adiopharmaceuticals

30h
Room: Hall F2

OP531 SPECT/CT in Thyroid Cancer: Physiologic 131I Uptake or Something Else?

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Aim: Planarwhole body scan (txWBS) is the standard imaging modality performed in ourdepartment for the post therapeutic work-up of patients withwell-differentiated thyroid cancer. However, sometimes it is difficult todistinguish physiologic from pathologic uptake and to localize lesions becauseof lack of anatomic landmarks. The purpose of this study was to evaluate theadditional information provided by SPECT/CT in the management of thesepatients. Material and Methods: From February 2007 to March 2010, 41 SPECT/CTscans were performed on a dual head gamma camera with an integrated SPECT/ lowenergy CT system for combined transmission and emission tomography in additionto planar txWBS, in 36 patients (22 women, 14 men, age range 15-77 years, mean53.9 years) with malignant thyroid disease (27 papillary cancers, 7 follicularcancers, 1 insular and 1 less differentiated cancer). Whole body anterior andposterior images were acquired 7 days after therapeutic administration of2960-9768MBq of ^{131}I, the dose being adjusted to the diseasesituation. Planar whole body scans were interpreted by two nuclear medicinephysicians who determined the need to perform additional SPECT/CT forclarification of inconclusive findings. Results: Image fusion was helpful inall 41 studies. SPECT/CT demonstrated additional value in 28 cases (68.3%) withcervical ^{131}I uptake. Due to precise anatomical localization,thyroid remnant tissue could be distinguished from lymph node cervicalmetastases, excluding nodal involvement in 13 patients (31.7%). In 8 cases(19.5%) SPECT/CT classified mediastinal activity as lung and/or bone metastasesand led to an M status upstaging. On the other hand, SPECT/CT revealedphysiological uptake in 20 areas suspicious for metastasis on the txWBS.Furthermore, in 3 patients, CT revealed iodine negative metastases predicting adecrease in life expectancy. Conclusions: Post-therapy ^{131}I SPECT/CTprovides relevant information in the management of patients with thyroidcancer, especially in the assessment of ^{131}I uptake in the neck. Itallows the clarification of indeterminate ^{131}I accumulation andpermits a precise anatomical localization of the lesions.