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Research Article

MANAGEMENT OF THE BILE DUCT AFTER IATROGENIC INIURY

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ABSTRACT

Introduction: Reconstruction of the biliary tract is a necessary surgery in many diseases such as surgical palliation in malignant biliary obstructions, or repair after bile duct injury due to iatrogenic causes and for other miscellaneous diseases because a series of concomitant complications is associated with biliary loss, including the formation of intra-abdominal abscesses that can frequently determine mortality In the present study the prognostic factors of biliary loss were studied, with particular attention to the impact of surgical bypass. **Materials and Methods:** The study included n 41 all patients observed since January 2003 and December 2013 at the polyclinic AOU University of Catania DPt general surgery and specialist II of which 12 males and 29 females average age 62.5 years (35-90). affected by perforaton of the duodenum or lesions of the biliary tract of the middle and proximal choledochus. Signs and symptoms included abdominal pain, dyspnoea, tachycardia, fever (O39.5 C),. the presence of bile was demonstrated radiologically in the pelvic excavation for more than 24 hours after endoscopic treatment. And the perioperative predictive factors were then analyzed by comparing the two groups of patients with and without biliary surgical bypass to determine which variables were significant for the success of the surgical treatment **Results:** In the first group of patients with duodenal micro perforation and biliary leak that occurred after they had undergone an endoscopic sphincterotomy. The analysis of the results showed how conservative therapy with the application of the PTDA procedure with the application of abdominal drainages and the derivation of the bile duct, with the closure with the application of endoclip on the duodenal perforation, associated with the intake of antibiotics and the maintenance of positioned trans-cutaneous discharges, with fasting and NPT that allowed to resolve the bile losses after a mean hospital stay of 60 days In patients with a wider duodenal perforation, with concurrent lesion of the middle and terminal choledochus, and with a loss biliary that after 24 hours was significant so as to form a bile collection and intra-abdominal abscesses it was preferred to implement an interventional surgical management. In performing a laparotomy in these patients, bile collection drainage was performed with abdominal lavage until the abdominal cavity was cleared of all debris. To all this was associated the jejunal loop repair and the execution of a biliodigestive derivation.
Discussion: The present study showed that a clinically relevant biliary leak after hepaticodigunostomy, and biliary drainage with PTDA occurred after the anastomosis was performed on the segmental ducts that are independent predictors. Early PTDA is a safe and adequate treatment strategy, in patients who had biliary losses within 24 hours e. the rate of relaparotomy has decreased significantly. Confirming as for other authors that the proximal bile duct resections had the highest incidence of leakage. The rate of loss after a bileodigestive bypass procedure for palliation or obstructive jaundice treatment was low, (2%) The surgical palliative of the bile digestive bypass remains an adequate procedure in an unresectable disease **Conclusions:** The procedures of bile digestive bypass in association with PTDA remain in unresectable neoplasms of the biliary tract a main and safe indication, integrating and ensuring the possibility of carrying out complementary therapies.

INTRODUCTION

Biliary tract reconstruction is a necessary surgery in many diseases such as surgical palliation in malignant biliary obstructions, or repair after biliary duct injury due to iatrogenic causes and other miscellaneous diseases because a series of concomitant complications is associated with biliary loss, including the formation of intra-abdominal abscesses that can frequently cause mortality. (1,2,3,4,5) Iatrogenic lesions with biliary losses can affect the hilar site, or the middle choledochus, or the distal bile duct.and are managed or with an endoscopic treatment, or with a surgical bypass, or as a first step from percutaneous drainage under ultrasound or computed tomography (PTD) become the latter a less invasive alternative., is contributing to a change in the management of these patients. (6,7,8,9,10) endoscopic treatment with stent placement is considered first-line but presents complications in stent replacement or apposition, as well as PTD useful in the first phase of biliary loss treatment. In the present study the prognostic factors of biliary loss were studied, with particular attention to the impact of surgical bypass (11,12,13)

