

Case report

RADICAL CURRATIVE DUODENOPANCREATECTOMY-WHIPPLE PROCEDURE FOR DISTAL CHOLEDOCHUS CARCINOMA IN A PATIENT WHO PREVIOUSLY SUFFERED AND WAS SURGICALLY TREATED FOR ACUTE NECROTIZING PANCREATITIS ERCP RELATED: CASE REPORT

РАДИКАЛНА КУРАТИВНА ДУОДЕНОПАНКРЕАТЕКТОМИЈА-ВИПЛОВА ПРОЦЕДУРА ЗА ДИСТАЛЕН ХОЛЕДОХУС КАРЦИНОМ КАЈ ПАЦИЕНТ КОЈ ПРЕТХОДНО БОЛЕДУВАЛ И БИЛ ХИРУРШКИ ТРЕТИРАН ЗАРАДИ АКУТЕН НЕКРОТИЗИРАЧКИ ПАНКРЕАТИТИС КАКО ПОСЛЕДИЦА НА ЕРЦП: ПРИКАЗ НА СЛУЧАЈ

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Abstract

Possibility and eligibility of patients suffering post-ERCP-intervention related to acute necrotizing pancreatitis for elected two-stage surgery for successive and successful treatment of both stages of the disease: acute necrotizing pancreatitis and distal cholangiocarcinoma.

A patient with post-ERCP acute necrotizing pancreatitis was admitted to our Clinic. The indication for ERCP was jaundice caused by distal cholangiocarcinoma. After conservative treatment, the patient underwent surgery. We performed Beger procedure for acute pancreatitis, necrectomy, cholecystostomy, ileostomy, feeding jejunostomy. After the patient survived the course of acute necrotizing pancreatitis with peroral alimentation, we connected both stomas, cholecystostomy with jejunostomy, retrieving extracorporeal biliary bypass. At the appropriate time he was readmitted and reoperated due to distal cholangiocarcinoma. Whipple procedure was done, along with right hemicolectomy, and complete reconstruction. Concerning the hostile environment of the operative site, the onset of postoperative pancreatic A fistula was not a surprise. However, the patient survived the morbidity of the second operation and was dismissed on the 10th postoperative day, in a good general condition.

The patient's disease-free postoperative survival has been more than 36 months after the second operation. According to clinical trials, the ERCP is rarely but inevitably associated with complications such as intervention-related acute necrotizing pancreatitis. Thus, the indication should be carefully concerned, with alternative of direct surgery if feasible and recommended. But, in clear indication, ERCP is a sovereign procedure for diag-

nosis and temporary treatment of biliary obstruction, in order to improve the preoperative status of the patient, as well as the operative and postoperative outcome. Finally, if post-ERCP acute necrotizing pancreatitis occurs, and if it demands a surgical treatment, as a conclusion, we suggest it to be a two-stage surgery.

Keywords: ERCP, acute necrotizing pancreatitis, distal cholangiocarcinoma, duodenopancreatectomy, necrectomy, cholecystostomy, jejunostomy, survival

Абстракт

Можност и пригодност на пациентите кои страдаат од постинтервенциски пост ЕРЦП акутен некротизирачки панкреатитис е да добијат sukcesивен и успешен хируршки третман на обете фази на болеста: Акутен Некротизирачки Панкреатитис и Дистален Холангиокарцином.

Пациент со акутен некротизирачки панкреатитис после ЕРЦП беше примен на нашата клиника. Индикацијата за ЕРЦП беше жолтица предизвикана од дистален холангиокарцином. После приемот и конзервативен третман, пациентот беше подложен на хируршки третман. Направивме Бегерова процедура за акутниот некротизирачки панкреатитис: некректомија, холецистостомија, илеостомија, фидинг јејуностомија. Откога пациентот го преживеа акутниот панкреатитис, со перорална исхрана, ги поврзавме обете стоми-холецистостомата и јејуностомата и добивме екстракорпорален билијарен бај пас. После соодветен период тој беше рехоспитализиран и реопериран поради дисталниот холангиокарцином. Беше направена Виглова процедура, проширена со десна хемиколектомија, со комплетна реконструкција. Поради лошиот наод и неблагодарната средина на оперативното поле, постоперативната панкреатична фистула А не беше изненадување. Сепак, пациентот

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ја надмина оваа состојба и беше отпуштен 10 постоперативен ден во добра општа состојба.

