

Letter to the Editor

Bone Metastases from Prostate Cancer. What is the Role of Bone Scintigraphy in the Era of Choline PET/CT?

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We presented a patient with prostate cancer treated with prostatectomy and lymphadenectomy who present rising PSA (3,7 ng/ml) with negative pelvic-MRI and abdominal-CT.

Whole body 11C-Choline PET/CT showed solitary tracer uptake in left supra-acetabular region. Axial fused PET/CT and a CT image allows locating this uptake in medullary region without morphological abnormality.

Planar bone whole body scintigraphy showed spondyloarthropathy dorsal signs without focal tracer uptakes suggesting bone metastases. Moreover distribution of the tracer in pelvis was symmetrical.

However, due to 11C-Choline uptake in left supra-acetabular region pelvic SPECT/CT was performed. Coronal and axial SPECT/CT detected focal osteogenic uptake in medullary region. Guided biopsy confirmed bone metastases.

Bone Scintigraphy has traditionally been considered the most sensitive method for detection of bone metastases, especially blast injuries, the most common in prostate cancer.

Single Emission Computed Tomography (SPECT) has been shown to increase the sensitivity of the technique, but its implementation represent a higher acquisition time, especially if whole body SPECT is required, so that in clinical practice SPECT is performed only if indeterminate lesions are detected on planar study, but not if the study is negative [1].

Nowadays, bibliography have demonstrated the utility of Choline PET/CT (11C or 18F-labeled) as “one-stop diagnostic procedure” in the detection of biochemical recurrence after radical treatment of prostate cancer [2,3]. The results are promising in local recurrence, better after surgery than radiotherapy, and in lymph node involvement, with size > 5 mm (although limited detection of microscopic disease). Results are more controversial in bone metastases detection, especially in identifying blastic metastases and in patients with hormone therapy regimens.

There are few studies comparing Bone Scintigraphy and Choline PET/CT, most of them with intrinsic bias, by comparing a tomographic with a planar technique, although some of them described realization of SPECTs studies, but without explore their utility [4].

Our proposal would be to change the order of the scans. Bone Scintigraphy may be useful in confirming pathological bone deposits in studies with Choline, without morphological abnormalities in CT component. This could make a SPECT study focused on pathologic Choline area. Thus, in our case despite negativity of planar Bone Scintigraphy, pelvic SPECT indicated by the presence of Choline uptake in left supra-acetabular region, allows confirmation of solitary bone metastases.

Other authors point the possibility of diffusion MRI sequences or 18F-Fluoride PET/CT usefulness in these cases. Due to different availability and cost prospective studies are required.

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