

Wednesday, July 15, 1981

Oral Presentations

Thrombosis, Clinical – VI

Venous Thrombosis Diagnosis

08:00–09:30 h

Thrombosis, Clinical – VII

Venous Thrombosis Treatment

09:45–11:00 h

Cinema 1

0514

08:00 h

OBJECTIVE DIAGNOSIS OF RECURRENT DEEP VEIN THROMBOSIS. R. W. Barnes, D. G. Turley, G. D. Qureshi, and M. J. Fratkin. Divisions of Vascular Surgery, Hematology and Nuclear Medicine of the Departments of Surgery, Medicine and Radiology, Medical College of Virginia, Richmond, VA, USA.

Recurrent deep vein thrombosis must be differentiated from other causes of leg pain, swelling and inflammation, including chronic venous insufficiency or the postphlebotic stasis syndrome. Venous obstruction and/or valvular incompetence was evaluated by Doppler ultrasound in 229 patients with recurrent leg symptoms following one or more prior episodes of clinical deep vein thrombosis. The diagnostic sensitivity and specificity of the Doppler technique was 96% and 90%, respectively, in 259 consecutive contrast phlebograms. In a subset of 65 patients with abnormal Doppler examination, I-125 fibrinogen leg scans were performed prior to institution of anticoagulants in order to establish the diagnosis of recurrent active thrombosis (positive scan) or inactive postphlebotic disease (negative scan).

In the 229 symptomatic patients screened, the Doppler examination was normal in 87 (38.0%). In 65 patients with abnormal deep veins receiving I-125 fibrinogen, leg scans were positive in 25 (38.5%), suggesting active thrombosis which was treated by anticoagulants. The remaining 40 patients were treated for the postphlebotic syndrome with leg elevation and elastic support and none developed manifestations of venous thromboembolism.

This study suggests that many individuals (38%) with suspected recurrent deep vein thrombosis have normal leg veins and that the majority (62%) of patients with proven venous abnormalities have inactive (postphlebotic) disease which does not require anticoagulation.

0516

08:30 h

NONINVASIVE SCREENING FOR ACUTE DVT BY MEANS OF LEG TEMPERATURE PROFILES AND VENOUS EMPTYING CURVES AS COMPARED TO CONVENTIONAL THERMOGRAPHY AND PHLEBOGRAPHY. E. Nilsson, K. Holmgren, H. Jacobsson, H. Johnsson and S. Zetterquist. Departments of Clinical Physiology, Internal Medicine and Radiology, Danderyds Hospital and Karolinska Hospital, Stockholm, Sweden.

A simplified thermographic technique has been developed to provide leg temperature profiles for diagnosis of acute DVT (Devetherm[®]). The temperature profiles are obtained by manual scanning from the foot to the hip with an infrared radiation transducer attached to a position indicator. The diagnosis of DVT is based on side-differences in mean segmental leg temperature.

In 200 patients admitted to hospital due to the clinical suspicion of acute DVT, the leg temperature profiles were pathological in 132 of those 140 patients who proved to have DVT at phlebography which means a sensitivity of 94%. False positive results were obtained in cases with e.g. varicose veins or regional infections but these errors could be reduced if the profiles were not only numerically evaluated but also subjected to pattern analyses. A combination with venous emptying curves as obtained from venous occlusion plethysmography further improved the specificity of the non-invasive diagnostic procedure. This combination also proved favourable for the differentiation between proximal and distal leg thromboses as well as acute and old DVT. Some of the patients were investigated with thermography by a scanning camera. The results correlated closely to those obtained with the simplified thermographic technique but without improving the diagnostic sensitivity.

0515

08:15 h

THE USE OF NON-INVASIVE TESTING AND VENOGRAPHY FOR THE DIAGNOSIS OF ACUTE RECURRENT DEEP VEIN THROMBOSIS. R. Hull, C. Carter, P. Ockelford, J. Hirsh, A. Zielinsky, A.G.G. Turpie, P. Powers. Department of Medicine, McMaster University, Hamilton, Ontario, Canada.

Impedance plethysmography (IPG) combined with leg scanning is highly sensitive and specific for deep vein thrombosis (DVT) in patients with their first episode of clinically suspected DVT. This approach has not been evaluated in patients with suspected recurrent DVT. In this group of patients venography alone is of limited value in excluding acute DVT in the presence of previous DVT but is useful if constant intraluminal filling defects (ILFD) suggesting acute DVT are present. We have evaluated the clinical utility of IPG plus leg scanning and venography in 132 patients with clinically suspected acute recurrent DVT. If the IPG on referral was negative the patient was leg scanned daily for 72 hours and if both were negative, anticoagulant therapy was withheld. The validity and safety of this approach was tested by 3 months follow-up. If IPG was positive, venography was performed to distinguish ILFD's from chronic DVT. If ILFD's were detected, anticoagulant therapy was commenced. If no ILFD's were detected the patient was leg scanned for 72 hours and if negative treatment was withheld. The clinical utility of this non-invasive approach is demonstrated by the results of this study. Of 132 patients, 82 (62%) were negative by both non-invasive tests and none died, developed pulmonary embolism or recurrent DVT during follow-up. The remaining 50 patients were positive by non-invasive testing; in 31 patients ILFD's were detected and in 16 venography was indeterminate showing collaterals, absent segments, recanalization or inadequate visualization. The leg scan was positive in 10 of the latter 16 patients. Thus the diagnosis of recurrent acute DVT was established by the presence of ILFD's or a positive leg scan. In 6 patients with a positive IPG, negative leg scan and indeterminate venogram the diagnosis remained uncertain. In conclusion this combined non-invasive and invasive approach provided definitive management in 126 of 132 patients (95%).