Досега пациентот има 36 месечно преживување-период без повторна појава на болеста.

Според клиничките иследувања, ЕРЦП е ретко но неизбежно поврзана со компликации, како што е интервенциски поврзан акутен некротизирачки панкреатитис. Затоа, индикацијата за ЕРЦП треба да биде внимателно разгледана, со алтернативна можност за директна хирургија, доколку е возможна и препорачлива. Но, со јасна индикација, ЕРЦП е суверена процедура за дијагноза и времен третман за билијарната обструкција, во намера да се подобри преоперативната состојба на пациентот, како и оперативниот и пероперативниот исход. На крај, доколку дојде до пост ЕРЦП акутен некротизирачки панкреатитис, и ако таа состојба бара хируршки третман, како заклучок, ние препорачуваме тоа да биде хирургија во 2 фази.

Клучни зборови: ЕРЦП, акутен некротизирачки панкреатитис, дистален холангиокарцином, дуоденопанкреатектомија, некретомија, холецистостомија, јејуностомија, преживување

Introduction

Patients with obstructive jaundice are usually referred to GEH for establishing the correct diagnosis. Subsequently, after US and optionally EUS, an ERCP and eventually stenting are indicated. Besides all the improvements in the recent time, the ERCP and stenting have maintained as methods with a certain risk of an intervention-related complications [1,3,4]. One of the major and most undesirable complication, in addition to cholangitis, is the post-ERCP acute pancreatitis, or postinterventional acute pancreatitis. The course of this pancreatitis can be either a mild clinical form with interstitial pancreatitis or an acute necrotizing pancreatitis. This intervention related to acute necrotizing pancreatitis (IRANP) usually takes a severe course, demanding full treatment and management in the ICU, with a daily follow-up. In the past it unavoidably demanded a surgical treatment, but recently with A Step-up Approach, interventional radiological procedures have been implemented, sufficiently solving the problem. But, if the conservative methods do not provide a solution to the issue, then invasive surgical treatment should be considered. Thus, in certain cases of acute necrotizing pancreatitis, the surgery can and should be performed in order to manage the acute state of the disease-IRANP by implementing the most appropriate procedure, and it is a life-saving procedure at the moment. At the time dealing with acute necrotizing acute pancreatitis, we concern it is not feasible and permissably to conduct surgery for the primary disease like the carcinoma of

the distal choledochus is. There are at least 2 reasons for such an attitude, the general state of the patient-poor outfit performance, either the local necrotizing status of the pancreas and the hostile operative site. In our case, we conducted a double-two stage surgery and hospitalization treatment.

Case report

We present the case of a 45-year-old patient, suffering from jaundice, with total bilirubin level of 375, pain in the superior right abdominal quadrant, nausea and vomiting, dark urine and itching. He was previously referred and admitted to the University Clinic for Gastroenterology. After the preliminary investigations, he underwent US, discovering distal-supraampulary obstruction of hepatocholedochus-suspicious distal cholangiocarcinoma, causing biliary and pancreatic duct obstruction. The diameter of choledochus was 17 mm, with proximal dilatation of the complete biliary tree. The diameter of the main pancreatic duct (MPD) was 5 mm. A clear indication for an ERCP was estimated [1,4] and it was performed after the routine preparation examination (1 day with no peroral administration of food, coagulation probe, etc). During the ERCP, papillotomy was done, and instillation of a plastic stent.

