



Invited Commentary

Commentary on “Surgical management and outcome of grade-C pancreatic fistulas after pancreaticoduodenectomy: A retrospective multicenter cohort study”



Ma, Liang, and co-authors [1] describe a retrospective multicenter cohort study on grade-C postoperative pancreatic fistulas (C-POPF) [2] following pancreaticoduodenectomy. Data on over 5,100 cases from 9 high-volume institutions over a 5 year period ending in 2016 revealed a 1.3% incidence of C-POPF, of which most (78%) underwent re-laparotomy after a mean time of 9.5 days. Pancreas preserving surgical strategies were chosen in almost all instances (96%). Of the remaining 22% (n = 15), 11 deaths were associated with the pancreatic fistula and 4 developed organ failure caused by the pancreatic fistula. The overall 90-day mortality among C-POPF cases was 37%. Interestingly, the mortality of those with organ failure who underwent re-laparotomy was significantly lower than those with organ failure who were treated conservatively. Also of note is that 53.7% of patients had non-pancreatic lesions.

Salvage re-laparotomy was undertaken for massive post-operative hemorrhage, severe sepsis with/or organ failure, general peritonitis, and inadequate interventional drainage of peritoneal collections. External wirsungostomy (38%, external tube drainage of the main pancreatic duct on a temporary or permanent basis), re-pancreaticojejunostomy (28%), and simple peritoneal drainage (28%) accounted for the vast majority (96%) of procedures performed. Bleeding (peritoneal or gastrointestinal) was the most frequent (71%) co-complication and cause of re-laparotomy in patients with C-POPF, especially in instances of simple peritoneal drainage (87%). There were only 2 cases of completion pancreatectomy (4%) and one of pancreatogastrostomy (2%).

The external wirsungostomy group (n = 20) was characterized by being the only group with prominent dehiscence of the pancreatico-jejunal anastomosis (20%), with the greatest incidence of general peritonitis (35%), and with shortest hospital stay (20 days). Only 15% (3/20) underwent a planned repeat pancreaticojejunosomy 6–9 months later. An additional 3 sustained accidental removal of the tube, while the remaining 14 either refused a repeat intervention or died while waiting for it.

Adjuvant therapy, that might have benefited 91% (n = 48) of C-POPF cases, was delayed or never delivered in 13% and 67% of cases, respectively.

The authors conclude that in instances of C-POPF, surgical re-intervention with a pancreas-preserving approach should be undertaken whenever possible. The specific procedure chosen depended on specific individual circumstances. They also observed that longstanding high amylase drainage may predict better outcomes after re-laparotomy.

Although the short-term approaches and outcomes are remarkable and conceptually attractive, several points that would complement what has been previously described [2–5] still remain unanswered. There is limited information for example, on the long-term outcome of the external wirsungostomy group as a whole, as well as the procedure/s chosen and success rate/s for those who underwent reconstruction 6–9 months later. The timing of the surgical intervention seems to have varied widely from 7 to 13 days and the effect on procedure and outcome was not measured. Other factors that remain unclear include the overall morbidity and mortality after 90 days, the incidence of endocrine/exocrine pancreatic insufficiency, whether bridge stents were considered, the type/s and success rate/s of image-guided interventions undertaken on an immediate and delayed bases, the relevance of pancreatitis, and whether previous or new classification systems may be applicable to this series [5].

References

- [1] T. Ma, X. Bai, W. Chen, M. Lao, G. Jin, K. Zheng, D. Fu, F. Yang, R. Qin, X. Li, W. Lou, L. Zhang, K. Jiang, P. Wu, C. Shao, A. Liu, Y. Yang, Y. Ma, H. Wu, T. Liang, Surgical management and outcome of grade-C pancreatic fistulas after pancreaticoduodenectomy: a retrospective multicenter cohort study, *Int. J. Surg.* 68 (2019 Jun 10) 27–34, <https://doi.org/10.1016/j.ijss.2019.05.019> [Epub ahead of print].
- [2] M.T. McMillan, C.M. Vollmer Jr, H.J. Asburn, C.G. Ball, C. Bassi, J.D. Beane, A.C. Berger, M. Bloomston, M.P. Callery, J.D. Christein, E. Dixon, J.A. Drebin, C.F.-D. Castillo, W.E. Fisher, Z.V. Fong, E. Haverick, M.G. House, S.J. Hughes, T.S. Kent, J.W. Kunstman, G. Malleo, A.L. McElhany, R.R. Salem, K. Soares, M.H. Sprys, V. Valero III, A.A. Watkins, C.L. Wolfgang, S.W. Behrman, The characterization and prediction of ISGPF grade C fistulas following pancreatoduodenectomy, *J. Gastrointest. Surg.* 20 (2015) 262–276, <https://doi.org/10.1007/s11605-015-2884-2>.
- [3] T.S. Kent, M.P. Callery, C.M. Vollmer Jr., The bridge stent technique for salvage of pancreaticojejunal anastomotic dehiscence, *HPB* 12 (8) (2010 Oct) 577–582, <https://doi.org/10.1111/j.1477-2574.2010.00227.x>.

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<https://doi.org/10.1016/j.ijss.2019.08.007>

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- [4] M.P. Callery, W.B. Pratt, T.S. Kent, E.L. Chaikof, C.M. Vollmer Jr., A prospectively validated clinical risk score accurately predicts pancreatic fistula after pancreateoduodenectomy, *J. Am. Coll. Surg.* 216 (1) (2013 Jan) 1–14, <https://doi.org/10.1016/j.jamcollsurg.2012.09.002> Epub 2012 Nov 2.
- [5] R. Gray, J. Cagliani, L.I. Amodu, P. Nauka, B. Villacres, T. Santos, A. Castenada, J. Fishbein, N. Ahmed, G. Coppa, H.L. Rodriguez Rilo, Maximizing the use of scoring systems in the prediction of outcomes in acute pancreatitis, *Digestion* 99 (2) (2019)

166–171, <https://doi.org/10.1159/000490887> Epub 2018 Sep 18. PMID:30227402.

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