

Metastatic Prostate Carcinoma Presenting as a Superscan on ^{68}Ga -PSMA PET/CT

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Abstract: We describe the finding of a metastatic superscan detected by ^{68}Ga -PSMA PET/CT imaging. A 63-year-old man with metastatic prostate carcinoma underwent ^{68}Ga -PSMA PET/CT imaging for staging and evaluation of the most appropriate therapeutic option. Images demonstrated diffuse and extensive skeletal uptake in the axial and appendicular skeleton, corresponding to the typical red marrow distribution. Intense soft tissue uptake was also seen in the prostate and multiple pelvic and abdominal lymph nodes.

Key Words: prostate carcinoma, ^{68}Ga -PSMA PET/CT, superscan

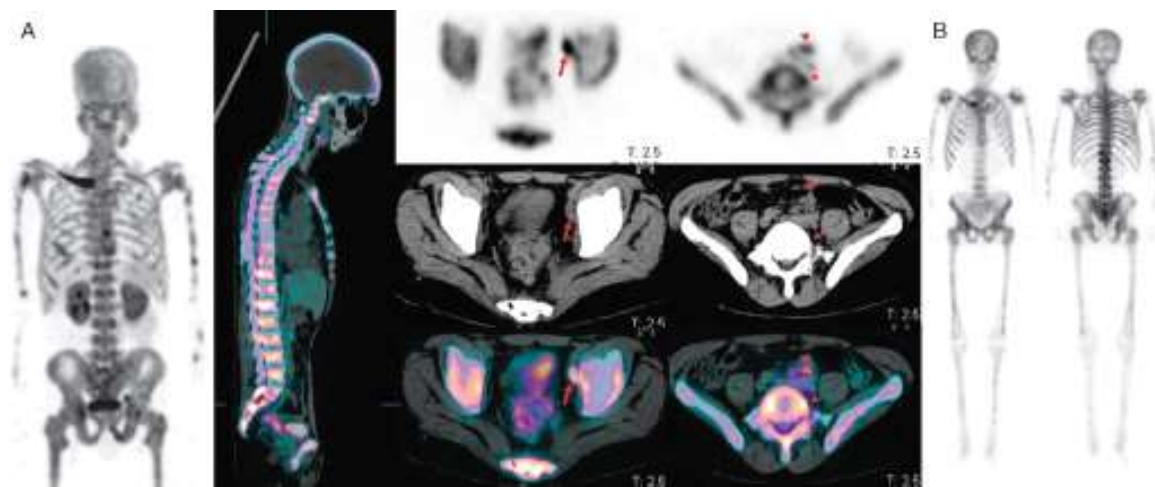


FIGURE 1. A 63-year-old male patient presented with metastatic prostate cancer. Histology demonstrated infiltrating adenocarcinoma and a Gleason score of 8 (4 + 4) with perineural infiltration. The PSA was 100 ng/mL, which is predictive of the presence of multiple bone metastases.¹ The patient was referred for ^{68}Ga -PSMA PET/CT imaging (**A**), which revealed diffuse generalized skeletal tracer uptake as well as multiple tracer-avid abdominal (arrowhead) and pelvic (arrow) lymphadenopathy. The prostate also showed increased tracer accumulation. Prostate cancer commonly metastasizes to bone^{2,3} and a superscan on $^{99\text{m}}\text{Tc}$ -MDP scintigraphy is seen in advanced disease. Superscans have also been described with ^{18}F -FDG PET/CT in metastatic cancer.^{4,5} It accumulates in the primary tumor and metastatic soft tissue and skeletal disease.⁶ Normal, unaffected bone demonstrates only mild or absent tracer accumulation.^{7,8} $^{99\text{m}}\text{Tc}$ -MDP whole-body bone scan (**B**) performed within 24 hours of ^{68}Ga -PSMA PET/CT also demonstrated diffusely increased skeletal accumulation, which was less intense than that seen on the PET/CT images.

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