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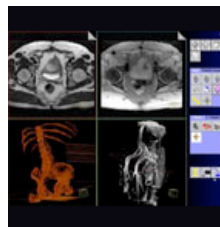
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News

Advances in Tumor Staging

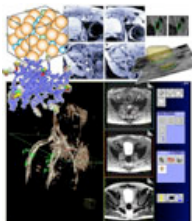
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Tumor staging is a vital step in the process of treating malignant-disease as it helps predict survival and guide treatment. The stage is characterized by the size of the tumor, the depth of penetration, lymph-node metastasis, whether surrounding organs have been infected, and the spread to outlying organs. Staging helps predict survival and guide treatment.



Taskcard may enable more access to lymph nodes.

Determining lymph node involvement in TNM (tumor, lymph nodes, and metastases) tumor staging and detecting metastases in lymph nodes are challenging, but vital, since lymph-node involvement changes the general treatment regime. Recent discoveries in the area of more targeted contrast agents may offer new diagnostic options, e.g., nanoparticle-based diagnostics of lymph nodes, that improve and accelerate metastases assessment. As a leader in diagnostic technologies, Siemens is continuously looking at new ways of improving the quality of patient care and together, with its partners, working on the latest advancements in tumor staging.



New nanoparticle-based diagnostics of lymph nodes

Siemens Alliances Play an Important Role

Siemens long-term, visionary strategic alliance with the Center for Molecular Imaging Research (CMIR), Boston, MA, has led to 'next generation,' magnetic resonance (MR) molecular imaging tools, i.e. molecular imaging applications for clinical use. One example is ironoxide nanoparticle distribution for diagnosing metastases in lymph nodes. Siemens has also invested in these new nanoparticle-diagnostic techniques, and is testing a prototype oncology package for MRI scanners at CMIR and the University Medical Center in Nijmegen, Netherlands, to provide customers with these exploratory techniques (more specifically, the taskcard and diagnostic workflow) and more specifically assess lymph nodes.

Clinical trials* in Europe and the US have demonstrated that applying the new technology to patients with prostate cancer significantly improved TNM staging. Under the trade name Combidex® (Ferumoxtran-10, Advanced Magnetics, MA) in the US and Sinerem® (Guerbet, France) in Europe, health authorities are in the final phase of approving this contrast agent. Further efforts to develop more disease-targeted nanoparticles for a multitude of clinical applications are currently under way in Ralph Weissleder's Laboratory at CMIR. Siemens is currently working towards providing such clinical applications to physicians and patients in this revolutionary field.

* Study 1: 40 patients in Holland and 40 patients in the US (N Engl J Med 2003;348:2491-9). Study 2: 77 patients in the US (AJR 2006; 186:144-148). Study 3: 18 patients in the US (Int. J. Radiation Oncology Biol. Phys., Vol. 63, No. 4, pp. 1262-1269, 2005). And other trials in total over 450 patients.

Related Links

- [Product Information: MRI](#)
- [Clinical Information: MRI in Oncology](#)
- [Picture of the Future: Interview with Ralph Weissleder, MD, PhD \[176 KB\]](#)

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