MRI IN BONE DISEASE AND SOFT TISSUE DISEASE.


MRI was performed on the patients with bone disease and soft tissue disease, and we evaluated extensive or differential diagnosis and compared conventional method.

MR is 0.35 Tesla superconductive magnet coil (MAGNETOM) and its imaging method is 2D Fourier transformation method. Our imaging technique is Spin Echo (SE), and we used the surface coil in some cases.

Subjects are 17 patients, osteosarcoma 4 cases, acute necrosis of femur head 2 cases, cerebral hemangioma 4 cases, thyroid tumor 4 cases...

MRI of bone tumor is useful in evaluating the extent of the soft tissue mass, and the high contrast between marrow fat and tumor is helpful in evaluating the spread of disease in the bone marrow. MRI is useful in earlier diagnosis of ischemic dead bone. Surface coil imaging has high resolution contrast.

MAGNETIC RESONANCE IMAGING OF LUNG TUMORS AND ENLARGED MEDIASTINAL LYMPH NODES.


Seventeen patients with primary and metastatic lung cancer were studied with magnetic resonance imaging (MRI). And we have compared the MR images of their tumors and enlarged mediastinal lymph nodes with those of computed tomography images (CT).

The pulse sequences of MRI were the spin-echo technique with TR values of 400 msec and TE values of 40 m sec, providing good tissue contrasts on the region of lung and mediastinum.

All of the tumors larger than 1 cm in diameter on CT were shown on MRI. The dimension of the tumors delineated by MRI were corresponding to those of CT on displaying conditions of window 2000, level -500. However MRI produced slightly larger dimensions than CT on displaying conditions of window 500, level 0 in most of the cases. All of the enlarged lymph nodes visualized by CT (7 cases, 16 nodes, 10-50mm in diameter) were also shown on MRI.

A NMR-machine with a super conductive magnet of 0.25 Tesla was installed at the chiba university in April 1984. Thirty five patients with a variety of urological and gynecological diseases in the pelvis have been taken by the NMR-machine since then, subjected to the clinical evaluation of NMR images. For imaging method and pulse sequences used on the patients, spin echo (SE) with multi slice technique was performed at first, long SE imaging as T2 enhanced images and short SE imaging as T1 enhanced images, moreover inversion recovery (IR) imaging as T1 enhanced images were properly added on selected slices. Direct sagital and coronal images could often take more useful informations concerning three dimension anatomical localization of the lesion. The locations and extends of the cancers of cervix, endometrium, bladder and ovary were well demonstrated on almost cases with high intensity signals by means of T2 enhanced images. The lesions of prostate cancer, invasive mole, myoma and ovarian cyst were visualized as abnormal mass with a variety of signal intensities, well define from normal structure of pelvis in most cases.