Fraunhofer MEVIS and the University of Bern cooperate with the leading liver center in Shanghai

EurekAlert

[1]

In a research partnership between the Fraunhofer Institute for Medical Image Computing MEVIS in Bremen and the ARTORG Center for Biomedical Engineering Research at the University of Bern, this navigation technique will be intensively evaluated and developed further at the Eastern Hepatobiliary Surgery Hospital (EHBH) in Shanghai. Performing over 5,000 liver resections per year, the EHBH in Shanghai is the largest liver center in the world. Over 90% of the treated cases are primary liver tumors ? so-called hepatocellular carcinomas (HCC) ? which can be resected with a high probability of complete cure. The large number and wide scope of liver surgery cases at the EHBH allow both a clinical evaluation of the navigation support for these tumors in a relatively short amount of time and the incorporation of the results into the further development of the navigation system.

To initiate the research partnership, Prof. Heinz-Otto Peitgen and mathematician Andrea Schenk from Fraunhofer MEVIS in Bremen, Prof. Stefan Weber from ARTORG, and Prof. Daniel Candinas, head of visceral surgery and director of the Inselspital at the University of Bern, visited the EHBH in Shanghai from November 15 to 19, 2010. Under guidance of the liver surgeon Prof. Yi Wang and with support of the European guests, three patient operations were successfully performed with the liver navigation system produced by CAScination (Bern, Switzerland). Suggestions derived from the experiences collected in Shanghai are now integrated into the navigation system, and an updated system will be provided to the liver center in Shanghai for approximately one year.

Up until now, surgeons in the operating room (OR) have had to rely largely on their mentally conceptualized and memorized surgery plan, but modern navigation systems support the transfer of the preoperatively planned cutting line onto the patient's liver directly in the OR. After registering the computer-generated individual model of the organ with the patient's liver in the OR, the navigation system assists the surgeons to orient themselves in the complex network of the liver vessels and to identify the previously determined locations of highrisk structures. The current positions of the surgical instrument and the nearby blood vessels and tumors are continuously displayed on the screen. This provides the surgeons with a controlled realization of the previously planned optimal resection.

SOURCE [2]

Source URL (retrieved on *03/09/2014 - 3:05pm*):
http://www.mdtmag.com/news/2010/12/fraunhofer-mevis-and-university-bern-cooperate-leading-liver-center-shanghai

Links:
[1] http://www.eurekalert.org/multimedia/pub/28284.php?from=175725
[2] http://www.eurekalert.org/pub_releases/2010-12/f-fma122210.php