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Bone scan in follow up of osseous metastasis of endometrial carcinoma

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Case Description

A 50-year-old female diagnosed with endometrial cancer presented at the nuclear medicine department. She had previous history of hysterectomy with bilateral salpingo-oophrectomy followed by radiotherapy to the pelvic region in 2020. Due to persistent lower backache, magnetic resonant imaging (MRI) of the lumbar spine was

done, which showed hypo intense signals in T1 and T2 weighted images involving L2 vertebral body and posterior elements, suggestive of metastatic deposit. Her ^{99m}Tc Methylene diphosphonate (MDP) bone scan showed a solitary photon-deficient area involving the L2 vertebral body consistent with MRI findings (Figure 1).

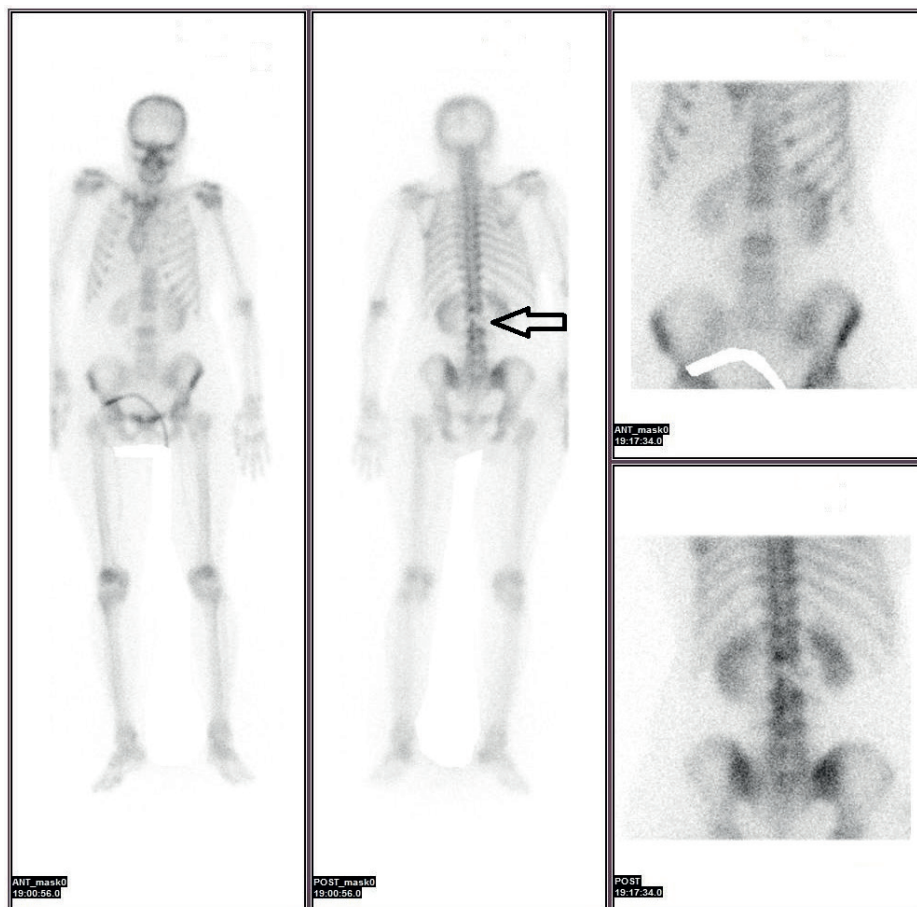


Figure 1. First bone scan.

