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Case Report

Management of a Type E3 Biliary Tract Trauma from Strasbourg: About a Case

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Abstract: Biliary lesions remain a serious complication of laparoscopic cholecystectomy. Although their reported incidence is less than 0.7%, the actual incidence likely remains underestimated. Some lesions go unnoticed for many years and are only revealed during late complications, such as secondary biliary cirrhosis. In addition, these lesions may incur the surgeon's medico-legal responsibility. We report the case of a 69-year-old man consulting for cholestatic icterus occurring three months after a cholecystectomy. The MRI confirmed the diagnosis of an E3 type lesion according to the Strasberg classification. After failure of endoscopic treatment, hepatic-jejunal anastomosis was performed. The objective of this observation is to illustrate the different stages and difficulties of managing a complex traumatic lesion of the main biliary tract.

Keywords: Iatrogenic trauma of the bile ducts, biliary repair, icterus, cholecystectomy.

INTRODUCTION

It is estimated that more than 750,000 laparoscopic cholecystectomies are performed each year in the United States, making it the most common abdominal procedure [1].

Among all types of biliary trauma, iatrogenic lesions occurring during a laparoscopic cholecystectomy are the most common. Unfortunately, these injuries lead to increased morbidity and mortality of patients [1], a significant financial burden in terms of hospital resources and a high number of malpractice disputes [2].

The vast majority of bile duct injuries occur during a laparoscopic cholecystectomy, errors leading to a bile duct injury in this context most often result from poor anatomical perception by the surgeon, rather than a lack of skill, of knowledge or judgment [3].

The more extensive lesions, of type D and E according to Strasberg's classification, require a biliary-enteric anastomosis for reconstruction.

We prefer hepaticojejunostomy in Roux's Y rather than a pediatric 5-F feeding tube used as a biliary endoprosthesis [1].

CASE

This is Mr. L.MO, 69 years old, type II diabetic and with an ischemic heart disease under treatment, having undergone a cholectomy 15 days earlier. It was sent to our department for the management of a cholestatic icterus, which appeared 10 days after the intervention.

The clinical examination revealed a hemodynamically stable patient with right hypochondriac tenderness and a fever of 39°C. There was also an incision under-right side, following a conversion secondary to the difficulty and laboriousness of dissection reported by the initial surgeon.

The patient's laboratory examination showed slightly impaired clotting with a TP at 77%, hyperleucocytosis at 12,000/mm3 and moderate anemia with hemoglobin at 10.8 g/dL. Platelets were normal at 290,000/µL. Renal function was preserved with a creatinine of 11 mg/L. Significant cholestasis was noted with total bilirubin at 34.25 mg/L and direct bilirubin at 25.78 mg/L, associated with moderate cytolysis (TGO 75 IU/L, TGP 65 IU/L) and a significant elevation of alkaline phosphatase at 892 U/L. Albuminemia was at 37 g/L. Viral serologies were negative for HBs antigen, HIV

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1/2, and anti-HCV antibodies, and lipase and amylasemia assays were normal.

The abdominal ultrasound showed a rounded cystic formation at the level of the vesicular bed and an expansion of the right and left bile ducts upstream of an echogenic material. The MRI confirmed a tight stenosis of the biliary convergence of Strasberg aspect (Figure 1). traumatic, corresponding to an E3 type injury according to the classification of Medical treatment was initiated, including antibiotic therapy and vitamin K supplementation. ERCP was attempted, but catheterization of the bile duct failed.

The pathological examination of the gallbladder was in favor of chronic subacute cholecystitis in flare-up. The angioscanner did not show any vascular abnormality in the hepatic artery or the portal vein.

Four weeks after the first intervention, a bile repair was performed. Surgical exploration confirmed the lesion with conservation of the biliary convergence roof. A termino-lateral hepatic-jejunal anastomosis was performed on a 70 cm Roux Y-mounted loop.

The post-operative outcome was favorable, with an authorized release on day 10.

