

Correlative Imaging With SPECT and CT – Europe’s First Symbia System Installed in Erlangen

Professor Torsten Kuwert, M.D., chairman of the department of nuclear medicine at the University of Erlangen-Nuremberg, shares his first experiences with TruePoint SPECT·CT and provides some insight into the future development of hybrid systems.

By Aline Hambüchen

In June 2004, Siemens introduced a new technology named TruePoint™ SPECT·CT, which combines state-of-the-art SPECT imaging with diagnostic computed tomography. Symbia – its name derives from the word symbiosis – offers the best of two worlds in the true sense of the word. The first system in Europe to offer this new technology was installed last March at the University Clinic of Erlangen-Nuremberg, Germany. Professor Torsten Kuwert, M.D., head of the clinic’s department of nuclear medicine, says: “I can now examine patients with a technology that will revolutionize diagnostics – not only in nuclear medicine.” Symbia offers a highly

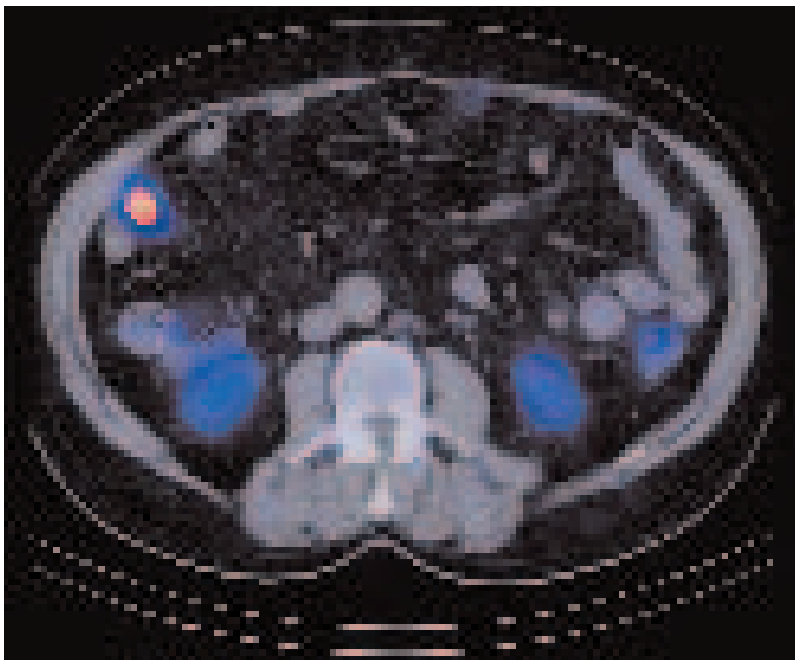
sensitive display of biochemical processes as well as the rich anatomical detail of multislice CT.

Contagious Enthusiasm

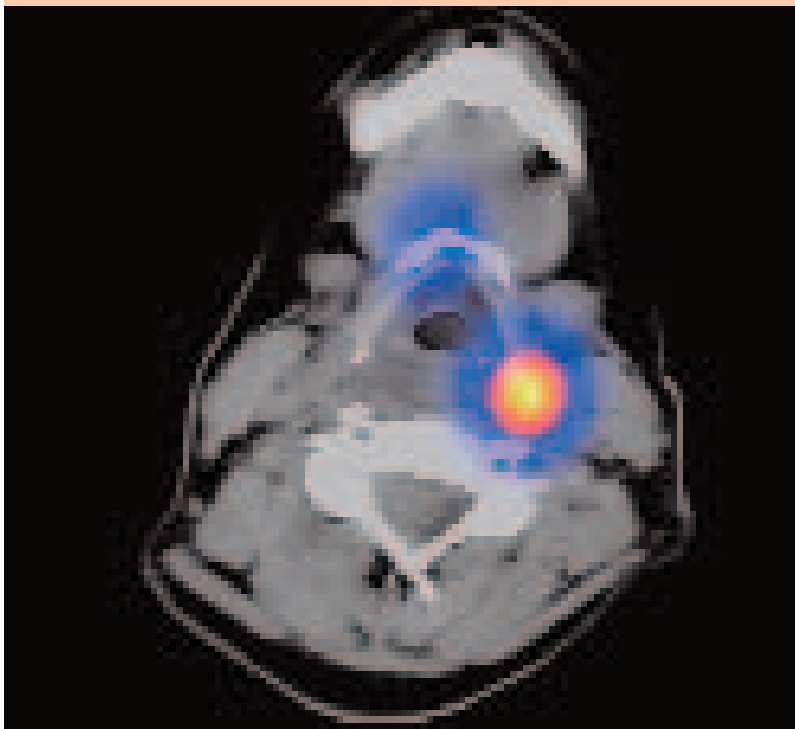
Two months after installation, Kuwert has scanned approximately 80 patients and is just starting to gain substantial experience with the new diagnostic method. His enthusiasm is apparently contagious as the entire department is already highly impressed with the amount of information contained in correlative imaging. “And it’s not just the staff that benefits from the new technology; above all it’s the patient. The examination



