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DETECTION OF LEFT-ATRIAL THROMBI USING INDIUM-111-LABELED AUTOLOGOUS PLATELETS. M.Yamada, A.Katayama, H.Yoshima, N.Hoki, K.Onish and Y.Kobayashi. Osaka Prefectural Hospital. Osaka

The aim of this study is to detect atrial thrombi using In-111 platelet scintigraphy. 14 patients with mitral valve diseases were studied. Imaging was performed in the anterior, right anterior oblique 45° and left lateral views on the day of injection and thereafter at 1 or 2 days intervals for a maximum of 4 days. Scintiphotos were interpreted by examining whether to have "hot spot areas" reflecting increased In-111 activities within the left atrial blood pool using the following criteria. Criteria: When images obtained in 2 or 3 views 72 or 96 hrs after injection showed "hot spot areas" and In-111 activities in "hot spot areas" did not decrease with time, they were interpreted as positive. 5 positive, 8 negative and 1 false negative scintiphotos were demonstrated among 14 patients. These were confirmed at surgery or autopsy. The diagnostic sensitivity of the platelet scintigraphy was 83%, the specificity was 100% and accuracy was 93%. In this study, a dual-isotope technique employing In-111 labeled platelet and Tc-99m labeled HSA was also examined to allow the subtraction of the blood pool and the calculation of the ratio In-111 deposited:In-111 blood pool(T/B). The volumes of T/B were significantly higher in patients with left atrial thrombi than those without left atrial thrombi. These results indicate that In-111 platelet scintigraphy will be a promising method for the detection of left atrial active thrombi.

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DETECTION OF THROMBI BY SCINTIGRAPHY WITH IN-111-OXINE LABELED AUTOLOGOUS PLATELETS. K.Ikeoka, Y.Todo, M.Oyanagi, N.Yasutomi, Y.Kawai, T.Iwasaki and M.Fukuchi. Hyogo College of Medicine. Nishinomiya.

Detection of intracardiac and vascular thrombi by scintigraphy with In-111-oxine labeled autologous platelets was studied in 41 patients. The results of platelet scintigraphy were compared with those of other methods (echocardiography, computed tomography, angiography etc). The platelets were labeled by a modification of Thakur's method. On platelet imaging of intracardiac thrombi, 4 of 14 patients with myocardial infarction and 7 of 10 with mitral valve disease had thrombi, and all were detected by 2-dimensional echocardiography. One patient was negative on scintigraphy who had positive findings on echocardiography and angiography. On platelet scanning there was no positive patient who was negative by other methods. On the other hand, the findings on platelet scanning of vascular thrombi were positive in 2 of 4 patients with dissecting aneurysm who had negative findings on angiography, and one of the 2 patients was positive by computed tomography. One of 3 with arteriosclerosis obliterans, 1 of 2 with prosthetic arterial grafts and 2 of 3 with thrombophlebitis were positive on scintigraphy. All were not detectable by other methods. On assessing with the scintigraphic findings of thrombi, we attempt to evaluate the significance of this method.

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CLINICAL EFFICIENCY OF IN-111 OXINE LABELED PLATELET FOR DETECTION OF DISSECTING ANEURYSM. T. Takeda, K. Sakakibara*, T. Nakajima, K. Matsumoto, R. Hatakeyama, M. Ohshima, N. Ishikawa and M. Akisada. Tsukuba University Hospital. (Department of Radiology and Cardio-surgery*)

Many reports have been made on clinical efficiency of In-111 oxine platelet, which accumulates in thrombus.

We have studied accumulation ability of In-111 oxine, accumulation differentiation in old and fresh thromboses, diminution rate of radio-isotope activity, and dynamical changes of accumulation area and activity of anti-thrombus drug.

Uptake of In-111 oxine in fresh thrombus is much higher than that in the old one.

Dynamic approach has been performed for the counting rate of thrombus and other organs (liver, spleen, artery). So, we know that the thrombus on 24hr examination is represented more clearly than that on 2hr examination.

The anti-thrombus drug was used to make comparison studies of activity between pathological material and radioactivity of tissues, and it was suggested that this examination would be a good index to know the pharmacological effect on thrombus.

We will report the details of the examination on this disease and cardiac thrombus.

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EVALUATION OF PLATELET DEPOSITION IN PROSTHETIC ARTERIAL GRAFTS BY DUAL ISOTOPE TECHNIQUE USING IN-111 PLATELETS AND Tc-99m HSA. Y.Isaka, M.Kusunoki, H.Etani, O.Uyama, S.Yoneda, K.Kimura, H.Abe and T.Ohshiro. Osaka University Medical School. Osaka.

To evaluate the relationship between platelet deposition and patency of prosthetic arterial grafts, dual isotope technique using In-111 platelets and Tc-99m HSA was performed in 18 patients with prosthetic arterial grafts. The region with greater activities in In-111 platelets scintigram than those in Tc-99m HSA scintigram was diagnosed as positive for platelet deposition. Nine of 18 grafts had positive findings by this technique. The frequency of positive scintigraphic results was 63%(7/11) in aorto-bifemoral grafts, 17%(1/6) in ileo-femoral grafts, and, 100%(1/1) in axillo-femoral graft. The positive scintigrams were able to classify into two patterns; those with focal uptake of platelets on prosthetic arterial grafts in 3 cases and those with diffuse uptake in 4 cases. In addition, 3 cases with focal uptake pattern showed occlusion of graft, however, 4 cases with diffuse uptake pattern showed no occlusive findings of graft by using Tc-99m HSA radio-nuclide angiography. Dual isotope technique using In-111 platelets and Tc-99m HSA is promising method for the evaluation of the thrombogenicity and patency in prosthetic arterial graft.