood in the lower legs can occur. This is called venous stasis. Direct or indirect injury to a vessel, called endothelial damage, can stimulate the activation of platelets and clotting factors, increasing platelet aggregation and contributing to significant hypercoagulability. As clotting factors continue to make fibrin, more platelets and red and white blood cells will stick to the wall of the vein forming a clot.

Assessment

Tenderness

Tenderizer

Patients with a VTE may present with tenderness of the affected extremity over the area of inflammation or distal to the site.

Edema

Edamame

Edema of the affected extremity can occur due to increased venous pressure and dependent pooling of fluid in circulation. If edema or swelling is present, the skin covering the extremity may appear tight, smooth, and shiny.

Warmth

Warm-fire

A patient presenting with a VTE may also notice warmth of the affected area due to inflammation.

Asymmetry

Asymmetrical

Because a VTE typically affects one limb at a time, the patient's extremities may present asymmetrically in appearance and condition. The affected leg may present with signs of a VTE while the other leg is unaffected.

Considerations

Could be Asymptomatic

Thumbs-up

Keep in mind that although tenderness, swelling, and warmth are common signs of a VTE, patients with this condition may be asymptomatic.

Monitor for Pulmonary Embolism

Monitor for Lungs Elmo

Depending on severity, the patient with a VTE may need hospitalization and monitoring of a VTE if there is a significant chance of pulmonary embolism development. This occurs when the VTE mobilizes into the pulmonary vasculature and become a pulmonary embolism (PE). At risk patients should be



monitored closely for new or worsening symptoms of a PE including dyspnea, tachycardia, and chest pain.