Challenging the Status Quo

CAS-ONE sets the standards in image-guided surgical treatments on the liver

Surgeons challenge the Status Quo every day. Trying to make the impossible possible. So do we. CAScination’s navigation technology is designed to assist surgeons in this everyday challenge.

CAS-ONE seamlessly combines the precision of latest 3D model based stereotactic image guidance with intra-operative ultrasound imaging.

CAS-ONE - Thinking liver surgery differently
CAS-ONE - Ultimately user-friendly
CAS-ONE - Enabling new treatments

CAS-ONE - The unique solution for
• stereotactic open liver surgery
• stereotactic percutaneous interventions
Navigated Ablation of Vanishing Lesions

CAS-ONE enables precise and reproducible ablation treatments based on combined pre- and intraoperative imaging

Complete tumour ablation while avoiding critical vessels is certainly challenging.

CAS-ONE guides you to where you need to be, precisely and quickly.

Integrated ablation volume prediction helps to identify the optimal energy and time settings, allowing you deliver the right amount of energy exactly where you need it. Peace of mind!

Features
• Minimally invasive tumor ablation
• Support of different ablation systems
  - Microwave ablation
  - Radio frequency ablation
• Precise guidance to individual lesions
• Free selection of needle trajectories
• Prediction of optimal energy delivery
Ultrasound Based Patient Alignment

CAS-ONE is the only navigation system providing precise patient-to-image registration through sonography.

Enhance your orientation in the situs by fusing preoperative image data with real-time intraoperative ultrasound imaging.

This combination allows for augmentation of the native sonography view with features otherwise not visible such as vascular structures, functional volumes and lesions.

Alignment of the image data with the patient using sonography additionally enables seamless, intuitive, and precise navigation.

Features
• Automatic sonography based registration
• Precise MeVis-to-anatomy registration
• Augmentation of sonography with 3D data
• Comparison of pre- and intra-operative situation
• 3D navigated imaging
Integrated 3D Sonography

CAS-ONE integrates unique 2D/3D sonography technology for enhanced diagnostic and navigated ultrasound

We believe that during surgery you should have all available patient information at your fingertips. CAS-ONE is the only image guidance system that provides seamlessly integrated state of the art sonography technology. No need to switch between different systems and monitors during the intervention.

Features
• 128 bit, 5-10 MHz intraoperative probe
• B-mode, Doppler, Power-Doppler
• Touch-controlled pulsed wave Doppler
• Integrated navigation marker shield
• Screenshot and videocapture
• 24” touch screen at operation table

“We will be able to treat twice as many patients with liver metastasis.”
Daniel Inderbitzin MD, University Hospital Bern, Switzerland
Sonography-based intraoperative alignment of preoperative imaging with the surgical situs not only allows for precise instrument guidance. It further enables a real-time overlay of any medical imagery onto the current ultrasound image. This enhances ultrasound beyond its existing modes, that is why we call this Ubersound®. It can co-display any 3D-modality such as CT, MRI, MeVis as well as PET and other functional information on top of ultrasound images.

Ubersound enhances conventional ultrasound:

- Invisible lesions
- Vascular structures
- Segmental borders and branching patterns
- Functional volumetry
- Hot spots (i.e. PET)
- Liver function (i.e. HEF)
- Any information from 3D modalities

Ubersound displaying...

... invisible lesions  ... segmental borders  ... hot spots from PET
Food for Thought
Available literature on image-guided liver surgery

Latest presentations on conferences

- Laparoscopic computer-navigated ablation of liver metastases
  Swiss Surgical Congress, Bern, May 2014

- Preliminary experience with multiple microwave ablation facilitated by computer-assisted
  liver navigation in advanced neuroendocrine liver metastasis
  IHPBA, Seoul, March 2014

- Validation of computer assisted percutaneous microwave ablation of liver tumours –
  feasibility and safety assessment
  J. Engstrand, H. Nilsson, E. Jonas, T. Toporek, M. Peterhans, J. Freedman
  IHPBA, Seoul, March 2014

Journal articles

- Computer-assisted liver surgery: clinical applications and technological trends
  Peterhans M, Oliveira T, Banz V, Candinas D, Weber S

- A navigation system for open liver surgery: design, workflow and first clinical applications

- How to operate a liver tumor you cannot see
  Langenbecks Arch Surg. 2009 May; 394(3):489-94

- Planning impact of virtual tumor resection and computer-assisted risk analysis on operation
  planning and intraoperative strategy in major hepatic resection
  Lang H, Radtke A, Hindennach M, Schroeder T, Frühauf NR, Malagó M, Bourquain H,
  Peitgen HO, Oldhafer KJ, Broelsch CE
  Arch Surg. 2005 Jul; 140(7):629-38

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