Universität Basel

Research Project

ARALPaN - Augmented Reality Assisted Laparoscopic Partial Naphrectomy

Third-party funded project

Project title ARALPaN - Augmented Reality Assisted Laparoscopic Partial Naphrectomy
Principal Investigator(s) Rosenthal, Rachel ;
Organisation / Research unit
Bereich Operative Fächer (Klinik) / Klinische Forschung in der Chirurgie (Rosenthal)
Department
Project start 01.12.2012
Probable end 30.11.2014
Status Completed
The project "Augmented Reality Assisted Laparoscopic Partial Naphrectomy" introduces an innovative and progressive surgical navigation system used for kidney operations. The navigation is based on a commercial electromagnetic tracking device. It was shown that the kidney can be tracked noninvasively by inserting an electromagnetic sensor over the urinary passage into the kidney. Since the proposed navigation system incorporates an electromagnetic tracking system, the positions and rotations of surgical instruments, such as the laparoscope or the grabber, can be determined straight forward. In ex-vivo experiments on pig kidneys, an augmented reality alignment error of 2.1 mm ś 1.2 mm was achieved.

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