



CUSTOMER SPOTLIGHT

SOMC Improves Clinical Excellence With Low-Dose SPECT/CT Imaging

Making a difference is the mission that Southern Ohio Medical Center (SOMC) strives for by providing the highest quality of care for each patient. In the Nuclear Medicine Department, this includes having some of the most advanced systems available today, such as the Optima™ NM/CT 640.

Scott D. Logan, MD, Medical Director Molecular Imaging, and Trish Kouns, ARRT, RT, CNMT, Supervisor Nuclear Medicine, increasingly rely on hybrid imaging and have implemented SPECT/CT studies across numerous clinical indications. Specifically, SPECT/CT imaging has become the standard of care at SOMC for melanoma, sentinel node of the breast, rib lesions, parathyroids, octreoscans and bone.

“Hybrid imaging is increasingly becoming a vital role player in the diagnosis and therapeutic

reevaluation of disease processes,” says Dr. Logan. “SPECT/CT allows precise alignment and localization of pathologic lesions—benign or malignant.” The increased sensitivity and specificity of hybrid technologies helps Dr. Logan visualize the lesions better than previously possible. He is seeing more lesions with the Optima NM/CT 640 and that helps increase diagnostic confidence and aids in surgical and radiation therapy planning.

SOMC leverages the CT to visualize previously non-visible findings, enabling the clinicians to provide a more complete interpretation. Dr. Logan adds, “Once a physician gets comfortable with looking at SPECT/CT, I think it can speed up your interpretation and makes that interpretation so much more accurate and thorough.”

Case 1

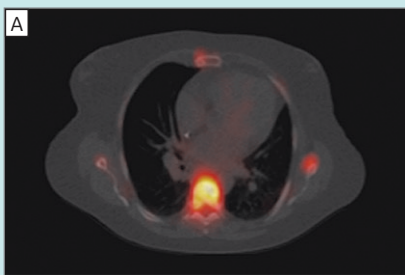
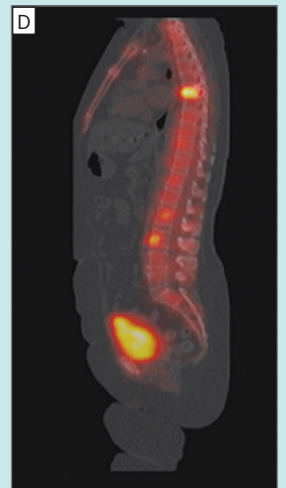
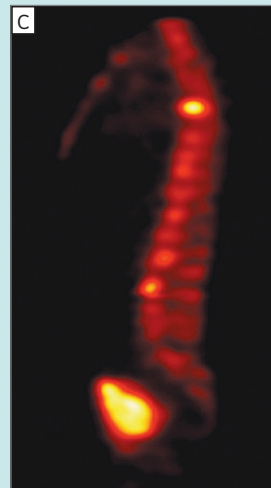
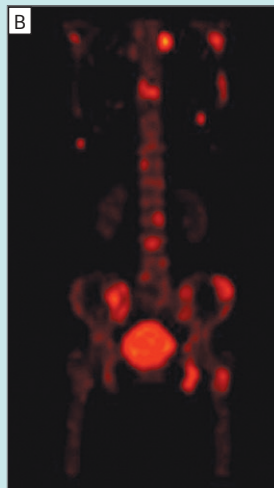


Figure 1. SPECT/CT helped localize multiple areas of abnormal uptake in several areas of the spine, pelvis and thoracic cage.



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“For us, the 10 mA on the Optima NM/CT 640 delivers superior image quality compared to what you might expect to get with 10 mA from a CT scanner designed for higher mA imaging, such as a 16-slice system or higher.”

Dr. Scott D. Logan

As a result, Dr. Logan and Kouns have witnessed a reduction in the need for additional imaging exams to correlate and characterize abnormalities seen on SPECT/CT. “This has the added benefit of reduced cost to the healthcare system, reduced medical visits and cost to the patients, and decreased need for follow-up imaging,” Dr. Logan adds.

According to Kouns, both referring physician and patient satisfaction are high and that has helped increase patient volume and revenue.

The department is also mindful of patient exposure to dose and therefore typically uses 10 mA on the patient CT scans. Neither Dr. Logan nor Kouns believe there is a need to go above 30 mA for the CT portion of the SPECT/CT study.

“In the era of ALARA and paying attention to patient radiation dose, we have really focused on minimizing radiation dose across all aspects in nuclear medicine imaging,” adds Dr. Logan. “For us, the 10 mA on the Optima NM/CT 640 delivers superior image quality compared to what you might expect to get with 10 mA from a CT scanner designed for higher mA imaging, such as a 16-slice system or higher.”

