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THE USEFULNESS OF ELLIPTICAL ROTATED SPECT ON THALLIUM MYOCARDIAL IMAGING. M. Onoguchi, H. Matsuda, H. Murata, S. Nishimura, K. Kato and H. Toyama. Tranomon Hospital and Tsukuba University.

Recently, elliptical rotated SPECT was introduced and has been reported to be useful to obtain tomograms with good resolution in phantom study. In the present study, we evaluated the usefulness of elliptical rotated SPECT on thallium myocardial imaging. Thallium SPECT with elliptical and circular rotation were performed on myocardial phantom and patients with infarction. In the phantom study, SPECT image with elliptical orbit was superior to that with circular orbit on detection both anterior and inferior defects. On the other hand, SPECT image with elliptical orbit more clearly detected lesions of patients with anterior infarction than circular rotated images. However, there was no significant difference between elliptical and circular rotated images on detection of inferior infarctions. The discrepancy between results of the present phantom and clinical studies suggested necessity of more precise correction method for non-uniform attenuators.

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A METHOD FOR EVALUATION OF THE APEX CORDIS BY CONCENTRIC DISPLAY IN Tl-201 MYOCARDIAL SPECT. Y. Kawamura, M. Furuse*, T. Iino**, T. Katsuki**, N. Toyosaki**. Central Clinical Division of Radiology, Jichi Medical School. *Department of Radiology, Jichi Medical School., **Department of Cardiology, Jichi Medical School.

A method for displaying data from each slice of a minor axis image of myocardial SPECT by circumferential profile analysis on a concentric circle has recently been reported. This method consolidates any number of SPECT images into one map. There is no significant difference in the rate of diagnosis between the SPECT images and the map. This method has the advantage of easy determination of the extent of an ischemic part through the map. At our department, the method for displaying myocardial SPECT images on a concentric circle has been used in clinical cases for one year. However, the method has the disadvantage of making evaluation of the apex cordis impossible. To solve this problem, the slice that allowed the maximum left ventricular lumen to be obtained was selected from bidirectional major axis images, analyzed in the same way, and displayed simultaneously. The procedure made it possible to evaluate the apex cordis by concentric display. The present study describes the procedure and phantom experiment, together with evaluation of the apex cordis in clinical cases both with and without display of the apex cordis.

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THE CHARACTERISTIC CONFIGURATIONS OF THE DEFECTS IN THE POLAR REPRESENTATIONS OF EXERCISE THALLIUM-201 MYOCARDIAL SCINTIGRAPHY CORRESPONDING TO THE DISEASED CORONARY SEGMENTS - ANALYSIS IN SINGLE VESSEL DISEASE. T. Iino, N. Toyosaki, T. Katsuki, T. Yaginuma, S. Hosoda, and M. Furuse. Dpt. of Cardiology and Dpt. of Radiology, Jichi Medical School, Tochigi.

To evaluate the relationship between the diseased coronary segments and the regions of the reduced myocardial perfusion, exercise Tl-201 myocardial scintigraphy was performed in 41 pts with single vessel disease (25 with angina pectoris and 16 with myocardial infarction) and in 20 pts with normal CAG and LVG (N). The data acquired immediately after exercise was represented by polar map image. Reduced perfusion area was defined by the comparison with the N. Nine out of 9 pts with LAD proximal lesions (Seg. 6) showed the defects in the basal portions of antero-septal regions. In contrast, this portion was spared in the 8 out of 8 pts with the distal LAD lesions. Fifteen out of 15 pts with RCA lesions (Seg. 1, 2, or 3) showed the defects in the posterior septum (PS) in addition to those in the infero-posterior regions. In 6 pts with LCX lesions, the PS were spared except 1 case with the lesion of Seg. 15. Lesions of diagonal, OM and PL branches were also identified. The analysis of the configurations of the defects in polar map imaging permits the estimation of diseased coronary segments.

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THE CHARACTERISTIC CONFIGURATIONS OF THE DEFECTS IN THE POLAR REPRESENTATIONS OF EXERCISE THALLIUM-201 MYOCARDIAL SCINTIGRAPHY CORRESPONDING TO THE DISEASED CORONARY SEGMENTS - ANALYSIS IN MULTI-VESSEL DISEASE. T. Katsuki, T. Iino, N. Toyosaki, T. Yaginuma, S. Hosoda, and M. Furuse. Dpt. of Cardiology and Dpt. of Radiology, Jichi Medical School, Tochigi.

To evaluate the validity of the characteristic configurations of the defects shown in the analysis of single vessel disease in detection of the corresponding diseased coronary segments (DCS), the polar map imaging of 18 pts with multiple DCS (stenosis >90%) without myocardial infarction was analyzed. Eight pts showed more than 2 corresponding myocardial lesions including the one case with the 3 myocardial lesions. In 13 pts with 2 DCS, 4 showed the both corresponding myocardial lesions, but 9 showed only one lesion. In 3 pts with 3 DCS, one case showed all of three corresponding lesions, and 2 of the 3 lesions were detected in 2 cases. In 2 pts with 4 DCS, one showed 2 lesions, and only one corresponding lesion was detected in the other case. The DCS which were not shown in the polar map imaging had been less stenosed than those detected. The DCS which perfused the overlapping regions were not identified. Analysis of the characteristic configurations of the defects in polar map imaging was also valuable in detection of the diseased coronary segments in multi-vessel disease.