11C-choline PET/CT and multiparametric MRI in patients with biochemical relapse of prostate cancer.

[Article in English, Spanish]

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Abstract

CLINIC PROBLEM AND CASE SERIES: To assess the diagnostic usefulness of 11C-choline PET/CT vs. multi-parametric MRI in the prostate cancer relapse. A retrospective study of 21 patients with prostate cancer treated initially with surgery (n=12), radiotherapy (n=9). PSA levels were increased (post-surgery: .3-3.6ng/ml; post-radiotherapy: 2.4-8.8ng/ml). In an interval of time of 15 days all patients were underwent to: whole-body-dual-modality PET-CT carried out early after 11C-choline (296±29MBq) injection, and multiparametric prostate MRI with paramagnetic intravenous contrast (using anatomical imaging sequences, diffusion-weighted imaging and dynamic contrast-enhanced imaging). On the basis of our results, all patients were underwent to directed diagnosis and/or clinical, analytic and imaging follow-up. In 15 patients (71.4%) both procedures showed concordant results: 4 negative and 11 positive cases [7 local recurrences, 3 isolated pelvic lymph nodes (2 infracentimetric), 1 local relapse and only one M1 bone metastases]. The results were discordant in 6 patients (28.6%): 3 local relapses in MRI with no PET significance, 1 local relapse in PET with no MRI significance. 2 bone metastases were identified with PET (out of the field-of-view of MRI) COMENT: 11C-choline PET/CT and multi-parametric MRI play a complementary role in the detection of local relapse in prostate cancer patients, with similar sensitivity for the detection of lymph involvement. Whole-body 11C-choline PET/CT technique is also useful for bone staging.

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