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EVALUATION OF IN-111-OXINE PLATELET SCINTIGRAPHY IN DIAGNOSIS OF THROMBUS.

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In-111-oxine platelet scintigraphy was performed to assess it's clinical utility fpr diagnosis of thrombus in 63 patients with various cardiovascular diseases. Platelet was labeled by modified Hayashida's method.In addition to imaging in the anterior,left anterior oblique45° and left lateral views,single photon emission computed tomography(SPECT) in some cases were performed at 24 and 72 hours after labeled platelet injection.Thrombus was documenyed in 26 out of 63 cases with X-ray angiography,X-ray CT and two-dimensional echography.18 out of 26 cases with thrombus had positive images in scintigraphy (Sensitivity 69%),and all of 37 cases without thrombus had negative images (Specificity 100%).In 52 cases with cardiac disease,5 out of 6 cases with false negative images had been received antiplatelet and/or anticoagulant,and their platelet and coagulation study tended to be lower compared with those of true positive cases and true negative cases.We conclude that In-111-oxine platelet scintigraphy has clinical utility not only for the detdction of thrombus but also for the estimation of it's activity and effect of medical therapy.

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EFFECT OF CAPILLARY HYDROSTATIC PRESSURE ON LYMPH FLOW IN LOWER EXTREMITIES USING RI-LYMPHOGRAPHY WITH A COMPUTER ONLINED GAMMA CAMERA.

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Effect of capillary hydrostatic pressure on lymph flow was examined clinically using RI-lymphography with a computer onlined gamma camera.

Subjects were composed of 13 normal volunteers and 14 patients with various kinds of diseases.Tc-99m-HSA(3mCi,0.1ml)was injected into the subcutaneous tissue of the lower part of the pretibial area on supine position and scanned sequentially on the femoral region with the gamma camera for 40 minutes. ROI were decided at three points of lymph vessels,and time activity curves showing lymph flow were recorded. Venous pressure(capillary hydrostatic pressure) was measured in dorsal vein and was increased by a)drooping leg(18 cases) and b)cuff pressure (9 cases).

Lymph flow could be accelerated by increasing venous pressure in 59.3% (16/27); 41.7%(5/12) of normal volunteers and 73.3% (11/15) of patients. In 3 cases of these 16 cases,lymph flow could be accelerated by PVP of 35-40 mmH_2O,in 10 cases by PVP< 50 mmH_2O,in 2 cases by PVP< 60mmH_2O and in only 1 case by PVP≧ 60mmH_2O.

It is estimated that lymph flow tends to be accelerated by PVP of 35-60 mmH_2O in lower extremities clinically.

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In-111 PLATELET SCINTIGRAPHY IN DACRON BIFURCATION GRAFT.

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For evaluating the thrombogenesity of Dacron bifurcation graft, we developed a method which allows semiquantitative analysis of the degree of platelet accumulation in vivo. Twelve normal volunteers and 18 patients with Dacron bifurcation graft were examined. Using In-111 platelets and Tc-99m HSA scintigraphy, the degree of platelet accumulation was expressed as the ratio of radioactivity of the platelets deposited on the vascular wall to those circulating in the blood pool(PAI; platelet accumulation index). In this study, we explored the PAI value at the entire graft and in each pixel (PAI image). Platelet accumulation was more accerelated in patient group than normal one. PAI values over the entire graft decreased with aging of the graft, and finally it reached control value. When images were analyzed locally by the PAI images, the areas with high platelet accumulation were decreased with aging of the graft. In patients whose graft had malfunction, this natural history of the spontaneous normalization of platelet accumulation was not observed, i.e, focal uptake of the platelets were prominent at the proximal anastomosis of the graft.

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ARTERIAL THROMBOSIS MODEL IN RABBITS AND ITS IMAGING.

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We tried to make arterial thrombos model in rabbits and to make its images with Ga-67-fibrinogen-DAS-DFO and In-111 oxine platelet. Arterial thrombosis model was induced in the rabbit femoral artery without the conective tissue by application of chemicals, and 0.9% saline solution was applied to the opposite side femoral artery for the contrast study. For imaging fresh thrombus, Ga-67-figrinogen-DAS-DFO or In-111 oxine platelet was injected into the ear vein 1 hour after thrombus formation; for imaging old thrombus, the former was injected 1 day or 2 days after the thrombus formation. Scinti-images showed "hos spot" formation in the rabbit femoral artery 6 hours after the venous injection of Ga-67-fibrinogen-DAS-DFO: 24 hours after the venous injection of In-111 oxine platelet. Scinti-images of 1 day-old thrombus showed the increased accumulation, by those of 2 day-old thrombus didn't show significant accumulation.