Value of shear wave velocity in predicting postoperative pancreatic fistula

Xutao Lin; Xiaotong Lv; Yu Cheng

Heaptobiliary Dept. of Binzhou Medical University Hospital

Objective: Postoperative pancreatic fistula (POPF) is the most serious and common complication after PD, there is no way to avoid pancreatic fistula completely in many anastomosis. The characteristic of pancreatic tissue itself is the most important in all the factors affecting pancreatic fistula. Shear wave velocity (SWV) by Virtual Touch Tissue Quantification (VTQ) detect pancreatic tissue elasticity to predict the risk of pancreatic fistula, through the detection of different parts of the SWV, select the appropriate location and different anastomosis of pancreaticojejunostomy, reduce the occurrence of pancreatic fistula.

Methods: 98 patients underwent pancreatoduodenectomy from January 2017 to July 2018 in our hospital were analyzed, 32 cases of cholangiocarcinoma, 40 cases of pancreatic cancer and Papillary carcinoma of the duodenum were 26. The velocity of shear wave in different parts of pancreas was detected by VTQ technique, and the elasticity of tissue in different parts of pancreas was reflected. Correlation between pancreatic SWV value and pancreatic fistula using linear correlation analysis, the predictive value of POPF was based on the area of (ROC) curve. To compare the incidence of pancreatic fistula of different parts by SWV value of different parts of pancreas.

Results: There were 23 cases (23.47%) of pancreatic fistula in 98 patients, and the correlation analysis showed that there was significant correlation between SWV value and pancreatic fistula (r=0.513, p<0.05), and the severity of pancreatic fistula was negatively correlated with the SWV value. The SWV value below the ROC curve is 0.9467, which has high predictive value for POPF(Fig3). SWV value of pancreatic carcinoma and bile duct carcinoma have significant differences with Papillary carcinoma of the duodenum, and are closely related to pancreatic fistula.

Conclusions: SWV by VTQ is an independent high risk factor and has highly predictive value for postoperative pancreatic fistula, and can guide the Pancreaticoenterostomy site and mode.