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EXPERIMENTAL STUDIES ON QUANTITATIVE DETERMINATION OF TRICUSPID REGURGITATION BY RADIO-NUCLIDE ANGIOCARDIOGRAPHY. K.Tamari, K.Ohga, I.Hashimoto, H.Adachi, H.Sugihara. Kyoto Prefectural University of Medicine. Kyoto.

The clinical diagnosis of the presence and severity of tricuspid regurgitation (TR) is difficult. In order to study TR, right heart model with regurgitant circuit was employed. With the alteration of either flow output or regurgitant fraction of the model, first-pass radionuclide angiocardiology (RNAG) was performed. Time activity curves were generated from the region of interest assigned on the images of the right atrium and ventricle. Various parameters related to time interval or obtained by curve approximation were examined and compared in the groups.

From this experimental investigation for TR, of the many parameters, the slope of the descending portion of the time activity curves from the right atrium and ventricle was found to be the best correlated with the severity of TR, although other parameters were also useful to some extent.

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EVALUATION OF VPB FUNCTIONAL IMAGE BY LIST MODE ECG-GATED CARDIAC BLOOD POOL SCINTIGRAPHY. K.Ejiri, T.Kondo, Y.Watanabe, M.Sakurai, K.Kaneko, Y.Kato, T.Kiriyama, H.Hishida, Y.Mizuno, S.Hyakkoku, T.Asano, T.Takeuchi and S.Koga. Fujita Gakuen University Hospital. Toyoake.

The cardiac function of ventricular premature beat (VPB) could not be estimated by conventional ECG-gated cardiac blood pool scintigraphy, because this procedure was performed by summation of some hundreds cardiac cycles except for VPB. List-mode ECG-gated cardiac blood pool scintigraphy was performed in a patient with right atrial and right ventricular artificial pacemakers, a patient with bigeminy of VPB and another patient with bigeminy and trigeminy of VPB. All beats including VPB were recorded in a computer system. Then VPB were distinguished from sinus beats by difference of each R-R interval. Both left and right ventricular global EF and functional images of sinus beats and VPB were studied. Reduced global EF and ventricular wall motion in EF image of VPB comparing with sinus beat were observed, and patterns of phase images of VPB were different from that of sinus beat.

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STUDY OF BAD BEAT REJECTION PROGRAM. -CLINICAL USEFULNESS FOR GATED BLOOD POOL SCINTIGRAM. K.Sakakura, Y.Futamura, J.Sakurai, T.Furuta. Meitetsu Hospital Cardiovascular Division. Nagoya.

Bad beat rejection program is that made possible to various collecting method by frame mode, according to be divided collecting video memory to four buffers. We used this program as the following methods.

1. Rejection of arrhythmia : As to commonly used frame mode, when an extrasystole occurred the image of this extrasystole is composited to whole images. And next image of heart beat is not collected. In the case with frequent extrasystole, the collected image lose its accuracy. But in this program, image of extrasystole was rejected and we could obtain a good image.

2. A image of diastole which collected backward from R-wave : In standard (this is accomplished by dividing the video memory into three buffers) which allows the acquisition of up to 80% of the specified R-R interval. This program allow the acquisition of 100% of the specified R-R interval. If one heart beat which hold buffer #1 and buffer #2 alternately classified as a "good" beat, the system stores two-third of the data forward from first R-wave in the third buffer and one-third of the data backward from next R-wave in the fourth buffer.

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EKG-GATED CARDIAC POOL SCINTIGRAPHY METHOD FOR PATIENTS WITH ATRIAL FIBRILLATION-APPLIED BY RIGHT VENTRICULAR-PACING AND BAD BEAT REJECTION PROGRAM.

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EKG gated cardiac blood pool scintigraphy is useful as a non-invasive diagnostic method for many cardiac diseases. But some of cardiac diseases associate with atrial fibrillation. It is difficult to obtain good cardiac imaging in these cases. Therefore, we used the transvenous right ventricular pacing in order to give regular beats to the atrial fibrillated heart. The overdrive heart beat almost regular, but self beats appeared sometimes. The appearance of this self beats brings a distortion in images. Because, at self beats, the conduction and excitation processes are different from those at artificially paced beats and R-R intervals are not equal to that. We used bad beat program in order to eliminate self-beats. By using this program, only the beats with fixed interval were able to be accumulated and other beats were rejected-that is, self beats are rejected. Using this method, we could easily gain better cardiac pool images in patients with atrial fibrillation.