— Interesting Image —

Cerebral Infarction Mimicking Skeletal Metastases on Tc-99m MDP Bone Scintigraphy

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A 60-year-old male with carcinoma of the prostate and cerebral infarction underwent a Tc-99m MDP bone scintigraphy for the evaluation of skeletal metastases. Bone scintigraphy (Fig. 1) showed multiple areas of increased uptake of Tc-99m MDP in the skull, spine, and ribs representing skeletal metastases. Two different patterns of uptake occurred in the skull region (Fig. 1A-C); one represents bony metastasis and the other represents cerebral infarction. The shape, size, location, intensity, and border of the increased uptake differed between the two lesions. An oval-shaped pattern with smaller size, greater intensity and more sharply defined border in the frontal region was consistent with bony metastasis. A rectangular-shaped pattern with larger size, lesser intensity and relatively indistinct border in the temporo-parieto-occipital region was consistent with cerebral infarction.

Increased uptake of bone-seeking radiotracers in cerebral infarction has been reported previously.[1-4] A suggested mechanism by which bone-seeking radiotracers accumulate in the necrotizing cerebral tissue is an alteration of the blood-brain barrier induced during cerebral infarction, which results in entry of the radiotracers into the extracellular space of the brain.[4]

Brain CT (Fig. 2) performed 7 days before and one month after the bone scintigraphy revealed lesions on the right temporo-parieto-occipital region consistent with acute hemorrhagic and chronic cerebral infarction, respectively.

Received Sep. 4, 2000; revision accepted Sep. 4, 2000
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Key Words: Cerebral Infarction, Skeletal Metastases, Tc-99m MDP, Bone Scintigraphy.

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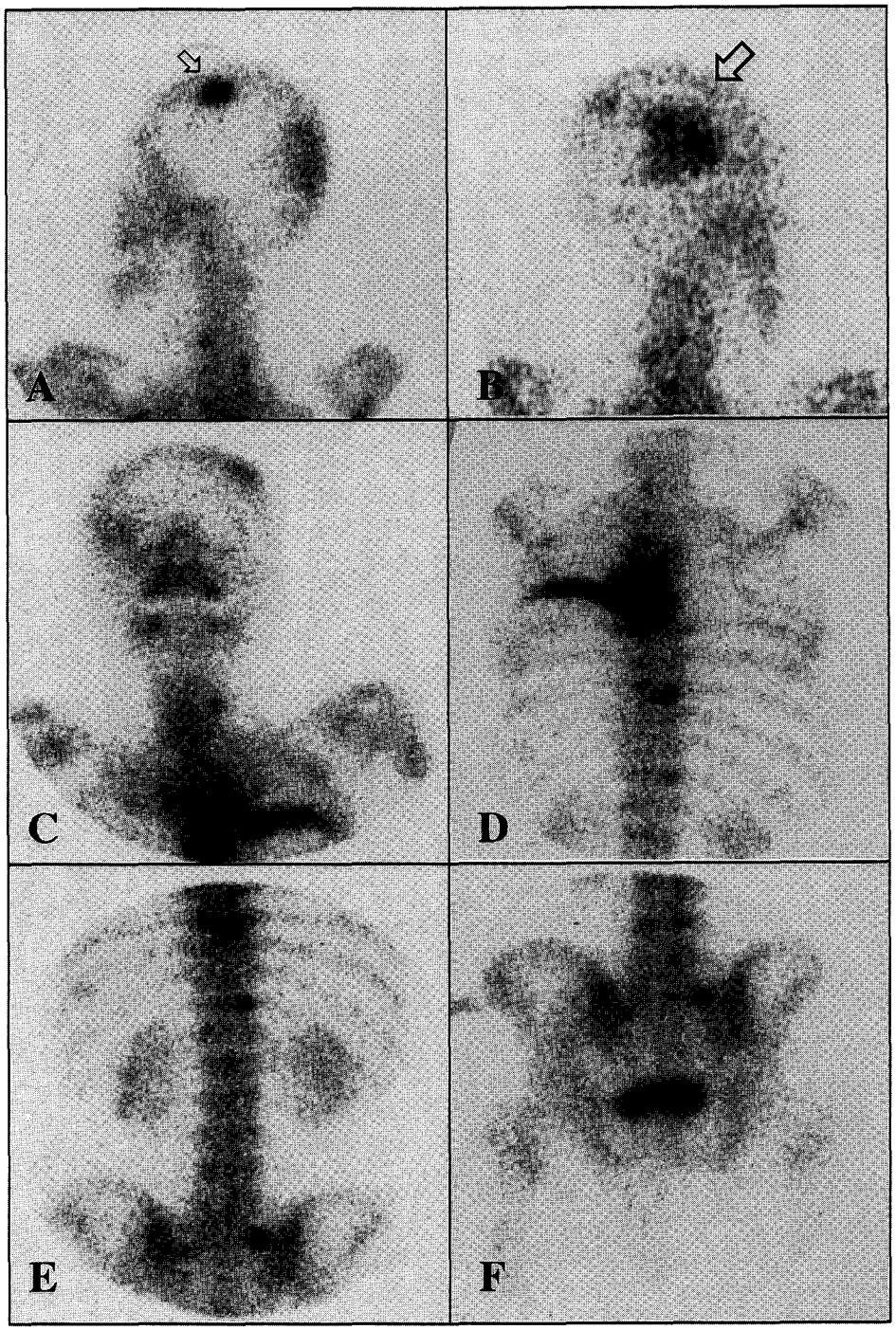

