



Implication of pancreaticoenterostomy regarding postoperative pancreatic fistula

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I appreciate Dr. Crippa and Falconi for their interest in our article regarding Blumgart anastomosis (BA) and its drawback (1). I agree that they pointed out our study has all the drawbacks of a retrospective analysis, mostly considering the small number of patients analyzed in a very long period (2).

As they mentioned, the most important factor for postoperative pancreatic fistula (POPF) is pancreas itself irrespective of surgical methods. In our experience, of 163 patients undergone PD, the most important factor is duct size and texture of pancreas rather than surgical methods (not published). In a recent our study, application of octreotide is not effective and not to reduce POPF after pancreaticoduodenectomy (PD) (3). Many modifications of pancreaticoenteric anastomosis with medical and surgical intervention have been studied to reduce the POPF rates although no specific technique or intervention can reduce the development of clinically relevant (CR)-POPF (4).

Dr. Crippa and Falconi also pointed out more experience and better results of PD. In my opinion, pancreaticoduodenectomy can be performed at a low-volume (LV) hospital with good results (5). Furthermore, sharing of operative techniques and perioperative cares, enabled the LV hospitals to achieve comparable surgical outcomes bear comparison with high volume institute (6). To improve and acquire good outcome of PD, LV hospital should do their best in all above mentioned.

With regards to surgical methods, largest study (7) about POPF after pancreaticogastrostomy (PG) and

pancreaticojejunostomy (PJ) could not reveal that one operation method is better than the other. PJ may have little or no difference from PG in overall POPF rate. Also, Dr. Falconi's group revealed (8), 10 randomized controlled trials (RCT) showed significant heterogeneity regarding definitions of POPF, perioperative management, and risk of pancreatic gland itself. In analysis of RCTs, no significant differences were found in the surgical outcome including CR-POPF.

BA is an emerging technique of pancreaticoenteric anastomosis with low rates of CR-POPF (9). In most of RCTs regarding the method of pancreaticoenterostomy, the method used for PJ was not BA. In a recent study by Wang *et al.* (10), modified BA was compared with a matched group of patients with PG, which has shown the superiority of modified BA over PG with regards to CR-POPF 7% (PG 20%, $P=0.007$). Although not being an innovative technique, BA may serve as a tip for less experienced surgeons or LV center. In future, as Falconi recommended (8), RCT with recruiting patients with "high risk pancreas" to be randomized to PG or PJ.

In our center, since mortality occurred in patient with unmatched pancreas and jejunum volume, tailored pancreaticoenteric anastomosis was started according to the extent of jejunum and pancreas volume. When the pancreas stump was too bulky or thickened compared to the anastomotic area of the jejunum, we performed PG. Rather than surgical methods, tailored effort to reduce POPF according to risk grades is important and essential.

Pioneer of in this field, Prof. Vollmer, the Fistula Risk Score for POPF identified a high-risk where drains improved fistula outcomes and a low-risk group where drains were paradoxically harm (11). Such manifestation subsequently guided a risk-adjusted management of pancreas at pre and post operation to reduce POPF (12)

In conclusion, as known as every hepatobiliary surgeon, irrespective of surgical methods for pancreaticoenteric anastomosis, every effort to reduce POPF including risk-adjusted evaluation and perioperative management should be optimized to patients.

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Footnote

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