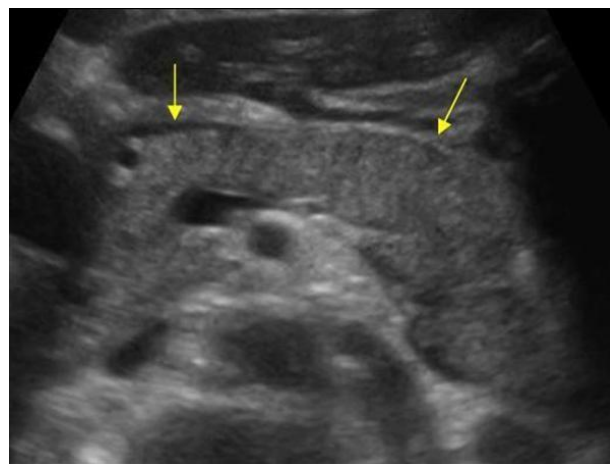


Fig. 1. Ultrasound of the IRANP with peripancreatic fluid

The next day the patient felt abdominal pain in the epigastrium, discomfort, fever (39°C), nausea, vomiting. The immediate investigations, US, CT, laboratory tests, confirmed the onset of an acute pancreatitis. Laboratory investigations showed leukocytosis 19.7, serum amylasemia 2813,4 U/l, CRP 328. The patient was admitted to the Gastroenterology ICU, with a continual control and estimation of the condition. Complete parenteral nutrition and substitution were undertaken, intravenous administration of antibiotics, analgetics, sando-statin-octroide therapy. The revision duodenoscopy was performed, and the plastic stent was removed. Despite all undertaken measures, the patient condition gradually and continually declined. The control US

performed on the 6th postinterventional day confirmed IRANP, with peripancreatic fluid (Figure 1). The control contrast enhanced angio-CT scan, done on the 8th day after the onset of the disease, presented the severity of the disease by Balthazar, the scale of the necrosis of the gland. By CTSI (CT severity index), it was grade E, 4 points, (2 peripancreatic fluid collections), with pancreatic necrosis >30-50%, also 4 points, overall 8 points on the Baltazar-Ranson scale [2], indicating severe necrotizing pancreatitis (Figure 2).

On the 4th day of the onset of the disease, the patient manifested respiratory insufficiency, hence, he was relocated to the surgery ICU, and was applied mechanical ventilation. At this stage of the disease, first we

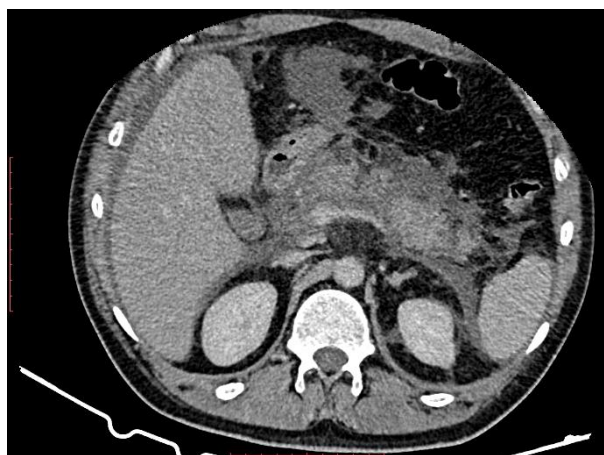


Fig. 2. CECT scan of the necrotizing pancreatitis, Baltazar-Ranson scale 8.

had to manage the acute disastrous necrotic pancreatitis, and then the basic problem-distal cholangiocarcinoma. On day 19 of the disease, we repeated the CECT scan, and confirmed the previous finding, with slightly brighter boundaries of the pancreatic necrotic tissue.

Four weeks after the ERCP, the patient continued to prostrate, although the FNP/FNA and the bacteriology hemoculture were negative, suggesting absence of infected pancreatic necrosis (IPN) [8,9]. He started to present with multiorgan failure syndrome, manifested with oliguria and high nitrogen values in the blood sample, increasing jaundice and liver enzymes, pleural effusion, cardiovascular instability. It was the key moment to think about the further course of management, and the attitude for surgical treatment prevailed. The decision was reached because we had in mind the worsening of the patient condition due to autointoxication from the pancreatic necrosis.