Dr. Logan and Kouns love the Optima NM/CT 640 so much they are hoping that in the near future they can replace

their SPECT-only camera, a Discovery™ NM630, with a second hybrid system.

Case 1 Patient history

A 60-year-old female patient was referred with suspected malignant neoplasm.

Acquisition

Dose: 26.4 mCi Tc99m MDP

CT: 120 kV, 10 mA

CTDI_{vol}: 1.0 mGy

NM: 15 sec/step

Acq. Time: 7.5 min/FOV with EFB

Findings

There are multiple areas of abnormal uptake including locations within the cervical spine, left sternoclavicular region—scapula and dorsal spine, lumbar spine, pelvis, left proximal femur and thoracic cage.

Impression: Extensive osseous metastatic disease.



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Case 2

Patient history

An 80-year-old male patient with a history of gastrointestinal bleeding was referred to SPECT/CT.

Acquisition

Dose: 27.3 mCi Tc99m MDP

CT: 120 kV, 10 mA

CTDI_{vol}: 1.0 mGy

NM: 15 sec/step

Acq. Time: 7.5 min/FOV with EfB

Findings

Numerous foci of increased radiotracer uptake are seen with the osseous structures. Increased uptake within the posterior left 11th rib. Uptake seen within the left aspect of T8 & T9. Moderate compression fracture at L1.

Impression:

1. Multiple foci of hypermetabolism within the distal thoracic spine, lumbar spine, sacrum and the 11th rib.
2. Compression fracture at L1.
3. Numerous non hypermetabolic sclerotic foci visualized in the osseous structures suspicious for metastatic disease. ■

Case 2

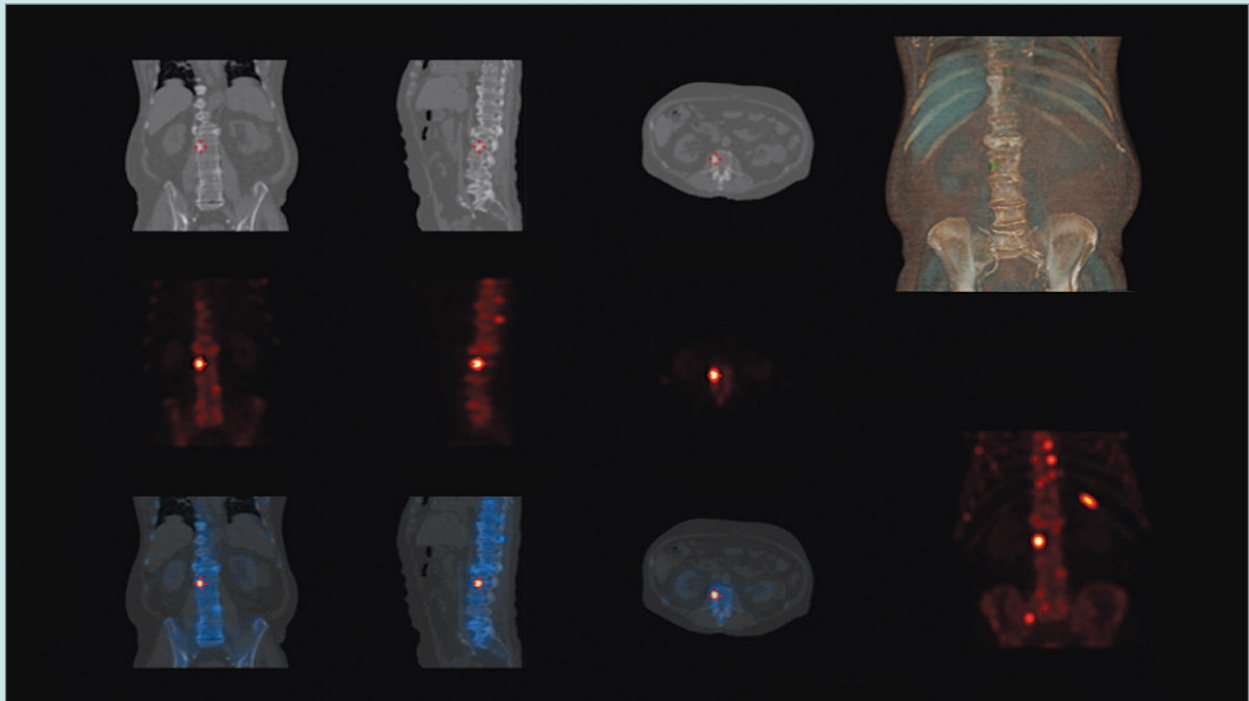


Figure 2. Visualization of numerous foci of increased radiotracer uptake along with multiple non hypermetabolic sclerotic foci in the osseous structures helped provide the impression of metastatic disease.