Kryvoruchko I. A., Goncharova N. M., Gontar V. F. Treatment of acute complicated pancreatic pseudocysts. Journal of Education, Health and Sport. 2017;7(3):551-558. eISSN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.542260
http://ojs.ukw.edu.pl/index.php/johs/article/view/4397
https://pbn.nauka.gov.pl/sedno-webapp/works/814875

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26.01.2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 27.03.2017. Revised 28.03.2017. Accepted: 29.03.2017.

Treatment of acute complicated pancreatic pseudocysts

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Abstract

The results of surgery in 70 patients with acute complicated pancreatic pseudocysts in age from 21 to 79 years were analyzed. For patients using an individualized medical – diagnostic campaign, which primarily was aimed at the elimination of complications following treatment with most of the pseudocyst in the long-term. In most cases, using percutaneous drainage for the purpose of the stabilization patient's general well-being, the possibility of the influence on the development the sepsis and severe organ dysfunction. If found impossible using this minimally invasive methods, and only when it is impossible to use them, or the development of complications after surgery, or results are unsatisfactory, performed "open" surgery. Mortality in complicated acute pseudocysts was 3.4 %.

Keywords: complicated acute pancreatic pseudocysts, pancreatic necrosis, severe organ dysfunction, surgical treatment.

Introduction. There has been a significant increase in the number of patients with pseudocyst (PC) of the pancreas, which depends on the increase in morbidity acute or chronic pancreatitis (CP) [1, 3]. Whether in the arsenal of surgeons wide range of surgical interventions

in patients with PC software still there is a large number of complications, such as perforation, arosive vascular bleeding, compression extrahepatic bile ducts, jaundice, compression of adjacent organs, which is a direct threat for life [5, 6]. Acute PC software arising from severe acute pancreatic necrosis, the presence of elements of destruction tissue fluid sequestration and systemic toxicity complicated disease such as sepsis, a systemic multiple organ dysfunction syndrome [2, 7]. To determine the surgical treatment of patients with acute complicated PC is necessary to distinguish them from parapancreatic liquid accumulations with pancreonecrosis. Thus, the complicated PC called acute inflammatory cyst that formed the background to the acute pancreatitis, while chronic PC software is able to occur only in CP. A true, in our opinion, is the distribution of complicated PC acute and chronic, depending on the time of their existence, the density of the wall and the likelihood of spontaneous resolution. It should also distinguish between acute pancreatic pair of liquid accumulation and acute complicated PC. Acute parapancreatic fluid accumulation should be considered liquid accumulation wrong shape, situated in the Software surrounding anatomical spaces (at least within the fabric software) and does not have a clearly formulated capsule. Acute complicated PC – is parapancreatic liquid accumulations around which has formed thin fibrous capsule and granulation [3, 4]. Thus, increasing the number of patients with acute complicated PC, the large variety of methods surgeries, including mini-invasive, no single view on the timing and types of surgeries confirm the urgency of this problem and provide grounds for finding new advanced algorithms for diagnosis and treatment with this disease.

Materials and methods. The results of surgery of 70 patients with acute complicated PC software for the period from 2010 to 2016, including men – 78% women – 22% aged 21 to 79 years, an average of 43,3 ± 1,2 years. All patients fulfilled clinical methods generally blood and urine biochemical blood tests are also used instrumental methods, ultrasound, computed tomography (with / without contrast), endoscopic fibrogastroduodenoscopy, endoscopic retrograde cholangiopancreatography, magnetic resonance computed tomography, laparoscopy, angiography, morphological methods (bacteriological, cytological, histological, histochemical and immunohistochemical). The diagnosis of acute pancreatitis set when the patient had two of the following criteria: characterized by pain in the abdomen; amylase and / or lipase in serum more than 3 times the upper level of the norm; X-ray and ultrasound data indicated the presence of acute pancreatitis. Patients were classified according to recommendations [8], which provide

for the allocation of three degrees of severity of acute pancreatitis: mild, moderate and severe, and includes determining transient organ failure, permanent organ failure, and the presence of local or systemic complications. Transient (persistent) organ failure lasts up to 48 hours, and constant – more than 48 hours. Acute complicated PC defined as encapsulated accumulation of fluid from the formation of well-defined fiery wall, usually located outside the body with minimal volume or lack of necrotic tissue, which occurred after 4 or more weeks of acute pancreatitis. The diagnosis of acute complicated PC installed on the basis of additional methods of examination, including ultrasound and computer tomography.

Results and discussion. One of the modern development concepts PC is a concept of its origin as a result of acute necrotizing pancreatitis as a result of a specific mechanism of "separation duct", where parenchyma necrosis isolated neck or body isolated from viable distal pancreatic cancer, but these studies should be extended for evidence [8]. The diagnosis of acute complicated PC installed on the basis of additional methods of examination, including ultrasound imaging (fig.1) and a computer tomography (fig.1).

