

REVIEW

From Prof. Dr. Radoslav Nenkov Gaidarski, MD, DSc

Dr. Elmira Momchilova Daskalova

Pancreato-jejunostomy after duodeno-hemipancreatectomy - types, results, individual approach of selection

with scientific adviser: Prof. Dr. Kiril Draganov, MD, DSc for obtaining the scientific and educational degree "PhD" in the scientific specialty "General Surgery" professional field 7.1. Medicine, in the field of higher education 7. Health and sports

The dissertation was discussed and directed for defense by an extended scientific board of the Clinic of Liver, Gall, Pancreatic and General Surgery of Acibadem City Clinic Tokuda Hospital EAD, convened by order 443 / 29.06.2020 of the executive director of the hospital.

Pursuant to Art. 4 of the Law on the Development of Academic Organizations, Art. with Order 570 / 18.09.2020 of the executive director of the hospital I am included in the scientific jury for writing a position paper.

Dr. Elmira Momchilova Daskalova was born on 05.12. 1989. From 2008 to 2014 she studied at the Faculty of Medicine, Medical University - Sofia. From 2015 to 2017 she worked as a doctor in the Department of General Surgery, University Hospital "St. Catherine" - Sofia, and since 2017 she has been appointed as a specialist in the Clinic of Liver-Gall, Pancreatic and General Surgery, Acibadem City Clinic, Tokuda Hospital, Sofia, Bulgaria.

The dissertation is written in a volume of 144 pages, of which:

- Introduction and overview - 48 pages;
- Materials and methods - 30 pages;
- Results and discussion - 21 pages;
- Conclusion - 3 pages;
- Extensive literary review - 380 authors, of which 22 in Cyrillic.

The dissertation is divided into 5 chapters.

The first chapter, 'Literature Review', entitled 'Contemporary Aspects of the Pancreatic Anastomosis in Duodeno-Hemipancreatic Resections', traces the historical development of pancreatic resection surgery from the time of the first resection of the pancreas and the eighteenth to the twentieth century.

The authors and the stages of development of this branch in abdominal surgery are followed sequentially, emphasizing the main indications of the need for DHPE of the pancreas:

- carcinoma of the pancreas
- chronic indurative pancreatitis

- intraductal papillary mucinous neoplasms
- gastrointestinal stromal tumors
- adenocarcinomas of the duodenum
- neuroendocrine tumors.

For each of the listed indications, the opinions of dozens of authors, mainly from the English-speaking field, are cited, with evidence of the need for appropriate surgery on the pancreas and the positive and negative postoperative results.

In accordance with the main purpose of the dissertation in section three of the same chapter "Surgical aspects of the pancreatic anastomosis" in history are traced the individual types of anastomoses of the gland and other hollow organs, small intestine, stomach and intraoperative drainage of the anastomosis. and a comparative analysis of the two types of anastomoses (intestinal and gastric) according to the authors and schools from the specialized surgical literature, paying special attention to the common complications - postoperative pancreatic fistula, hemorrhages and late postoperative complications.

The second chapter, 'Study Methodology', is devoted to the 'Main Objective and Tasks', which are worded as follows: from insufficiency, respectively improvement of the early postoperative results'. To achieve the main goal, a Working Hypothesis has been defined, for the implementation of which 10 tasks have been set, which in the following sections are successively the subject of analysis and discussion

The section "Materials and methods" lists 242 operated patients by the Whipple method from 829 pancreatic resections performed at the Clinic of Liver-Gall, Pancreatic and General Surgery at Tokuda Hospital for the period from 01/01/2009 to 31/10/2019. The study of the material is retrospective, one-centered. The selection of cases is made on the basis of inclusive and exclusive criteria, described in detail and analyzed way in page 5.

Chapter 3 'Results from own studies' treated 111 operated women and 125 men with an average age of 60.8 years. The youngest patient was 30 years old and the oldest was 80. The following facts are worth noting in the study:

- In almost half of the cases (49.6%) the cancer of the head of the pancreas predominates / DHPE is performed.;
- Comorbidity (concomitant and past diseases) is a decisive factor in the outcome of the performed surgical intervention. The groups of diseases are described in detail - arterial hypertension, chronic lung diseases, preoperative mechanical jaundice, which have a proven adverse effect in the postoperative period of the operated patients;
- Protective pancreatic drainage - in 93% a prosthetic drain with dimensions 6 or 8 CH was placed, as in 68% the drainage was of the 'fart' type, and in the remaining 32 5 - external;
- Protective biliary drainage - 44.5% of the operated are fitted, as it is removed from the outer abdominal wall;
- Suture of the pancreatic hammer type 'Caracas' - 47% of cases;

- Use of apancreato-protective somatostatin analogues in the postoperative period - 27% of cases with imposed nastoses.

