



**Nuclear Medicine**

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Services

## Bladder Cancer



Fig. 1

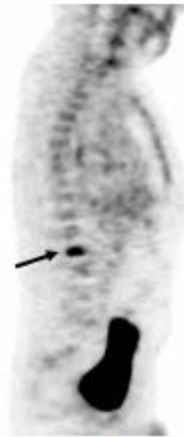


Fig. 2

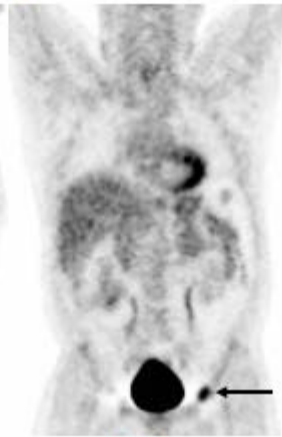


Fig. 3

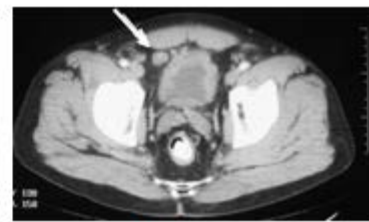
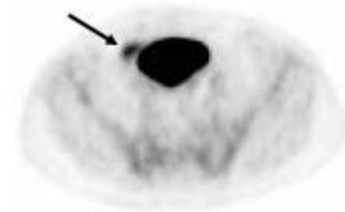


Fig. 4

This 57-year-old white male with recently diagnosed high grade poorly differentiated **bladder cancer** was complaining of low back pain. A CT scan of the abdomen and pelvis was obtained for staging and showed a lytic lesion at L1 but no evidence of lymphadenopathy. A bone scan was obtained which was indeterminate for metastasis at L1. A lumbar spine MRI (Fig. 1) was read as “suggestive but not confirmatory of metastatic lesion as similar findings can sometimes be seen in early degenerative change”. At that point, it was still unclear whether the patient had distant metastasis or not.

A PET scan was obtained which showed:

- Findings at L1 (Fig. 2) and in the left acetabulum (Fig. 3) consistent with bone metastases
- External iliac lymph node metastasis (Fig.4, black arrow) retrospectively seen on pelvis CT (Fig.4, white arrow).

The patient was thought not to be a candidate for surgery or any definitive local therapies. He underwent palliative chemotherapy and radiotherapy to the lumbar spine and left acetabulum.

### How did the PET-CT help?

The PET scan helped to confirm the presence of bone metastasis and also identified metastasis in a pelvic lymph node. It also changed the management from surgery with curative intent to palliative chemotherapy and radiotherapy.

In a study involving 12 patients with histologically proven bladder cancer, the P.E.T. scan was able to detect all 17 distant metastatic lesions (100% sensitivity) and two out of three proven regional lymph node metastasis(1). The P.E.T scan had a limited sensitivity (66.7%) for diagnosis of the primary bladder cancer because of excretion of FDG in the urine.