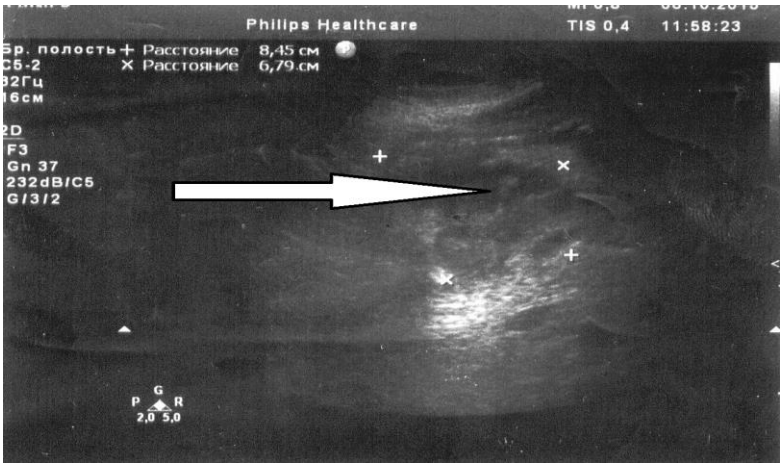

Fig.1. Acute pancreatic pseudocyst (ultrasound visualization)

Fig.2. CT-scan visualization: 1 – acute pseudocyst of pancreas, 2 – parenchyma of pancreas, 3 – increasing Virsung's duct

Acute PC defined as complicated, in the presence of infection, perforation, bleeding, jaundice, compression of the gastrointestinal tract. Having confirmed infected PC used bacteriological research culture, which was at the time of surgery or percutaneous puncture drainage in the PC controlled ultrasonography. PC complicated by gap with cystic contents leaking into the abdominal cavity was diagnosed with acute pain start, using ultrasound and / or a computer tomography (presence of free fluid in the abdominal cavity in patients with previously found PC software) as well as the emergence of peritoneal signs. Perforation PC software from leaking its contents in the gastrointestinal tract as determined in the cavernous body drainage and endoscopic fibrogastroduodenoscopy, endoscopic retrograde cholangiography, X-ray examination of the alimentary canal or during surgery. Bleeding into the cavity defined PC software with ultrasound or intraoperative hemolyzed the presence and / or leakage of fresh blood. Obstructive jaundice determined at higher levels of total bilirubin and its fractions, as well as ultrasound, computer tomography or intraoperatively. The presence of compression of the alimentary canal PC software defined on the basis of dyspeptic manifestations of the syndrome in a patient, and according endoscopic fibrogastroduodenoscopy, endoscopic retrograde cholangiography, X-ray examination of the alimentary canal or during surgery. The average sizes of PC software were within 10.28 cm (6 to 18 cm). Complicated acute PC software on a background of acute pancreatic necrosis found in 12 (17.2%) patients. Acute PC software with

suppuration were observed in 31 (44.3%) patients, bleeding into the cavity of the PC software in 13 (18.6%), perforation of the PC software of – peritonitis in 8 (11.4%), festering and bleeding – cavity PC software in 3 (4.3%), jaundice – in 8 (11.4%), compression of the stomach or duodenum – in 7 (10%). For the treatment of patients with acute complicated PC software we have proposed the following algorithm. In patients with organ dysfunction (SOFA > 8) and / or with high surgical risk ASA ≥IV (American Society of Anesthesiologist) for the purpose of expectant management performed percutaneous or endoscopic drainage of PC software. This approach has been developed for managing sepsis or to improve the general condition of the patient required further use of open surgery on the pancreas. Patients with symptoms of acute abdomen, confirmed at ultrasonography examination and / or computer tomography, computer software and breaks leaking their contents into the abdominal cavity percutaneus drainage performed, to form external pancreatic fistula. Patients with PC software without organ failure or organ dysfunction, moderate (SOFA 3 to 8), and patients who could move the surgical risks laparotomy was performed with surgical treatment of the cyst cavity, and further, the formation walls forming cystoenteroanastomosis. Patients with PC software with thin walls served their external drainage cavities with additional tamponade large bonnets.

In patients with acute PC software, complicated obstructive jaundice, 6 cases of puncture performed under ultrasound control, in order to decompress extrahepatic bile ducts, including 2 patients after the reduction of total bilirubin in serum and stabilization of the general state cystopancreatoenterostomosis done. In 2 patients with acute PC software, complicated obstructive jaundice, cystopancreatoenteroanastomosis imposed without prior puncture computer controlled ultrasound after conservative treatment and the formation of the wall. In 5 patients with acute PC software squeezing the stomach or duodenum, performing puncture PC software controlled ultrasonography, including 2 patients after failure of puncture under ultrasound control to establish drainage cavity of PC for the type «pig tail» (fig.3).

