

Superscan Imaging on Ga-68 PSMA PET/CT in Prostate Cancer Patient

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Abstract

Prostate cancer (PCa) is the most frequent tumor in men worldwide. PCa bone metastasis is mainly osteosclerotic, and is caused by a relative excess of osteoblast activity. A superscan on Tc-99m bone scintigraphy is described in multiple skeletal metastatic disease. Prostate-specific membrane antigen (PSMA) is a cell surface protein with high expression in prostate carcinoma cells. Ga-68 labelled PSMA imaging is used for staging and to evaluate the most appropriate therapy.

Keywords: Prostate cancer; Ga-68 PSMA; Superscan

Case Report

Prostate cancer (PCa) is the most frequent tumor in men worldwide and prostate cancer most often spreads to bone, commonly leading to bone pain [1]. PCa bone metastasis is mainly osteosclerotic, and is caused by a relative excess of osteoblast activity. A superscan on Tc-99m bone scintigraphy is described in multiple skeletal metastatic disease [2].



Figure 1: Superscan showing extensive and intense skeletal uptake in the axial and appendicular skeleton.

Prostate-specific membrane antigen (PSMA) is a cell surface protein with high expression in prostate carcinoma cells. Ga-68 labelled PSMA

imaging is used for staging and to evaluate the most appropriate therapy [3]. We want to share Ga-68 PSMA PET/CT imaging of a 67-year-old prostate cancer patient. He had a radical prostatectomy after diagnosed PCa with biopsy. His pathology reported as adenocarcinoma with gleason score 4+3=7. Ga-68 PSMA imaging demonstrated extensive and intense skeletal uptake in the axial and appendicular skeleton which is called superscan imaging (Figure 1).

Superscan was also described in F-18 FDG PET/CT imaging in extensive metastatic cancer [4]. Vertex to middle femur imaging was performed 60 min after injection of 4 mci Ga-68 PSMA when current total PSA value was 120.06 ng/ml. There is no regional recurrence or lymph node metastasis but multiple sclerotic and lytic lesions with extensive and diffuse uptake at skeleton system (Figure 2).

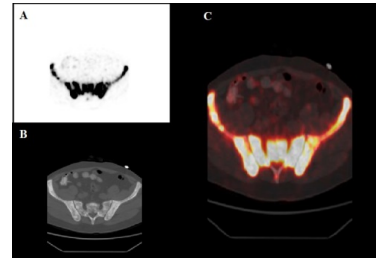


Figure 2: Axial pelvis PET, CT and Fusion images.

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