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PATIENTS AND METHODS

The study included n 41 all patients observed since January 2003 and December 2013 at the polyclinic AOU University of Catania DPt general surgery and specialist II of which 12 males and 29 females average age 62.5 years (35-90). affected by perforaton of the duodenum or lesions of the biliary tract of the middle and proximal choledochus. Signs and symptoms included abdominal pain, dyspnoea, tachycardia, fever (O39.5 C) ,. the presence of bile was demonstrated radiologically in the pelvic excavation for more than 24 hours after endoscopic treatment. The diagnostic procedures were a chest x-ray to evaluate a possible pleural effusion, abdominal ultrasound, computed tomography and percutaneous transhepatic cholangiography (PTDA) with drainage apposition that showed the outflow of the contrast medium from the duodenum and abdomen. Patients who developed a biliary leak were divided into two groups to analyze the change in the management of these complications. In the first group the loss was initially treated by limiting oral intake and total parenteral nutrition and maintenance of drainages depending on the procedure. The first percutaneous drainage for fluid collections was generally performed when the patient developed concomitant intra-abdominal abscesses. PTDA percutaneous transhepatic biliary drainage was applied for biliary derivation in the presence of small biliary and duodenal perforations. Access to the biliary tree was obtained through the left or right intrahepatic bile ducts. With ultrasound and fluoroscopic guidance, a bile duct was perforated with a 21-gauge needle and its position was confirmed with the injection of a small volume of contrast material. A guide wire was inserted through the needle into the bile duct and a cannula was passed over the guide wire (Fig. 1).

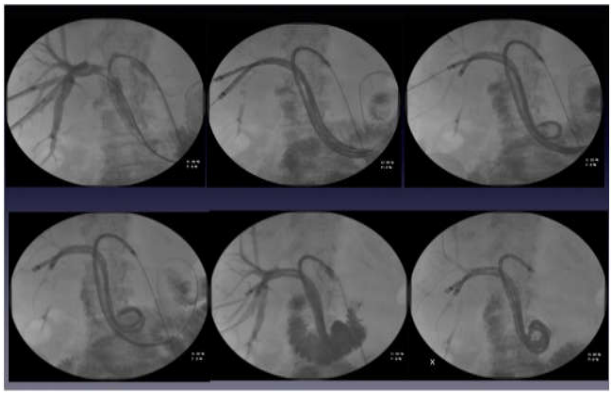

Fig 1 internal lining

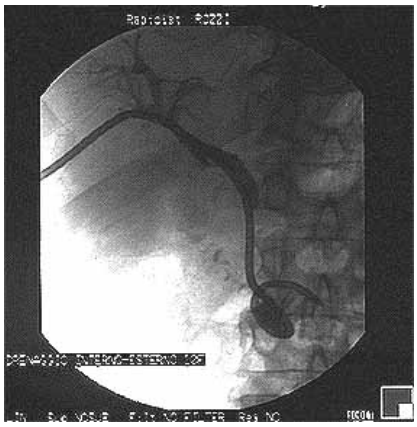

Fig 2 internal-external drainage

above this wire was placed a 10F polyethylene drainage catheter in the bile ducts, thus draining the bile (Fig. 2). Bile was drained externally leaving the biliary and jejunal perforation to heal. .In patients with a wider duodenal perforation, with concomitant lesion of the middle and terminal choledochus, and with a biliary leak that was significant after 24 hours to form a bile collection and intra-abdominal abscesses, interventional surgical management was preferred. In performing a laparotomy in these patients, bile collection drainage was performed with abdominal lavage until the abdominal cavity was cleared of all debris. To all this there was associated the jejunal loop repair and the execution of a biliodigestive derivation with a choledocho anastomosis. in Y, (12 cases 29%) and an intrahepatic anastomosis ds and sn (18 cases 61.1%) carried out in the presence of lesions of the middle, hilar and terminal choledochus and using Vicryl sutures with a 3-0 layer depending on the size, and the level of the anastomosis of the bile duct. Occasionally drainage catheters left in place during surgery were then used. And perioperative predictive factors were then analyzed by comparing the two groups of patients with and without biliary surgical bypass to determine which variables were significant for the success of the surgical treatment

