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ASSESSMENT OF REGIONAL CARDIAC FUNCTION BY MAGNETIC RESONANCE IMAGING. T.Takeda, \*M.Matsuda, \*\*S.Koseki, \*\*K.Iida. I.Anno, H.Toyama, N.Ishikawa, Y.Sugishita, M.Akisada. Institute of Clinical Medicine and \*Sport-Science, University of Tsukuba. \*\*Tsukuba Memorial Hospital

Using ECG-gated magnetic resonance imaging(MRI), regional cardiac function was evaluated. MRI was performed for 9 healthy volunteers and for patients with myocardial infarction. MRI was obtained with a spin-echo technique using a 0.15 tesla magnet and an echo delay of 40 msec. End diastolic and end systolic images were acquired. Short axis images, which is similar to two-dimensional echocardiography(Echo), were obtained by using electronic oblique technique at chordae tendineae. Then comparison study, which was performed between MRI and Echo at septum and posterior wall, showed a gentle correlation. Using post-processing computer, short axis image was divided into 12 wall segments and analyzed % wall thickening(% WT) and % shortening. Septal regions exhibited lowest % WT and % shortening in normal subjects. And ischemic regions were clearly identified by % WT.

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MAGNETIC RESONANCE IMAGING OF PANCREATIC DISEASE. T.Kanda, M.Oshibuchi, N.Akeda, M.Fujimatsu, Y.Anno and H.Ohtake\*. Department of Radiology, Hakuji Memorial Hospital, Tokyo. Department of Radiology, Kurume University School of Medicine, Kurume\*.

Magnetic resonance imaging of 45 patients with pancreatic diseases was compared with CT and its clinical usefulness was evaluated. T1 relaxation times of each pancreatic disease was calculated and evaluated. All patients were examined using a 0.15 Tesla resistive magnet. SR images were obtained at repetition times of 500 msec and echo times of 36 msec. IR images were obtained with 1400 msec repetition times and 400 msec inversion delay. Several patients had additional pulse sequences as SE images at TR of 1200 msec and TE of 60 msec. Transverse sections were obtained in all subjects. Section thickness was 15 mm. 36 patients with chronic pancreatitis, 6 patients with pancreatic carcinoma and 3 patients with pancreatic cyst were examined. 10 volunteers with normal pancreas were selected. Results were as follows.

- 1) On MRI splenic vein and superior mesenteric vein were recognized clearly so that pancreas was able to be detected easily compared with CT.
- 2) There was a prolongation of T1 for chronic pancreatitis compared with normal pancreas.
- 3) In the case of pancreatic carcinoma, tumor itself was detected easier on MRI than CT.

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THE EXPERIMENTAL MRI RENAL FUNCTION IMAGE OF THE Gd-DTPA CLEARANCE (GFR). H.Ikehira, T.Yamane, \*Y.Takano, N.Fukuda, S.Furukawa, H.Shinotoh, M.Endo, T.Matsumoto, T.Iinuma and Y.Tateno. N.I.R.S., Division of Clinical Research, Chiba. \*Asahimedical Co., Tokyo.

We already reported about the possibility of renal kinetic analysis using Gd-DTPA, they were MRI renography or MRI regional renography and the separation GFR calculation method etc.

This time we tried to produce the renal functional image by the GFR parameter, because the MRI method is very useful for the detection of the local abnormality on the tomographic image, which is depend upon its fine spetial and contrast resolution.

The method is that we made the ROI include whole kidney on the R1 (1/T1, Tr=1000 msec, Td=300msec) images that were got pre and post each 5 minutes continuously during about 30 minutes after the injection of Gd-DTPA (0.05mmol/kg). The GFR or Gd-DTPA clearance value of each pixel was calculated automatically using the method of least squares.

It was possible to get the practical Gd-DTPA clearance (GFR) functional image from the MRI renography, and also suggested that the effectiveness of the local abnormality detection.