

Use of 3-D imaging on patients with pancreatic carcinoma

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In the field of hepatic imaging in the context of living liver donors and before complex partial liver resections, three-dimensional imaging of the liver, hepatic vessels and bile ducts has managed to become established in some centers. In this case, in addition to visualization, the volumetry of various liver sections is of interest. Moreover, the three-dimensional reconstruction can be used preoperatively to consider various resection options and to evaluate their technical feasibility with regard to vascular and bile duct anatomy and to the expected liver volume after surgery.

A research article to be published on December 14, 2009 in the [World Journal of Gastroenterology](#) applies this method to the pancreas in patients with pancreatic carcinoma.

The research team, led by Professor Grenacher from the University of Heidelberg, Department of Diagnostic and Interventional Radiology, found that a three-dimensional image of the pancreas represents an additional, valuable aid to the surgeon in the preoperative assessment of the resection of a pancreatic carcinoma. They examined ten patients with suspected pancreatic tumors prospectively using multidetector CT (Somatom Sensation 16, Siemens, Erlangen, Germany). Using the CT data sets, a three-dimensional image was created.

The CT examinations and the three-dimensional images were presented to the surgeon directly before and during the operation. Immediately after surgery, the value of the two images was judged by the surgeon. In comparison to the CT image with axial and coronal reconstructions, the

three-dimensional image was judged by the surgeons as better for operation planning and consistently described as useful. However, this method is time-consuming.

The software must be further developed to allow further automation of the segmentation to enable it to be integrated into daily clinical routine.

More information: Klauß M, Schöbinger M, Wolf I, Werner J, Meinzer HP, Kauczor HU, Grenacher L. Value of three-dimensional reconstructions in pancreatic carcinoma using multidetector CT: Initial results. World J Gastroenterol 2009; 15(46): 5827-5832

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