RESULTS

In the first group of patients(30%) with Duodenal small perforation and biliary leak that occurred after they had undergone an endoscopic sphincterotomy. The analysis of the results showed how conservative therapy with the application of the PTDA procedure with the application of abdominal drainages and the derivation of the bile duct, with the closure with the application of endoclip on the duodenal perforation, associated with the intake of antibiotics and the maintenance of positioned trans-cutaneous discharges, with fasting and NPT that allowed to resolve the biliary losses after a mean hospital stay of 60 days, but in patients over 75 years the biliary loss caused a metabolic imbalance that led to the death of patients (in 3 cases - 7.5%). The remaining 35% required a drainage intervention of the periephatic abscess that developed on average after 40 days which required an extension of the treatment on average a further 30 days. in the second group of patients(35%) the therapeutic strategy was based on one was surgical interventional, and consisted in the packaging of the bile digestive anastomoses judged sufficient to reduce the bile losses. the search for predictive factors associated with bile loss after hepatic fasting ostomy (2%) were analyzed which included: age, sex, comorbidity, type of anastomosis, technique of anastomoses, type and size of sutures, previous abdominal surgery, presence of jaundice and . Size of the bile duct. The predictive factors related to identification the increased risk of failure was: the type of bile digestive anastomoses, the amount of biliary loss> 400 ml for 24 hours after the procedure or at the time of diagnosis, and a combination of the following clinical signs: pyrexia (64%) , tachycardia (60%), increased abdominal pain (542%), peritoneal tenderness (63%) and leukocytosis (63%). Ultrasound detected 95% abdominal collection. Back hepatic site. PTDA was performed in 69% of patients within 24 hours of the onset of biliary leakage. Access to the biliary tree was obtained through a right intrahepatic bile duct (60%) or left (40%). There were no complications related to PTDA. There was instead a significant decrease in both the

rate of relaparotomy (for all indications) for the entire time frame of the present study, and of the Endoscopic biliary drainage.

DISCUSSION

The present study showed that a clinically relevant biliary leak after hepaticodigunostomy, and biliary drainage with PTDA occurred after the anastomoses was performed on the segmental ducts that are independent predictors. (14,15.16.17.18) The early PTDA is a safe and adequate treatment strategy. In patients who had biliary losses within 24 hours e. the rate of relaparotomy has decreased significantly. Confirming as for other authors that the proximal bile duct resections had the highest incidence of leakage. (19.20.21.22) The rate of loss after a biliary digestive bypass procedure for palliation or obstructive jaundice treatment was low, (2 %) The surgical palliative of the bile digestive bypass remains an adequate procedure in an unresectable disease (23,24,25,26,27) The independent risk factors associated with the loss were, endoscopic biliary drainage because endoprosthesis induces secondary inflammation of the bile ducts, which in turn causes considerable fibrosis in addition to the piercing risk of the procedure in affixing the stent and the anastomoses on the segmental bile ducts (28.29,30,31,32) which is obviously more technically demanding than the anastomoses on the common hepatic duct. Therefore, segmental anastomoses should be avoided whenever possible. (33,34,35,36) There is also a controversy over whether or not sub-hepatic drainage is necessary. show no benefit in their actual ability to detect leaks at an early stage in contrast increase the risk of ascending infection associated with these drains. (37,38,39,40) The application of PTDA through anastomoses offers the possibility of internal / external biliary drainage, leaving the anastomoses to heal and prevent further bile accumulation and abscess development (41,42,43 , 44,45) When the latter is performed, the left hepatic duct is preferred because the sub-xiphoid pathway used is less painful than the intercostal by used to approach the right hepatic duct, and because a puncture to the left duct is less likely to transgress the pleural space. the selection of patients finally reduces the rate of possible complications (46,47,48,49) to inside operative exploration a neoplasm considered resectable should instead be advanced. Despite the high spatial resolution of modern radiological techniques (TAC, Magnetic Resonance, Ultrasound with contrast medium), the diagnostic accuracy of preoperative staging is never safe. This possibility must always be considered, to the patient when signing the informed consent. In such cases of advanced tumor, the derivative interventions can be performed, in order to allow the execution of oncological therapies

CONCLUSIONS

Interventional radiology in the management of bile ducts plays an important role and reduces the use of the more aggressive endoscopy procedure with serious complications. The procedures of biliary digestive bypass in association with PTDA remain in the unresectable tumor of biliary tract a main and safe indication, integrating and ensuring the continuation of integrated therapies.

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