



Diffuse multiple organs uptake of ^{99m}Tc -MDP on SPECT/CT

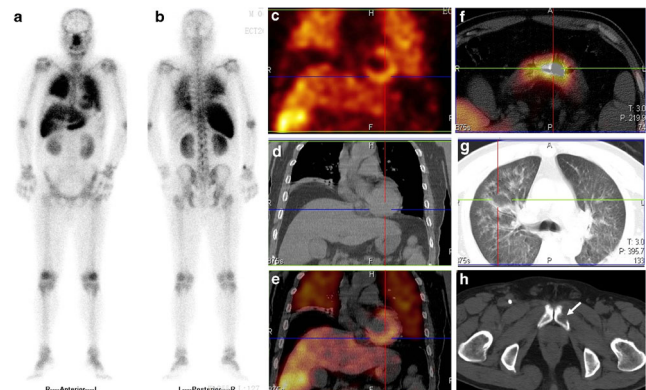
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A 47-year-old man presenting with fever and fatigue was admitted to our hospital. Laboratory tests revealed acute renal failure with markedly elevated serum creatinine level up to 431.9 $\mu\text{mol/L}$ (normal 57–97). The serum levels of phosphorus and calcium were 275 U/L (normal 45–125) and 3.54 mmol/L (normal 2.11–2.52), respectively. Ultrasonography of parathyroid glands revealed no abnormality. Abdominal CT showed multiple focal osteolytic destructions of the pelvic bones, including the left symphysis pubis (H), and with no enlarged lymph nodes. Whole body bone scan was performed with ^{99m}Tc -MDP SPECT/CT for further evaluation. Incidentally, diffuse and intense uptake of ^{99m}Tc -MDP in the heart, lungs, liver, and stomach was observed on bone scan (A: anterior and B: posterior). SPECT (C), CT (D/G), and fusion SPECT/CT (E/F) images clearly showed the uptake in the pulmonary parenchyma, left ventricular myocardium, hepatic parenchyma, and gastric mucosa. Moreover, multiple ground glass high-density lesions along the bronchi were observed in both the lungs (G), which were correlated with pneumonia and clinical symptoms.

The diagnosis of primary bone marrow diffuse large B cell lymphoma (DLBCL) was established by bone marrow biopsy without any nodal or extraskelatal involvement [1]. This is a rare disease, especially with an unusual presentation of multiple organs uptake of ^{99m}Tc -MDP. Visceral organ concentration of ^{99m}Tc -MDP on bone scintigraphy has been reported in previous studies [2–5], but concomitant uptake by the heart, lungs, liver, and stomach is fairly rare. We are the first to report this presentation on a patient with primary bone marrow DLBCL. Diffuse and intense ^{99m}Tc -MDP uptake in multiple

organs is probably due to hypercalcemia and might represent rapid disease progression and poor prognosis. This patient died two weeks after the bone scan owing to multiple organ failure.



Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethics approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from the patient's wife for publication of this case.

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