AbstractID: 9071 Title: Interference of Neighboring Activity to Coincidence Imaging with Non-Homogeneous Attenuation Correction on A Dual Head Gamma Camera

Objectives: To investigate interference of neighboring activity to coincidence imaging with non-homogeneous attenuation correction on a modified dual head gamma camera

Methods: A cylindrical phantom with hollow spheres filled with F-18, immersed in a water tank, was employed to test resolution and sensitivity of an ADAC Vertex/MCD/AC camera. Two additional phantoms were positioned next to the primary phantom to check influence of false coincidence to the region of interest. Multiple scans were performed while the source was decaying from 74 MBq to 11 MBq. Each scan included a transmission image of Cs-137 point sources and an emission image of F-18. Images were reconstructed by iterative algorithm with AC on or off.

Results: Quantitative inspection of phantom studies showed regional count recovery. The additional phantoms decreased the counts from these spheres and increased the recovery ratios. Clinically, liver metastases and mediastinal lymph nodes were better identified and tumor to background ratio increased.

Conclusion: Neighboring activity does not cause significant problem to coincidence imaging of F-18 FDG on modified dual head camera.with AC using iterative reconstruction.