

EDITORIAL

Surgical Treatment of the Pancreas: The Current Strategy and Future Directions

Guntars Pupelis

Department of General and Emergency Surgery, Riga East Clinical University Hospital, 2Hipokrata St., LV 1038, Riga, Latvia

ABSTRACT

The collected knowledge about diseases of the pancreas has changed much of the surgical strategy in the field of acute and chronic inflammation and oncologic conditions. Global cooperation has prepared the ground for a consensus regarding the treatment strategies. These involve the recovery of microcirculation and organ function in the acute phase, followed by focusing all efforts to localize the process with a strong indication to intervene when sepsis complicates the clinical course of acute pancreatitis. In the case of chronic pancreatitis, the strategy includes the selection of indications for surgical or endoscopic intervention at the right time and for the right patient. However, slower progress has been observed in the treatment of oncologic diseases when its success over the last decades is assessed critically. Timely preoperative recognition of the oncologic conditions and the selection of patients who are in dire need of advanced surgical treatment are closely associated with the necessity for high-level technical skills; nevertheless, the expectation given to the patients is not very promising. All efforts directed towards an individualized approach that includes an early recognition of the disease, multifactorial markers, improved visual diagnostics, planning of the preoperative treatment and an appropriate selection of the surgical strategy lead to a multidisciplinary model of treatment, and all research and publications concentrated on that issue add hope for a better cure.

EDITORIAL

When I started my surgical career in a small countryside hospital, the older surgeon told me that I could do a lot of things in the abdominal cavity but was better off not touching the pancreas. It was a common opinion then due to the lack of knowledge. Nowadays, the accumulated knowledge about the pancreas has changed much of the surgical strategy in the field of acute and chronic inflammation, and especially in oncologic conditions. The consensus agreement has delineated a basic strategy directed towards the recovery of microcirculation and organ function in the first week, and focusing all efforts to localize the process over a four week period with a firm indication to intervene when sepsis complicates the clinical course of acute pancreatitis. The recent initiative to organize a closer international collaboration may provide information on the epidemiologic situation, the currently available and necessary therapies, and may be critical in the development of a more personalized medicine [1]. The experience of the interventional treatment has proved the value of minimally invasive video-assisted approaches, but the choice of the method depends on the experience and

readiness of the team. The undisputable role of endoscopic surgery is another advantage, and the only question is whether surgeons should be more familiar with the endoscopic and other minimally-invasive methods, including the radiologic method, or endoscopy and radiology specialists should go deeper in the surgical field. It largely depends on the local standards of the educational system and enthusiasm, however, as a surgeon, I side with the idea that surgeons should be more educated and involved in the fast-developing field of endoscopic and other types of hybrid operations. The achievements in the field of chronic pancreatitis are also solid when the place of surgery and endoscopy is considered. The role of radiology for the definitive selection of indications to intervene is of utmost importance, and the new developments in the field of imaging would probably strongly enhance the possibility for a more precise selection of indications for surgical intervention or an alternative endoscopic treatment. The permanent problem of the restitution of the pancreatic function still exists, and this is the field of multidisciplinary approach trying to preserve as much as possible on the one hand, while searching for supplementation of the functional pancreatic tissue through portal or other approaches [2, 3] on the other hand.

A sadder situation exists in the surgical treatment of pancreatic malignancies, especially the most frequent form of pancreatic duct adenocarcinoma. All attempts to improve the five-year survival, the surrogate criteria probably chosen because of the inability to improve the situation, are in the improvement measured in months,

Received January 29th, 2017 – Accepted February 12th, 2017

Keywords Pancreas; Surgical Oncology

Correspondence Guntars Pupelis

Riga East Clinical University Hospital

2 Hipokrata St., LV 1038, Riga, Latvia

Phone + 37129404783

Fax + 37167042763

E-mail aslimnicagp@gmail.com

not years. Master surgeons might be proud of their ability to perform extended lymphadenectomies or pancreaticoduodenectomy with vascular resection in an open or laparoscopic way even with robotic precision [2]; however, the problem is not solved due to the fact that surgical art in front of the systemic and not yet well-understood disease is not capable of working out a sure-fire way of preventing the recurrence and metastatic spread. The role of imaging is very important for the decision to operate [4, 5], and the new technical approaches are promising for the differentiation of malignancies, such as proton nuclear magnetic resonance spectroscopy / gas chromatography-mass spectrometry [6]. All of it includes a multidisciplinary approach gathering geneticists, chemotherapy, radiotherapy and laboratory specialists and pathology service, the reference point for further development. A step forward has been made in the understanding of the resectability of borderline tumours after neoadjuvant therapy [7, 8], but it is a small step.