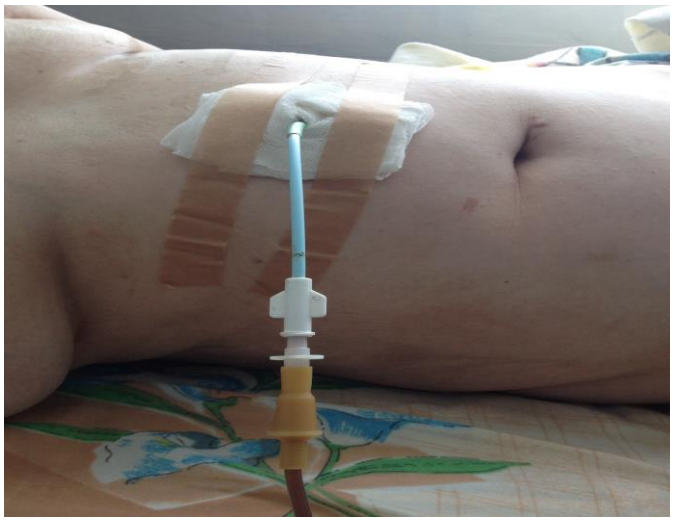

Fig.3. External drainage cavity of acute pancreatic pseudocyst for the type «pig tail»

In 2 patients without organ dysfunction (SOFA <3) or with moderate dysfunction Authority (SOFA 3 to 8) laparotomy was performed with the formation cystopancreatoenteroanastomosis after conservative treatment and the formation of the wall. In 15 patients with infected PC software do them puncture under the control of ultrasound, including 2 patients after failure of puncture, performed by external drainage of software PC controlled ultrasonography with the installation of drainage for the type «pig tail» for their organs, and 1 patient imposed cystopancreatoenteroanastomosis after conservative treatment and the formation of the wall PCs. In 9 patients with limited pancreatic necrosis and the presence suppuration of acute software PC with external drainage operation includes PC following suturing of the abdominal cavity, including 2 patients accompanied drainage cavity tamponade large PC bonnets by methodology clinic (fig.4).

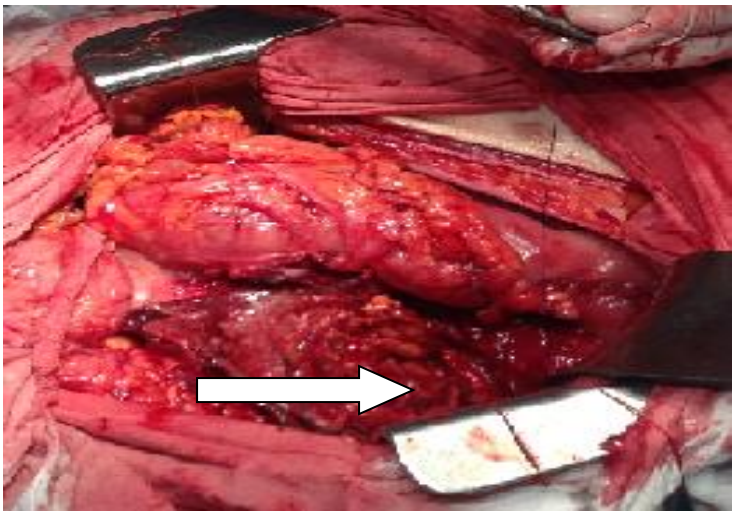

Fig.4. Cavity of acute pseudocyst tamponade for large bonnets

In 1 patient with advanced pancreatic necrosis and infected the PC software laparotomy performed followed by external drainage cavity PC and its biological tamponade large bonnets by the method of forming omentobursostomy by methodology clinic. In 5 patients performed pancreatonecrsecvestrectomy, including 2 patients completed the formation omentobursostomy operation. In 1 patient with pancreatic infected PC software and widespread peritonitis transaction completed sanitation and drainage of the abdominal cavity with the formation omentobursostomy. When bleeding into the cavity of the PC software in 7 patients completed puncture PC with ultrasound visualization, in 2 patients with subsequent spleen artery embolization hagiographic. In 2 patients, and bleeding into the cavity of the PC software performed laparotomy with tamponade necrsecvestrectomy and biological cavity large bonnets and PC formation omentobursostomy. In 1 patient with multiple PC software with perforation, peritonitis widespread and recurrent bleeding from vessels arosive PC performed "forced" gastropanreatoduodenectomy with external drainage of the main pancreatic duct and the common bile duct and drainage of the abdominal cavity by Petrov. After stabilization of the patient, in a second stage performed relaparotomy, pancreatoenterostomy and choledohoenterostomy on "lost" drainage, lavage, and drainage of the abdominal cavity by Petrov. Mortality in acute complicated PC software was 3.4 %. Before the death of patients caused severe sepsis syndrome and the development of multiple organ failure, and recurrent bleeding from arosive vessels software.

Conclusions. Acute complicated PC arising after the attacks acute pancreatitis requires special attention to their diagnosis and treatment. In patients with acute complicated PC software and multiple organ failure, percutaneous drainage is performed to expectant management, to facilitate the general condition of the patient and sepsis. Implementation of radical surgery on the software depends on the severity of the patients, the prevalence of pancreatic necrosis and its severity.

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