## TRAINING IN LIVER DONOR LIVER TRANSPLANTATION – THE LIVER SURGERY TRAINER

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**Introduction:** The absence of post-mortem donated organs led to an increase of Living Donor Liver Transplantation (LDLT). The extensive operation requires besides perfect anatomical knowledge a restricted indication of the donor and the recipient as well as a detailed operation planning. This can be facilitated by the employment of software assistants (MeVisLab©) for 3D reconstruction and operation simulation. So far no training systems for computer-assisted planning of LDLT exist. We developed the LiverSurgeryTrainer based on a instructional design model, the 4C/ID-model by Merriënboer. It is a case based training system for computer-assisted planning of liver surgery. The aim is to investigate the acceptance of the learning system as preparing training program for LDLT among specialised liver surgeons.

**Material and Method:** The focus of the system is on therapy decision making and operation planning. According to the 4C/ID-model, learning cases of different severity are offered. The 3D operation planning of LDLT consists of the definition of the resection plain, which is based on the analysis of the individual vascular and bile duct anatomy as well as on the accurate determination of the transplant volume and the volume of the donors prospective liver remnant. Patient selection and operation strategies can be trained by separated case embedded subtasks. The implementation of the LiverSurgeryTrainer in MeVisLab© (Bremen) enables the embedded representation and interactive application of the 3D liver analysis and resection simulation of LDLT in the learning environment. The learner receives feedback of its task execution by confrontation of its result with one of an expert.

**Conclusion:** The LiverSurgeryTrainer can represent an important tool in education of liver surgeons in preparation of LDLT. It connects the evaluation of different operation strategies and indications validated by experts with practice of the new 3D analysis and visualisation software. The inhibition threshold to LDLT is to be further diminished and the safety of the donors and recipients to be further increased by purposeful practice of training programs. However the system can only complement not replace surgical training.

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