1399

SIDE EFFECTS OF ASCENDING VENOGRAPHY. M. Vigo (1), A.W.A. Lensing (2), F. Corbetti (1), P.R. Biondetti (1), P. Tropeano (3) and P. Prandoni (3). Radiologia II (1) and Clinica Medica II (3), University of Padova, Italy; Centre for Thrombosis, Haemostasis and Atherosclerosis Research, University of Amsterdam, the Netherlands (2).

Two hundred and sixtyeight (268) consecutive out-patients with clinical features compatible with deep venous thrombosis (DVT) were referred to our Department for contrast venography, which was carried out according to standard methods, employing 120-160 ml of a non-ionic contrast medium (Iohexol). All side effects probably related to venography were recorded during the test, immediately after its execution, at one day and during long-term follow-up (1 week, 1 month and 6 months), including impedance plethysmography (IPG) evaluation in patients with normal venograms. Eighteen patients (7%) did not undergo venography because of severe edema of the dorsum of the foot (3), impossibility to find a vein (7), patient refusal (1), known hypersensibility to radiopaque dye (4) and allergic reactions after injection of contrast medium (3). Our analysis therefore included 250 patients. Hypersensitivity reaction to the contrast medium following the venography were encountered in 3 patients (1%) of whom two had severe reactions. Pain and tenderness of the foot and calf after the test was observed in 15 patients (6%). No clinical signs and symptoms of pulmonary embolism were observed during and after the procedure and all serum creatine levels, assessed before venography, at day 1 and day 7, remained unchanged. There were 7 instances of contrast extravasation (3%) which did not result in local skin or tissue damage. In none of the patients was there any evidence to suggest the presence of post-venographic phlebitis and no patients with negative venograms developed a positive IPG during the period of follow-up.

1400

SAFETY AND EFFICACY OF SERIAL IMPEDANCE PLETHYSMOGRAPHY IN THE DIAGNOSIS OF DEEP VEIN THROMBOSIS IN AN URBAN HOSPITAL: AN EXTERNAL VALIDATION STUDY. H.S.F. Heyermans (2), M.V. Huisman (1), H.R. Büller (1) J. v.d. Laan (2), J.W. ten Cate (1).
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The clinical diagnosis of deep vein thrombosis (DVT) is unreliable. Impedance plethysmography (IPG) has become accepted as a highly reliable non-invasive method for DVT detection in symptomatic patients. It has a high sensitivity (95%) and specificity (96%) for proximal vein thrombosis. Studies with impedance plethysmography have however always been carried out in academic hospitals. To evaluate the safety and efficacy of serial impedance plethysmography alone in an urban hospital setting, a prospective study was done in an urban hospital, involving 234 consecutive outpatients with clinically suspected venous thrombosis. IPG was performed on days 1, 2 and 7. If all tests remained normal the patient was not treated with oral anticoagulants. All patients were followed for 3 months. In 131 of the 234 patients (56%) IPG was repeatedly normal. Of these 131 patients, no patient died from venous thromboembolism during 3 months follow-up, completed in all patients, and no patient returned with signs of pulmonary embolism. One patient (0.8%) returned with objectively documented DVT after two months. In 103 of the 234 patients (44%) the IPG was abnormal. Venography confirmed the diagnosis of deep venous thrombosis in 92%.
It is concluded that serial IPG is a safe and effective method to detect DVT in clinically suspected outpatients, referred to an urban hospital.

1401

ARE THE SYMPTOMS OF THE POST PHLEBITIC LIMB ALWAYS POST THROMBOTIC? C.J. Parker, D.E. Huber, A.R. Hedges and V.V. Kakkar. Thrombosis Research Unit, King's College School of Medicine & Dentistry, Denmark Hill, London SE5 8RX, UK.

The term 'post phlebitic syndrome' implies a previous history of deep venous thrombosis. To test the validity of this assumption, 106 patients who had routine post-operative bilateral ascending venography following total hip replacement were reviewed five years later.

Patients were assessed clinically for symptoms and signs of the 'post phlebitic syndrome' (pain, swelling, induration, pigmentation, ulceration and varicose veins). Haemodynamic changes were assessed by foot volumetry and an objective score was derived by computer analysis.

Thirty patients (28%) had post-operative DVT. 50% of all patients had at least one symptom or sign of the post phlebitic limb. Pain was present in 9 limbs; swelling in 13; induration in 18; pigmentation in 55, and varicose veins in 53 limbs.

At five years there was no significant difference in the incidence of symptoms, signs or haemadynamic changes of the post phlebitic syndrome between limbs with or without a previous DVT. We conclude that deep vein thrombosis is not the only factor involved in the aetiology of the post phlebitic limb.

1402

THE ROLE OF Tc-99m RED BLOOD CELL (RBC) VENOGRAPHY IN PATIENTS WITH CLINICALLY SUSPECTED DEEP VEIN THROMBOSIS. J.R. Leclerc, T. Wolfson, C. Rush, L. Lepanto, A. Arzoumanian, F. Raymond, and L. Rosenthall. Montreal General Hospital, Mc Gill University, Montreal, Que., Canada.

Although it has been available for a number of years, Tc-99m RBC venography has never been evaluated in an epidemiological study. We have compared Tc-99m RBC venography to impedance plethysmography (IPG) in 113 consecutive eligible patients with clinically suspected first episode of deep vein thrombosis (DVT). IPG was performed at initial presentation (day 0) and RBC venography within the next 72 hours. RBC venography was performed by labelling in vitro 5ml of patients' red blood cell with 20 millicuries of Tc-99m. Patients with an initially abnormal IPG underwent contrast venography to rule out a falsely positive test result. Patients with an initially normal IPG had the test repeated at day 1, 3, 5 to 7 and 10 to 14. Anticoagulant treatment was witheld in all patients who remained normal by serial IPG testing. All patients underwent a 3 month follow-up period. RBC venography was considered abnormal if there was a 50% or greater decrease in isotope concentration in a deep vein compared to the same vein in the other leg. The sensitivity of RBC venography was 79% with 95% confidence limits (C.L.) from 59% to 92%. Specificity was 61% (95% C.L. from 51% to 71%). Positive and negative predictive values were 37% (95% C.L. from 25% to 51%) and 91% (95% C.L. from 81% to 96%) respectively. None of the patients who remained normal by serial IPG testing died from or had objectively documented venous thromboembolism during the follow-up period. We conclude that : 1) RBC venography is non-specific and, 2) a decision to treat should not be made on the basis of the results of this test alone in view of its low positive predictive value.