

Combined Regional Thrombolysis and Surgical Thrombectomy Is an Effective Treatment for Iliofemoral DVT

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Purpose

In at least half of patients with iliofemoral deep vein thrombosis, post-thrombotic syndrome develops when only anticoagulant therapy is given. We combined thrombolysis, applied under ischemic conditions, with surgical thrombectomy to restore patency and valve function. The technique and the short-term and long-term results in two patient series are reported.

Methods

A catheter was inserted into a foot vein of the thrombosed leg, and the limb was excluded from the circulation with a pneumatic cuff placed on the thigh with the patient under general anesthesia. Urokinase (0.5 to 3 million IU) and heparin were infused in the leg and allowed to act for 30 minutes while the pelvic axis was cleared with a Fogarty catheter through an inguinal venotomy. The external iliac vein was then clamped and the cuff removed. Thrombi that detached from the wall were flushed out with reactive hyperemia and squeezed out with manual leg compression. The blood was retrieved, washed, and transfused back into the patient. Various additional procedures were performed to secure outflow. Two patient series are reported: one with 12 consecutive patients and one with 21 patients who were successfully treated 6 to 10 years previously. Follow-up data were obtained for all patients after 1 year and for 18 of 21 patients after 6 to 10 years. Patency and valve function were assessed with duplex scanning or venography. Studies of blood coagulation and the kinetics of urokinase were performed in five additional patients.

Results

Vein patency and valve function were restored in all consecutive patients. At 1 year, none of the 33 patients had had recurrence, and none showed clinical signs of post-thrombotic syndrome. At 6 to 10 years, 3 of 18 patients had experienced another venous thromboembolism, but none in the treated leg. Sixteen legs were asymptomatic without compression therapy, and two had venous claudication. Coagulation studies showed a trace concentration of urokinase and a mild decrease in fibrinogen in the systemic circulation. The concentration of urokinase in blood collected from the treated leg was only 1% of that infused.

Conclusions

Regional thrombolysis combined with surgical thrombectomy is relatively easy to perform and seems safe. Vein patency and valve function were restored, and post-thrombotic syndrome was prevented. Additional procedures to overcome pelvic vein obstructions were required in 11 of 33 patients (33%). The procedure should be tested against standard anticoagulation therapy in patients with acute iliofemoral thrombosis. A multicenter study is planned in Europe.