Fig. 1. Tc-99m MDP bone scintigraphy (A-F) shows multiple hot spots in the skull, spine, and ribs representing skeletal metastases. Two different patterns of the abnormal uptake of Tc-99m MDP are demonstrated in the skull region (A-C). One lesion on the left (small arrow) represents a bony metastasis and the other on the right (large arrow) represents cerebral infarction.

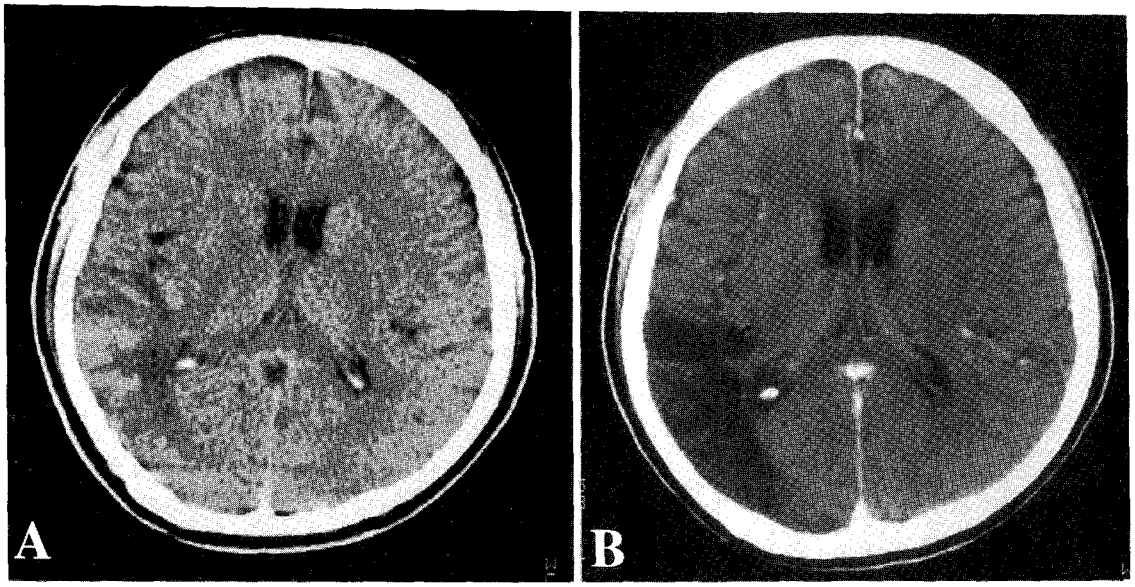

Fig. 2. Axial non-contrast CT scans performed 7 days before (A) and one month after (B) the bone scintigraphy demonstrate acute hemorrhagic and chronic cerebral infarction on the right temporo-parieto-occipital region.