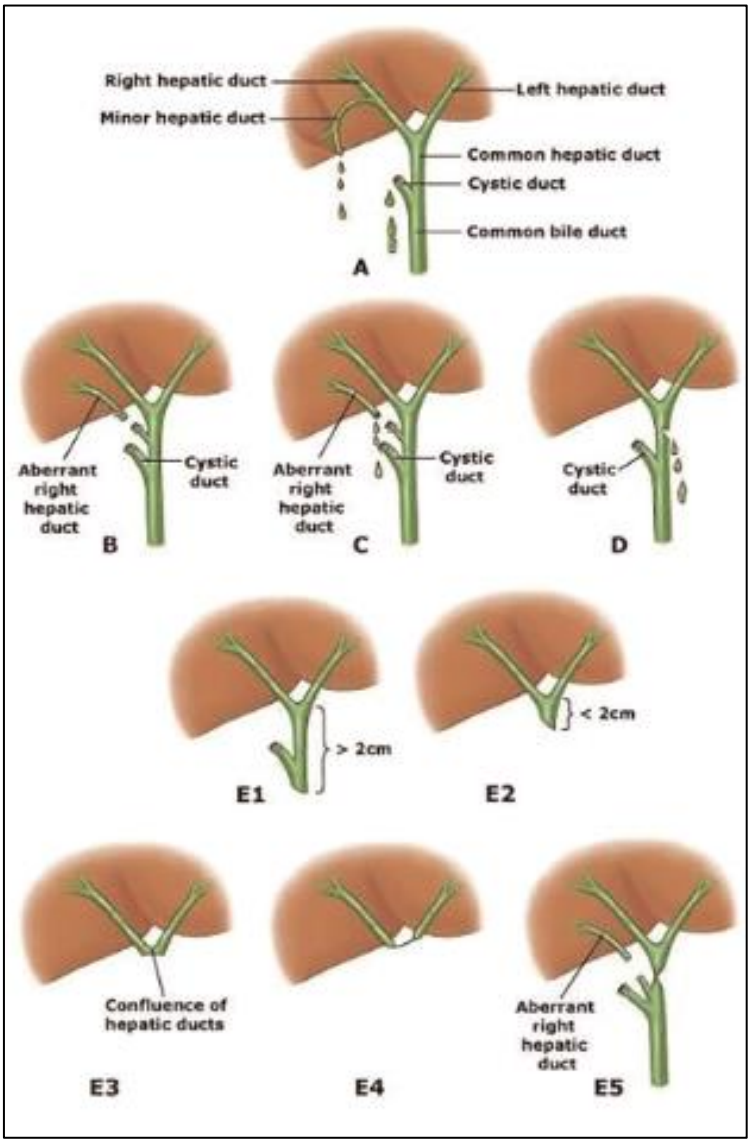

Figure 1: The Strasberg classification

DISCUSSION

Although the Strasberg and Bismuth classifications are most commonly used to identify iatrogenic trauma to the major biliary tract, they do not take into account certain key clinical information, such as the general condition of the patient, vascular permeability, the timing of lesion recognition or the presence of sepsis, all factors that significantly influence the management strategy and prognosis.

The anatomy of the bile ducts is three-dimensional but projected in two dimensions. During a laparoscopic cholecystectomy, errors in identifying

structures are more frequent than during an open procedure, where visual and tactile cues are more easily perceptible [4]. This does not prevent the occurrence of trauma to the biliary tract during a cholecystectomy by laparotomy, as was the case for our patient.

Other factors are associated with a risk of injury to the bile ducts during a laparoscopic cholecystectomy, including the use of a terminal endoscope, excessive use of cauterization, the formation of a "tent" on the common bile duct due to excessive lateral traction on the infundibulum resulting in a tear, and abnormal biliary anatomy [5]. A lower insertion of the right posterior hepatic duct can easily be mistaken for the cystic duct or an accessory cystic duct.

In case of operational difficulty during a laparoscopic cholecystectomy, the surgeon must pause to determine if the procedure should be continued by laparoscopy. The local operating factors and the experience of the surgeon are decisive elements. This is however not a guarantee: in our case, the surgeon was 62 years old and very experienced with significant hindsight. Partial cholecystectomy is a reasonable alternative in some cases of difficult open cholecystectomy [6].

The cessation of dissection, anatomical disorientation, difficulty in visualizing the operating field and the inability of the laparoscopic equipment to perform usual gestures, such as grasping the gallbladder or separating tissues, are situations likely to impose a break. In most cases, these events indicate the need for a conversion or consultation. The consequences of conversion are minor compared to complications of biliary injury [7]. An important additional factor is the attempt at intraoperative repair by the same surgeon, as was the case for our patient.

An alternative when open cholecystectomy is very difficult and potentially dangerous is cholecystostomy; It is not recommended to continue laparoscopy when conditions are clearly unsafe. For example, it is inappropriate to attempt to stop laparoscopic bleeding in case of poor visualization, as the application of clips can also sever and damage the bile ducts. This is exactly what happened in our patient, where the application of several metal clips caused an injury to the main bile duct [7].

The more extensive lesions, of types D and E according to Strasberg's classification, require a biliary-enteric anastomosis for reconstruction. We favor hepaticojejunostomy in the Y of Roux, which was performed in our patient with satisfactory post-operative results [8].

CONCLUSION

Biliary lesions are complex problems requiring a multidisciplinary approach with surgeons, radiologists and gastroenterologists specialized in hepatobiliary diseases.

The identification of a intraoperative trauma is always desirable and the biliary repair must be done in a hepatobiliary surgery center, ultimately the best option to reduce the number of these lesions is training.

Conflicts of interest: none related to this article

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