The surgery was performed the next day, and the classic procedure for acute necrotizing pancreatitis was done [7-10]. First of all, opening of the lesser sac, evacuation of the fluid and necrosectomy were made. Technically, the procedure was executed with blunt digitoclasia and flushing with saline solution. We did cholecystostomy with a Petzer tube installed as a decompression of the

biliary trunk. Then we created ileostomy to exclude the colon, and thus to prevent bacterial discharge to the portal vein and the surrounding necrotic tissue. Afterwards, we made a nutritive jejunostomy to provide a postoperative enteral nutrition. At the end, we chose closed package system for the abdominal cavity, with wide local drainage with 4 big caliber tube drains. The aim was to obtain the imposed postoperative irrigation and flushing of the site.

Postoperatively, the patient stayed in ICU for 2 weeks. Besides the intensive care treatment, the local treatment, irrigation and flushing through the drains with 20 l per day, was the essential part of the management. In 2 weeks, the patient recovered, and was transferred to stationary. The second postoperative day, we established enteral feeding through jejunostomy. On the eighth day after surgery, peroral alimentation was started. After 3 weeks, the drains decreased secretion less than 50 ml, and were extracted. Continual assessment on a daily basis was carried on, and the prosper towards well condition imposed the observation about the variant further steps. Because the maintained distal cholangiocarcinoma, the cholecystostomy was high outlet biliar fistula, over 1200 ml/day. This led to maldigestion, diarrhea and anorexia, which was overcome with parenteral superalimentation.

During the third week, we connected both external fistulas, the cholecystostomy and the jejunostomy drains. The result was an extracorporeal biliary bypass, resolving the problem of maldigestion, malnutrition, anorexia, steatorrhea and creatorrhea. All conditions for anabolism were provided, despite the present malignancy in the GIT. The patient was dismissed home after 4 weeks.

After 7 weeks, altogether 3 months after the initial surgery, the patient was readmitted to our Clinic. The control CT and gastrografen passage of the GIT were done. On the third day the patient was reoperated. A radical pancretoduodenectomy (PD) was performed, along with compelled right hemicolectomy (Figure 3). After such a course of the disease and complications, locally the operative site was a harsh environment for meticulous dissection, and the accurate identification of the mesocolic vessels in the inflammatory perineoplastic desmoid was impossible, leading to right hemicolectomy. During surgery, the cholecystectomy, hemigastrectomy, choledochectomy, jejunectomy were done as well as closure of the jejunostomy. Postoperatively, the patient had pancreatic fistula, low outlet, type A, without significant influence on the global outcome. On the ninth postoperative day, the fistula diminished and the drain was removed. Ten days postoperatively, the patient was discharged home, with good outfit performance/in a good general condition?

Long-term survival results over 3 years so far are: absence of malignancy recurrence, disease-free life, controlled with US and CICT scan by protocol, tumor markers, CEA, CA 19-9, VEGF.

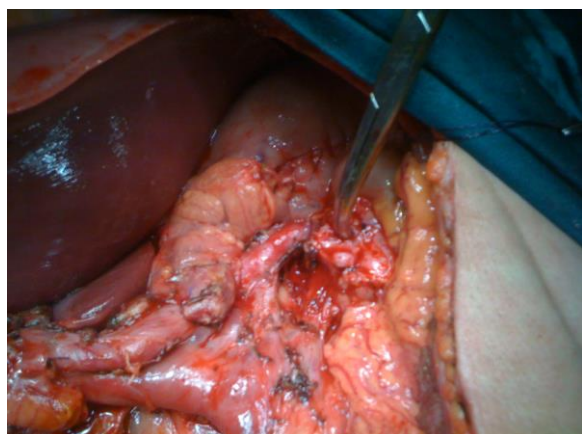


Fig. 3. Whipple procedure, after patient suffered necrotizing pancreatitis, still with perivascular phlegmonous inflammation