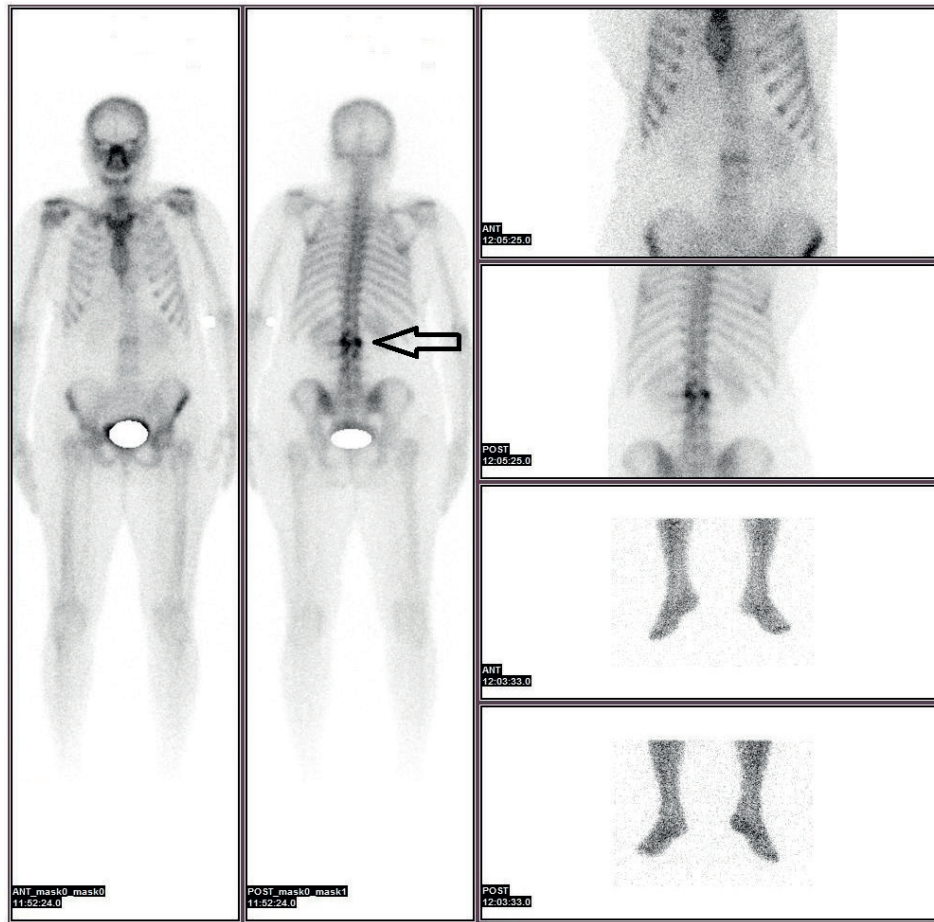


Figure 2. Follow up bone scan.

She underwent external beam radiotherapy of the lumbar region and again referred for bone scan after 1 year. The follow up bone scan showed increased osteoblastic activity at L2 vertebra (Figure 2). This finding indicates a successful response to radiotherapy as it shows an osteoblastic response in a previously non-avid lesion.

Osseous metastases in endometrial carcinoma are rare with prevalence of 2%-6% [1]. Endometrial metastases to the bone usually occur in pelvis and thoraco-lumbar vertebra. For a distant recurrence, surgery and/or focused radiation therapy may be used when the cancer is only in a few small spots (like in the lungs or bones) [2]. In patients with solitary bone metastasis, local radiotherapy is curative [3]. After radiotherapy initially there is increase in blood flow and uptake on bone scan due to local hyperemic or inflammatory response. The vascularity returns to normal in about 6 months and after that it is reduced owing to endothelial proliferation and arteriolar narrowing. Increased uptake in previously non-avid lesion indicates osteoblastic response because of reparative mineralization around healing metastases. It does not indicate disease progression but the healing of previously inconspicuous lesions. So, follow up bone scan is reliable and cost-effective method to assess the treatment response.

List of Abbreviations

MRI Magnetic resonance imaging
MDP Methylene diphosphonate

Conflict of interests

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None.

Consent to participate

Informed consent has been taken from patient and participant to publish this case.

Ethical approval

Not applicable.

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