THE SIEMENS SYMBIA SYSTEM, correlative imaging with TruePoint SPECT-CT.



METASTASES of a pancreatic tumor located in between intestinal loops. Thanks to radioactive markers, even tumors smaller than 1 cm in diameter can be displayed scintigraphically using SPECT imaging. CT technology allows anatomical correlation with existent mass.



LYMPH NODE METASTASES on the left side of the cervix near the hyoid. These metastases accumulate radioactive iodine and can thus be identified with a hybrid SPECT/CT scan. With a CT scan alone, these metastases would show up simply as enlarged lymph nodes.

takes less than an hour and the results are there instantly. That tremendously reduces patient stress and anxiety," says the nuclear medicine specialist.

"One-stop shopping" is Kuwert's phrase for this kind of examination and he uses it often to describe the scanner's application flow. From a diagnostic point of view, the advantages of molecular and structural imaging in combination are obvious. The synergy of two cutting-edge modalities allows specialists to pinpoint the exact location, size, nature, and extent of disease anywhere in the body, using a single system. Previously correlative imaging was impeded by many factors, mainly patient repositioning and time between the two scans. These disadvantages are now obsolete and Kuwert states that patient care will consequently be improved in more than 30 percent of all cases.

Improved Workflow and Prompt Diagnosis

But it's not just the time factor that is so beneficial. Two accurate scans in one automated procedure provide high workflow efficiency. Cumbersome waiting time, unnerving uncertainty for the patient between the two scans, and time lost because of infrastructural problems are things of the past. An accurate diagnosis is available quickly and helps to ease patient anxiety.

Kuwert acknowledges the fact that patients are traditionally impressed by everything that is innovative and new, but in this case he confirms that the improved workflow and prompt diagnosis in particular create excellent feedback. "Patients' trust in medical innovations and the University Clinic is reassured and I believe that the positive response in my department will have a spillover effect on other departments of the clinic as well." Kuwert is already experiencing an increase in referrals, which he attributes to the Symbia system.

Enhancement of Diagnostic Accuracy

The Symbia TruePoint SPECT-CT system is the first system to combine two different imaging



PROFESSOR TORSTEN KUWERT, M.D., chairman of the department of nuclear medicine at the University of Erlangen-Nuremberg, explains the advantages of correlative imaging.

techniques, diagnostic scintigraphy and multi-slice computed tomography. Kuwert believes that this development will be expanded to other imaging modalities in the future. "Synergy effects of two overlapped high-quality images are certainly not limited to PET and CT scans. Most likely, hybrid systems using MRI or ultrasound technology will be available in the near future," Kuwert explains. This revolutionary development comes along with some new infrastructural changes for specialists as well. The Symbia technology calls for intensive cooperation between radiologists and nuclear specialists, with the physicians' side again being the source for enhancement of diagnostic accuracy, according to Kuwert. "Two opinions are always better than one," he says. His assessment of the cooperation between his nuclear medicine

department and the clinic's radiology department is very positive. "The Symbia system is located in my department, but it is directly networked with the department of radiology. This way images are available to radiologists for evaluation right away." Kuwert seems thrilled by these new developments. Extraordinary image improvement due to the new TruePoint SPECT-CT technology, enhanced patient comfort, and a close cooperation with other medical experts – these are all exciting factors that ultimately benefit the patient most of all.

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