

Catheter-Directed Thrombolysis of Lower Extremity DVT

Deep venous thrombosis (blood clot) of the lower extremity (LEDVT) is a major and well recognized clinical problem in the United States. Approximately 300,000 new cases occur annually. The most serious and life-threatening complication of LEDVT is pulmonary embolism (clot dislodging and flowing into the lung arteries), accounting for about 50,000 deaths a year.

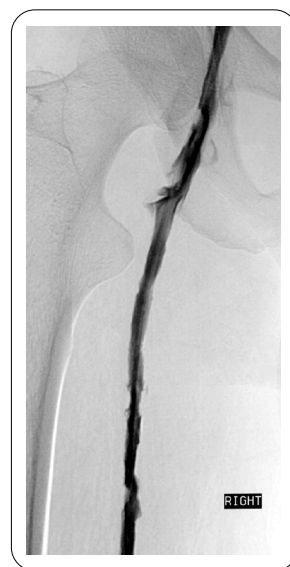
Another complication of LEDVT is post-thrombotic syndrome. Its onset is delayed for months to years, but it occurs in 60%-70% of patients with acute LEDVT. It is not life-threatening, but it can be debilitating and costly, and is manifested by leg swelling, pain, discoloration and ulceration.

Lower extremity deep venous thrombosis is difficult to assess clinically, but is easily diagnosed with a non-invasive and quick ultrasound test, which has a 95% accuracy. Once diagnosed, rapid treatment is paramount. This treatment, consisting of heparin followed by oral coumadin, is good at preventing life-threatening pulmonary embolism, though it does not dissolve the existing clot. As this clot retracts, it permanently damages the valves within the veins, which will then lead to valvular insufficiency, itself leading to post-thrombotic syndrome.

To dissolve the clot and prevent valvular damage (and its long-term sequelae), a new treatment option is being offered. The interventional radiologist inserts a catheter (hollow tube) into the involved vein and directly into the thrombus and then infuses a liquid that dissolves the clot. Total clot dissolution may take one or two days and carries some risks, including bleeding. Careful patient selection is required for a safe and effective outcome, which approaches 85%.



The image (prone) shows that the right femoral and popliteal veins are filled with thrombus. The patient has extensive iliofemoral DVT.



Following catheter-directed thrombolysis, the clot has dissolved, blood flow and patency are restored, and valve function is likely preserved. The entire clot burden extending to the pelvis was cleared with this technique.

further reading:

Directed thrombolysis for iliofemoral venous thrombosis. AJR 1999; 172:667-672.

The topic is also found on the web by searching "Thrombolysis."