Case Report

Scintigraphic Detection of Metastatic Bone Lesions from Breast Carcinoma: Report of a Case


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A 46-year-old woman with extensive skeletal metastases from primary breast carcinoma was examined scintigraphically using \(^{99m}\text{Tc} \text{HMDP}. \) The skeletal metastatic lesions, except for the mandible and hip joint, were clinically asymptomatic and hardly detected radiographically. Marked accumulation of \(^{99m}\text{Tc} \text{HMDP} \) was shown in both the asymptomatic and symptomatic lesions, and scintigraphy is also a useful imaging modality for the identification of whole body metastatic bone lesions, especially in the early stage.

Introduction

Although skeletal metastasis is common from advanced malignant tumors such as breast, prostate, lung, kidney, and thyroid tumors, metastasis to the jaw bones is relatively rare. Among the different types of primary tumors, breast carcinoma in particular shows a high incidence of metastatic bone lesions, including metastasis to the jaw bones. Compared with the maxilla, metastasis to the mandible is predominant, especially in the retromolar region. For the detection of the jaw bone metastases, both radiography and scintigraphy with \(^{99m}\text{Tc} \text{phosphate complexes are performed routinely. In this report, a female patient with a past history of surgery for breast carcinoma was examined scintigraphically and the scintigraphic contribution for detecting bone metastases is discussed in compar-
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A 46-year-old woman was referred to the Kagoshima University Dental Hospital after she consulted with her dentist about paresthesia in the right lower lip and limited mouth opening. Her past history included surgery for breast carcinoma 9 years before the initial visit to the Dental Hospital. She also had right hip joint dysfunction clinically diagnosed as sciatica for the past several months. The patient underwent scintigraphic examination with $^{99m}$Tc-hydroxymethylene diphosphonate (HMDP), radiographic examination, and laboratory tests.

The results of scintigraphy with $^{99m}$Tc HMDP are shown in Figs. 1-3. The marked accumulation of $^{99m}$Tc HMDP is observed in a wide variety of bones such as the skull, mandible, ribs, vertebrae, pelvis, and hip joint. The lesions of the mandible and skull reveal a distinct accumulation of $^{99m}$Tc HMDP showing uniform distribution of radioactivity in the lesion (Fig. 1). The pelvis and hip joint also show an extensive accumulation of radioactivity. Other skeletal lesions show similar features (Figs. 2 and 3).

Figures 4-6 show radiographic findings. Figure 4 shows a monolocular and relatively poorly demarcated osteolytic lesion of the right retromolar region of the mandible. The

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**Fig. 1** Scintigrams of the head showing the marked accumulation of $^{99m}$Tc HMDP in the lesions of the skull and the right mandibular retromolar region. The uniform distribution of radioactivity is evident in the lesions.