

Valuable Help in Pancreatic Surgery

New software developed at DKFZ to support physicians in surgery planning

More safety for cancer patients during surgery is provided by a new software which enables physicians to plan and perform surgical operations with enhanced precision. Computational molecular biologists of the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) have developed a computer program which has now been applied for the first time by surgeons of Heidelberg University Hospitals in the treatment of pancreatic cancer patients. Computational and medical scientists expect that computer-assisted surgery planning will provide physicians with better orientation during surgery and thus enable them to remove tumors more safely for the patient.

The new software has been developed by scientists of the Division of Medical and Biological Informatics headed by **Professor Hans-Peter Meinzer** in collaboration with DKFZ radiologists. The computer program transforms two-dimensional CT or MRT data into a three-dimensional reconstruction. Thus, it generates an image that can be turned in all directions and illustrates organs and tumors in spatial relationship to neighboring structures.

In cases of pancreatic cancer it is particularly important to have detailed knowledge of the anatomic conditions around the tumor, since various organs and important blood vessels are located in the direct vicinity. Therefore, prior to surgical removal, surgeons need to know exactly whether the tumor is restricted to the pancreas or has already grown into surrounding tissue. The three-dimensional image provides physicians with an exact spatial vision of the tumor's position and size. Radiologists can use these images to generate more precise diagnostic findings. Surgeons can use this technology preoperatively to obtain precise information about the individual anatomy of their patients. During surgery, the virtual image helps surgeons in orientation.

"The more information one gets about a tumor, the better are the chances of successful surgery," said **Professor Markus W. Büchler**, Medical Director of the University Surgical Hospital in Heidelberg. Jointly with his colleagues, PD **Dr. Jürgen Weitz** and **Dr. Hanns-Peter Knaebel** of the Department of General, Visceral and Trauma Surgery and **Dr. Lars Grenacher** and **Professor Götz Martin Richter** of the Radiology Department, Büchler has now planned and performed pancreatic surgery using the new software for the first time.

Further computer-assisted surgical operations will show whether the new method enables physicians to remove tumor tissue more safely and thoroughly and, thus, to better prevent complications and recurrence following surgery.

The task of the Deutsches Krebsforschungszentrum in Heidelberg (German Cancer Research Center, DKFZ) is to systematically investigate the mechanisms of cancer development and to identify cancer risk factors. The results of this basic research are expected to lead to new approaches in the prevention, diagnosis and treatment of cancer. The Center is financed to 90 percent by the Federal Ministry of Education and Research and to 10 percent by the State of Baden-Wuerttemberg. It is a member of the Helmholtz Association of National Research Centers (Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V., HGF).

This press release is available at www.dkfz.de/pressemitteilungen

Dr. Julia Rautenstrauch
Division of Press and Public Relations

Deutsches Krebsforschungszentrum
Im Neuenheimer Feld 280
D-69120 Heidelberg

T: +49 6221 42 2854
F: +49 6221 42 2968