Discussion

According to the literature and numerous large clinical trials conducted, the 30-day complication rate after ERCP is about 16% (15.9 %), with a procedure-related mortality of 1% [3-7]. The most dangerous complications leading to death are acute post-ERCP pancreatitis and cholangitis [3]. Further than that, in the USA for 13 years over 6.5 million ERCP procedures were made, with reported only 14 intervention-related deaths, confirmed at autopsy [5]. Regarding these statistical data, majority of the patients suffer interstitial pancreatitis-pancreatic edema, which decreases conservatively, and patients recover in a short period of time. Therefore, this group of patients, recently underwent curative Whipple duodenopancreatectomy [11]. Another issue, and a real challenge for management are patients developing post-ERCP ANP.

One clinical study conducted at the Mayo Clinic revealed 8% of patients with ANP (6 from 72) treated surgically, who were initially submitted to ERCP, which was the cause for IRANP. Furthermore, this group of post-ERCP patients had a higher APACHE II score at admission, either higher percentage of pancreatic necrosis, also, higher percentage of infected pancreatic necrosis (IPN), 100 vs. 75%. Mentioning the further post-operative course, morbidity was higher in this group: pancreatic and enteric fistula were more often in the group related to ERCP: 50 vs. 33%. However, the comfort could be the lower mortality in this IRANP group, 17 vs. 29% [10,11,12]. So, caution is necessary because "ERCP is most dangerous to those who need it the last".- Peter Cotton.

One large retrospective clinical trial from Germany has enabled us to compare the ANP non-related to ERCP on one hand, and IRANP on the other hand (8,10,). Namely, this study demonstrated that 42% of patients with acute pancreatitis had necrotizing disease, while two thirds, 66%, had sterile and 34% suffered IPN; these rates were lower than in IRANP. Also, there was

significant mortality distinction between these two groups: 1.8% in the group with sterile necrosis vs. 24% in the group with IPN ($P<0.01$). The overall mortality rate of ANP was 12% (7 from 86 patients) [8,9]. This also suggests higher mortality in ANP non-related to ERCP than in IRANP.

Our patient had a clear indication for ERCP, due to the prolonged biliary obstruction-for more than 10 days, high levels of total bilirubin-375 mmol/l, AP, CK, SGOT, SGPT, low level of serum albumin, hemostasis disorder, edemas, oliguria, all suggesting liver damage and insufficiency. Therefore, the management of choice was ERCP and control with normalization of the jaundice and recovery of normal liver function previously to extensive surgery as Duodenopancreatectomy is... Discussing the course and the outcome of the ANP, and the IRANP included in this group, we could confirm it is with a severe course and dubious prognosis [6]. So far, the correlation between the degree of necrosis and the mortality has been confirmed in the literature. The patients with necrosis over 50% of the gland are disposed to a high mortality rate, over 40% [7]. The high mortality rate is reported even in a high-volume centers dealing with this problem. The indication for surgical treatment of the ANP, including IRANP, should be concerned individually, although there are protocols concerning this issue. FNP/FNA for distinction of IPN, is a "formal indication" for surgery, but in circumstances when IPN cannot be proven, the condition of the patient itself may be the main criterion for the course of the treatment which is going to be undertaken.

For further treatment of our patient, the timing was one of the pitfalls emerged by the existing malignancy. Namely, surgery after ANP is both demanding and dangerous, associated with a high risk of complications and undesirable outcome. On the other hand, delayed surgery decreases the prognosis for long term expected life concerning the presence of malignancy.

Conclusion

In conclusion, if correctly indicated, the ERCP is a safe and sovereign procedure for diagnosis and temporary treatment of jaundice caused by malignancy in the periampullary region. In addition, some adverse events, like cholangitis and IRANP, might appear [10-12]. If IRANP occurs, it is a serious multidisciplinary issue, demanding a complex procedure to be engaged. Therefore, according to our opinion, this status should be solved in two stages: first, dealing with the IRANP, and then radical surgery for malignancy. This should be the best way to avoid the high risk affecting one stage surgery dealing with this binary problem.

Conflict of interest statement. None declared.

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