Pancreatic cancer is one of the most common malignant diseases in the world. Due to a pessimistic future prognosis indicating that in 2020 pancreatic oncology will be the second leading pathology in the United States [8], the rest of the world, especially countries with an aging population, will face the same situation. A poor prognosis is mainly the result of a late diagnosis and non-specific symptoms. Despite the advances in radiological diagnosis of pancreatic diseases, the differentiation between malignant and inflammatory pancreatic tumors still remains difficult. One direction is focused on an early recognition of pancreatic malignancies; the other, especially when we face the advanced disease, is directed towards the enhancement of the host response and recognition of the malignant tissue as a target. The capacity to destroy malignant tissue while preserving the live tissue, with induction of the body response, is slowly moving forward. Unfortunately, even the best masters of surgery will now achieve that which is possible with the mechanical removal of the tumour and the suspected tissue and waiting for the response of the disease, and will not be sure whether the next surgical move is rational. A better understanding of the early signs of the probable malignant growth, screening programs

and better diagnostic abilities, the search for an integrative approach with the recognition of the new markers are the current strategic directions [9], and all innovations highlighted in the JOP make the cure more possible, and this is a notable input of all the researchers.

Conflict of Interest

Authors declare to have no conflict of interest.

References

1. Papachristou GI, Machicadoa JD, Stevensb T, Goenkac MK, Ferreirad M, Gutierrez SC, et al. Acute pancreatitis patient registry to examine novel therapies in clinical experience (APPRENTICE): an international, multicentre consortium for the study of acute pancreatitis. *Ann Gastroenterol* 2017; 30:106-113. [PMID: 28042246]
2. Hartmann D, Kaufmann B, Friess H. Surgery for pancreatic disease. *Curr Opin Gastroenterol* 2016 Jul 15. [Epub ahead of print]. [PMID: 27428805]
3. Del Chiaro M, Rangelova E, Segersvärd R, Arnelo U. Are there still indications for total pancreatectomy? *Updates Surg* 2016; 68:257-263. [PMID: 27605208]
4. Somers I, Bipat S. Contrast-enhanced CT in determining resectability in patients with pancreatic carcinoma: a meta-analysis of the positive predictive values of CT. *Eur Radiol* 2017. [PMID: 28093626]
5. Mönnings P, Belyaev O, Uhl W, Giese A, Tannapfel A, Köster O, Meier JJ. Criteria for Determining Malignancy in Pancreatic Intraductal Papillary Mucinous Neoplasm Based on Computed Tomography. *Digestion* 2016; 94:230-239. [PMID: 28030856]
6. McConnell YJ, Farshidfar F, Weljie A M, , Kopciuk K A, Dixon E, Ball CG, et al. Distinguishing Benign from Malignant Pancreatic and Periampullary Lesions Using Combined Use of 1H-NMR Spectroscopy and Gas Chromatography-Mass Spectrometry. *Metabolites* 2017; 7. pii: E3. [PMID: 28098776]
7. Xia BT, Fu B, Wang J, Kim Y, Ahmad SA, Dhar VK, et al. Does radiologic response correlate to pathologic response in patients undergoing neoadjuvant therapy for borderline resectable pancreatic malignancy? *J Surg Oncol*. [PMID: 28105634]
8. Sinn M, Bahra M, Denecke T, Travis S, Pelzer U, Riess H. Perioperative treatment options in resectable pancreatic cancer - how to improve long-term survival. *World J Gastrointest Oncol* 2016; 8:248-57. [PMID: 26989460]
9. Kwon MS, Kim Y, Lee S, Namkung J, Yun T, Yi SG, et al. Integrative analysis of multi-omics data for identifying multi-markers for diagnosing pancreatic cancer. *BMC Genomics* 2015; 16(Suppl 9): S4. Correction in: *BMC Genomics* 2017; 18:88. [PMCID: PMC4547403]