

VISCERAL MEDICINE

Surgery planning on liver segment 6

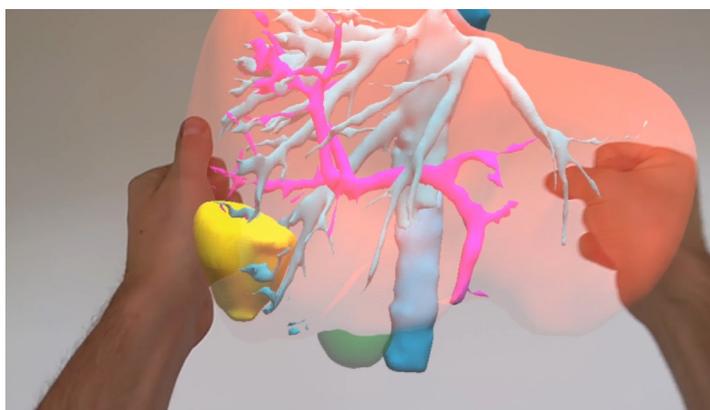


Fig. 1: 3D representation of the liver with a tumor in the liver segment 6

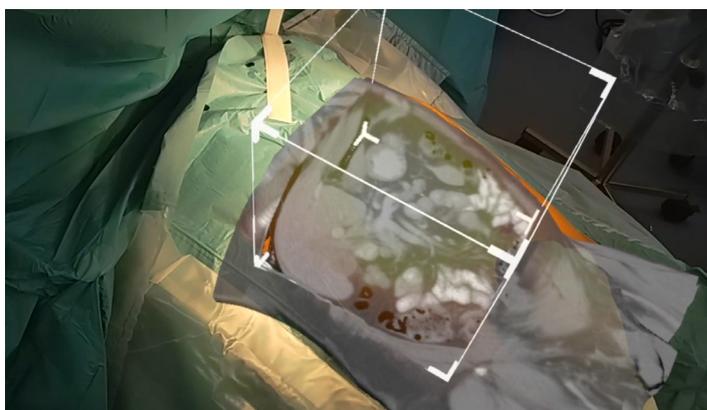


Fig. 2: MRI placed on patient

Case description: For complex operations in visceral surgery, holomedicine is a new and very innovative way of improving the quality of medicine. Taking a liver surgery operation as an example, we would like to show the advantages of the three-dimensional representation and application within the HoloLens. As usual, the planning of the operation was carried out via CT with the administration of intravenous contrast medium. The main advantage of the HoloLens is the rendering in the operating area, which supports the definition of the surgical routes. The import of the image data required for this is simple and can be carried out within a few minutes. The HoloLens connects with the cloud via wifi, which we can smoothly implement in our operating theater without any problems.



Fig. 3: Intraoperative use in visceral surgery

The operations carried out in Kamp-Lintfort at the Lower Rhine Tumor Center are documented accordingly and have already shown advantages of preoperative planning. In the future, the operation is to be simulated in the interdisciplinary network/tumor conference and will also aid us in effectively educating patients. The image shown here was used for the operation on a patient with a tumor in liver segment 6. The advantage of Holomedicine is particularly evident within complex resections in visceral surgery.

BENEFITS:

- Operation planning becomes more transparent for the patient through improved preoperative clarification and the patient is thus much better informed.
- The quality of the surgical procedure can be increased through the application of Holomedicine, in particular the rendering is a huge advantage.
- We see further possibilities for the future in the application in minimally invasive surgery.

„For me, rendering is the central element and a major advantage of Holomedicine. The tumor is displayed three-dimensionally via the imported CT. The transparent patient images can significantly improve the quality of the surgery planning.“

Prof. Dr. med. Gernot M. Kaiser, FACS
Chief Physician at the Clinic for General and Visceral Surgery
St. Bernhard Hospital

