

AB130. P106. Three-dimensional visualization technology used in pancreatic surgery: a valuable tool for surgical trainees

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Background: Pancreatic cancer is one of the most aggressive malignancies, and currently surgical resection is the only curative approach. The success of the surgery depends on the precise evaluation of the tumor resectability, which requires detailed assessment of tumor invasion, vessel involvement and anatomical variation. Therefore, we conducted a randomized study to explore the value of three-dimensional (3D) visualized pancreatic model in surgery planning for surgical trainees.

Methods: Three cases with pancreatic cancer were used in this study. Fourteen questions in the respect of anatomy, diagnosis, tumor staging and surgery planning were developed by a group of pancreas surgeons in each case. Eighty-eight surgical residents participated in this study. The participants were randomly assigned into two groups. Both groups began with training on how to evaluate the resectability of pancreatic tumor, which was based on the NCCN clinical practice guidelines and then a clinical case

was taken as sample and practiced. After the training, the 3D group learned the sample case on the 3D real-time reconstruction multi-touch visualization table by themselves; meanwhile, the 2D group studied the same case through the conventional cross sectional computed tomography (CT) images. Finally, both groups completed the same test consisting of two pancreatic cases with CT images. After the test, all the participants completed a questionnaire.

Results: Differences in the scores between the groups were tested with the unpaired *t* test. No differences was found in the scores of anatomy part, however, the mean scores for questions, associated with diagnosis, tumor staging and preoperative planning, were consistently and significantly higher in the 3D group compared with the 2D group. Year of training, sex and previous pancreatic surgery experience had no effect on the scores. In addition, participants in 3D group agreed that the 3D visualized pancreatic model was more beneficial for trainees in understanding and making pancreatic surgery planning.

Conclusions: The 3D visualization table may have the potential to be a valuable supplemental learning tool in building anatomy-image-surgery knowledge system and thus making surgery planning for surgeon trainees, as it provided a better 3D understanding of the tumor and its surroundings, and demonstrated advantages for interacting with cross sectional images.

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