The usefulness of nuclear magnetic resonance (NMR) images in the evaluation of vertebral disorders was studied. Five normal subjects and 12 patients with various vertebral abnormalities including 8 cases of vertebral metastases and 4 cases of deformation of vertebra were examined.

On the inversion recovery images and short spine echo images (40 msec TE, 200 or 300 msec TR), all of the metastatic lesions appeared as an area of decreased signal intensity, while some of the deformed lesions appeared as high iso-intensity.

This finding was useful in differential diagnosis between metastasis and deformations.

The T1 value in 5 normal subjects was 356.7 ± 25.4 msec, the T2 value was 81.0 ± 11.6 msec. Although the T1 value in the lesion of metastatic patients was longer than that of the region of non-affected vertebra in patients, T1 value in deformed patients and T2 value in metastatic and deformed patients are valuable. Only T1 value was possibly useful in differential diagnosis between metastasis and deformation.