

293

RADIOISOTOPIC DYNAMIC STUDY OF ASSESSMENT OF PERIPHERAL OBSTRUCTIVE ARTERIAL DISEASE.

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A tracer technique was performed for evaluation of peripheral vascular disease by injection of an intravenous bolus of 20 mCi of ^{99m}Tc albumin.

The time activity curves in bilateral toes and fingers of the hands were obtained during reactive hyperemia using a Baird-Atomic System 77.

In normal subjects, the typical peak activity was seen, the slight peak or the absence of peak was recognized in obstructive arterial disease.

Mean transit time (MTT) was obtained using gamma function in each case with the typical peak or slight peak. First inflexion points were also acquired in all cases.

Linear regression analysis of MTT and first inflexion point with the typical peak or slight peak was performed. The correlation coefficient was -0.9.

In the cases of the curves with the absence of peak MTT can't be acquired directly, it was gained in such cases by the linear regression curve.

In normal cases MTT was within 25 seconds whereas over 30 seconds in peripheral vascular disease.

294

The clinical usefulness of radionuclide angiography for evaluation of circulation of replanted limb and digit.

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Radionuclide angiography by Tc-99m Red Blood cells has been used to image the heart and great vessels and to evaluate the blood pooling of spleen and placenta.

Recently Radionuclide angiography became to use image the peripheral vessels. So, we used radionuclide angiography to evaluate the circulation of replanted limb and digit. We report the clinical usefulness of radionuclide angiography.

Eight cases: amputation of upper limb two cases, amputation of hand four cases, amputation of digit two cases.

Intravenous injection of stannous pyrophosphate 10mg and Tc-99m 15mCi is injected from dorsal foot vein after thirty minutes. Immediate radionuclide angiogram at upper limb obtained and ten minutes after image the vessels of forearm and hand.

We used OHIO NUCLEAR Σ410 Type Scintillation camera. This method is simple and safe. Multiple follow up studies may be performed we obtained clear image of peripheral vessels and could evaluate the patency of sutured vessels.

295

DETECTION OF THE ISCHEMIC DISEASES ON THE LOWER EXTREMITY WITH Tl-201 AND Tc-99m-PERTECHNETATE LEG SCANS COMBINED WITH RADIOISOTOPIC ANGIOGRAPHY. H. Bunko, K. Ichiyanagi, N. Tonami, K. Hisada and C. Yoshida. Department of Nuclear Medicine and 1st Surgery, School of Medicine, Kanazawa University. Kanazawa.

Purpose of this study is classification of the leg scan patterns and evaluation of the diagnostic significance of the leg scans and radionuclide angiography (RNA) in the patients with ischemic diseases of the lower extremity (IDL). Fourteen patients with thromboarteritis obliterans (TAO), 27 with arteriosclerosis obliterans (ASO), 5 with Raynaud's disease or Leriche syndrome, 5 normal patients and 7 patients after surgery for IDL were studied. Leg scans were performed after mild exercise using whole body camera. 5 leg scan patterns were distinguished; A: unilateral generalized decreased activity, B: unilateral localized decreased activity, C: unilateral decreased activity with increased activity in the same side, D: increased activity in the affected side and E: normal. In the 50 preoperative IDL, sensitivity of Tl leg scan alone was 64% and that of combined use of Tl and Tc was 71%. Addition of the RNA increased sensitivity of IDL upto 93% and accuracy was 94%. Combined use of Tl and Tc leg scans in conjunction with RNA was useful for detection of IDL, and was also useful for evaluation of the results of the surgical intervention.

296

RADIONUCLIDE VENOGRAPHY AND PULMONARY PERFUSION SCAN WITH Tc-99m MAA -WHOLE BODY GAMMA CAMERA IMAGING WITH CONTINUOUS INJECTION-. M. Fujioka, M. Mashimo, H. Hiraoka, M. Ide, K. Suzuki and T. Miyamae. Saitama Medical School. Saitama.

Whole body gamma camera imaging method was described first by Hayt (1976). We obtained images of poor quality from 4 patients who were studied with Hayt's technique (2mCi/4min). So, images of good quality were obtained by using our improved technique. The tourniquets are placed on ankle and 19-23G butterfly needle is inserted into dorsal vein. Four mCi/8ml/5min of Tc-99m MAA were continuously injected with lymphographic injector. When pulmonary activity is found, imaging is started from the lung and IVC. Imaging speed were 12 cm/min for the lung and IVC:16cm/min for the pelvis:24cm/min for the thigh:48cm/min for the lower leg. When the abnormalities of venous system were suspected, we added the radionuclide venography following the bolus injection. Next, routine pulmonary perfusion scan was performed.