The fourth chapter "Analysis and discussion of own results" presents interesting interpretations of the obtained postoperative results:

- slight predominance of males in terms of morbidity (54%) over females (46%) - anamnestic history of frequent and higher alcohol consumption in men compared to women;
- a link has been established between pancreatic malignancy and diabetes, as well as the dependence on the number of concomitant diseases; in a correlation analysis;

a link was found between previous prolonged high bilirubin levels and pancreatic anastomosis insufficiency in men. Such dependence is absent in the preliminary stenting of the choledochus and the sounding of the intercostal space;

- such dependence has been found in patients with low preoperative hemoglobin and low albumin values, which requires mandatory preoperative maximum compensation of the indicators in order to prevent insufficiency;
- proven statistical relationship between the soft forms of the pancreatic gland (soft pancreas) and postoperative insufficiency of the pancreatic anastomosis - a thesis that coincides with the opinions of a number of authors and schools outside our country;
- the analyzed cases with protective drainage of the pancreatic and biliary canal reduce the risk of corresponding postoperative insufficiency;
- the postoperative somatostatin parenteral treatment recommended by many authors in 145 of the examined cases no statistical dependence was established, therefore their obligatory use in the postoperative period is not recommended. The same analysis performed on the same number of patients (145 patients) concerned the imposition of a 'caracas' suture and duct-to-mucose anastomosis. Despite the pessimistic analysis, it is still recommended to use them as factors for a lower risk of developing high-flow pancreatic insufficiency with or without peritonitis.

The last **fifth chapter "Conclusion"** ends with the established fact that the postoperative lethality is permanently reduced, but the percentage of early specific complications is still very high - mainly pancreatic anastomosis with subsequent pancreatic fistula. Based on the examined 236 patients, 10 conclusions were formulated, which were analyzed in detail and reflected by means of tables, graphs and photographic material:

1. No connection is established with the obtained postoperative fistula in the following cases - sex, age, long-term use of cigarettes and alcohol, histological diagnosis, previous interventions for other oncological diseases, conventional and laparoscopic interventions;
2. Diabetes mellitus accompanying more than 2-3 diseases, high hyperbilirubinemia before surgery (but only in men), uncompensated anemia and hypoproteinemia, bacteriobilia in and after surgery are presented as risk factors in the study.

3. Soft consistency of the residual parenchyma in combination with a narrow pancreatic duct 3 and less than 3 ml wide - factors for insufficiency and subsequent fasting.
4. The risk of developing a fistula is statistically lower in patients with a protected pancreatic anastomosis.
5. The same applies to the bilio-digestive anastomosis.
6. There was no statistical relationship between the incidence of postoperative fistula and the administration of somatostatin derivatives, and no relationship between caracas suture and duct-to-mucosa anastomoses.

The other 4 conclusions are actually a repetition of some of the ones quoted above, which is why I leave them without comment.

In support of the dissertation are presented two publications on the same topic, evaluated with a total of 30 points, as well as a summary in which the main chapters and sections of the original text are presented and repeated.

The dissertation of Dr. Elmira Daskalova presented for review is presented in a volume of 145 pages, of which 102 pages analysis and 43 pages Bibliographic reference. The analysis is divided into 5 chapters with respective sections and subsections.

I emphasize that the first chapter is a rare detailed and consistent follow-up of the historical development of this section of abdominal surgery.

In the existing surgical literature, such a consistent and high-level exposition of the bibliographic reference on the topic set in the dissertation can be rarely found. This part can be the subject of an independent scientific publication, as Dr. Daskalova presents in her work. The total material was very well selected - 236 cases of over 800 surgeries on the pancreas.

The performed analysis and used methods are at a high professional and scientific level.

Surprising is the concluding part, in which a comparative assessment of the operative technique used in performing the pancreato-jejuno anastomosis, in which the pancreato-ducto-mucosal anastomosis with a long suture is better than the one with a mattress suture.

The latter has been used in practice for more than 30 years, there is no contact with the intestinal mucosa and there is a danger of stenosis of the involvement between the canal and the intestine due to later fibrosis with narrowing and in some cases tight closure of the pancreatic duct.

While in the case of long-term suturing with non-resorbable sutures, the possibility of early insufficiency and late stenosis of the complication between the pancreatic duct and the intestine is much more probable due to close contact with the non-resorbable suture and the fibrosis formed at a later stage. , but it does not belittle the overall scientific work. For this reason, I recommend the esteemed scientific jury to award Dr. Elmira Daskalova the educational and scientific degree 'PhD' in the professional field 7.1 Medicine, doctoral program General Surgery.