

Pitfalls & Artefacts 7

Bone & Joint Committee

Friday, October 30, 13:50-15:20

Session Title

Bone SPECT/CT Revisited – Learning an Old Fox New Tricks

Chairperson

Holger Palmedo (Bonn, Germany)

Programme

- 13:50 - 14:19 Lidija Antunovic (Milan, Italy): The End of Planar - Optimizing SPECT/CT Acquisition, Interpretation, and Reporting
- 14:19 - 14:48 Torsten Kuwert (Erlangen, Germany): Quantification by SPECT/CT
- 14:48 - 15:17 Zohar Keidar (Haifa, Israel): Novel Hardware, Algorithms, and Protocols in Bone Hybrid Imaging

Educational Objectives

1. Understand the paradigm shift introduced by SPECT/CT in the science and practice of bone scintigraphy
2. Learn to implement and build SPECT/CT acquisition protocols that take full advantage of the hybrid imaging with SPECT/CT
3. Understand the benefits, limitations, and common sources of error of recently introduced SPECT/CT technologies in the setting of hybrid bone imaging.

Summary

The increasing use of bone SPECT/CT has fundamentally changed the clinical practice of radionuclide bone imaging, with expanding indications in many pre- and post-operative skeletal conditions. This pitfalls and artefacts session will demonstrate in an interactive way how to adapt conventional practice to the state-of-the-art hybrid SPECT/CT capabilities and to understand potential sources of error that may introduce error or bias. This includes ways to optimize SPECT/CT acquisitions, interpretation and reporting to facilitate the transition away from planar imaging in routine clinical practice, including strategies for bloodpool imaging. Also, the increasing availability of absolute quantification methods for SPECT/CT in current hybrid scanner has generated opportunities to reduce variability in reporting and created new possibilities for longitudinal assessment of bone diseases. Nevertheless, if used in incorrect settings or when not carefully implemented, this technique may generate unreliable results. Finally, exciting new technologies have become available over the last few years and are finding their way into hybrid SPECT/CT systems, including improved detectors, new collimator and gantry designs, and advanced algorithms. The impact of these advances in engineering and physics will be illustrated by demonstrating the potential benefit and possible pitfalls.

Key Words

SPECT/CT, hybrid imaging, blood pool imaging, quantification, technical innovation, standardization