

## Scintiscanning with Strontium on Aseptic Necrosis of Femoral Head

K. SUZUKI and S. FUKAYA

*Department of Orthopedic Surgery, Minami Kyosai Hospital*

M. UCHIDA

*Department of Orthopedic Surgery, Yokohama University School of Medicine*

Y. ONO

*Department of Radiology, Yokohama University, School of Medicine*

Twenty eight patients with 33 hips of aseptic necrosis of femoral head were studied by means of scintiscanning with aid of  $^{85}\text{Sr}$  or  $^{87\text{m}}\text{Sr}$ .

Clinical materials consisted of 11 idiopathic necrosis of femoral head with 16 hips, 15 hips of unilateral posttraumatic necrosis, and two unilateral cases caused by gout and roentgen irradiation.

$^{85}\text{Sr}$  was given intra-venously 50 to 100 microcuries and scintiscanning was done 7 to 14 days following injection.  $^{87}\text{Sr m}$  was given 0.8 to 2.0 milli-curies and scan was performed 2 to 3 hours after intravenous injection.

### Results:

Sixteen hips of idiopathic necrosis were divided into 3 grades after d'Aubigne's description, and scintigrams to each grades were taken into account.

For moderately advanced lesions on radiogram, strontium was taken limited to femoral heads on scintigram, and for radiographically severely advanced cases scintigram showed accumulation of strontium not only to femoral heads but to acetabulum.

However, in early cases for which radiogram showed little information except cortical double shadow or cyst like figure at lateral superior part of the femoral heads, scintigram already revealed uptake of strontium in femoral heads.

The early diagnosis of necrosis is aided by tomogram, intravenous venogram or arteriogram besides roentgenogram, scintigram with strontium is quite useful as a new method for this purpose.

In post-traumatic cases, there were two types of lesions showing collapse and/or deformity, and sclerosis without deformity on radiogram. The pattern of strontium uptake to former type was similar to idiopathic one of moderate and severely advanced case. Strontium uptake to latter type was limited to femoral head from fracture line of femoral neck.

Radionuclei uptake to necrosis of femoral head in our series is thought to be related to osteoblastic activity in adjacent area of necrosis and also to creeping bone repairing process in the area of necrosis itself.

## Scintigraphy of Malignant Bone Tumor

M. HARA, T. KITABATAKE and R. KAYAMORI

*Department of Radiology, Niigata University, Niigata*

The purpose of this study was to assess the reliability of bone scintigraphy with  $^{85}\text{Sr}$  or  $^{87\text{m}}\text{Sr}$  by comparing it with the roentgenologic

survey and clinical symptoms.

The materials consisted of 46 patients with tumors on whom bone scintigraphy and ro-