



Fistulo-jejunostomy as an Alternative Treatment in the Repair of a Complex Biliary Leak[☆]

Fístulo-yeyunostomía como alternativa de tratamiento en la reparación de una fístula biliar compleja

The knowledge of the variations of the biliary tree (BT) is very important due to the increasing prevalence and complexity of the hepato-biliary surgery. The most frequent finding¹ (60% of the cases) is the presence of a right hepatic duct (RHD) and a left hepatic duct (LHD) converging in a common hepatic duct (CHD). Therefore, in 40% of cases we can find anatomical variations that will be essential study before any hepato-biliary procedure.² In up to 20% of the cases, we can find a posterior RHC that crosses the midline to drain in the LHC. This anatomical variation is very important when we are considering a left hepatectomy or a donor living surgery.³ The preoperative study of the biliary anatomy will be essential to avoid iatrogenic injuries, which repair could be highly complex, as in the present case.

A 43-year-old woman, with intrahepatic cholangiocarcinoma, was proposed for a left hepatectomy with regional lymphadenectomy. The procedure was uneventful and the histopathological study revealed a well-differentiated intrahepatic cholangiocarcinoma with free margins and 5 positive lymph nodes of the 15 analyzed (pT2bN1). In the preoperative study, no anatomical variations of the BT were described. During the first days, the patient developed a high volume biliary leak without any clinical worsening. An endoscopic retrograde cholangio-pancreatography (ERCP) was performed where we did not find contrast along the posterior RHD. The study was then completed with magnetic resonance (MR). A posterior RHD crossing the midline and drained into the hepatic margin was found. It drained directly in the area where the intra-abdominal drain was located (Fig. 1A). Initially, we proposed interventional treatment by radiological approach in an attempt to create an intrahepatic junction between the posterior RHD and the CHD, prior to consider surgical treatment. It was not possible, so an external biliary catheter was placed (Fig. 1B). After more than 3 months with the external biliary catheter, surgical treatment was proposed in order to try to perform an hepatico-jejunostomy. During the surgery, a fistulous tract was identified with the biliary catheter inside between the right hepatic lobe and the stomach. It had approximately 1 cm diameter and a thick

wall of 2–3 mm. In order to avoid a deep dissection of the hepatic hilum, with high risk of new iatrogenic injuries, we decided to perform a Roux-Y hepatico-jejunostomy with the fistulous tract, leaving the biliary catheter along the anastomosis (Fig. 2B). The postoperative was uneventful. A transcatheter cholangiography was performed (Fig. 2A) where we could identify good contrast flow from the intrahepatic duct to the jejunum without any leakage. Finally, both the intra-abdominal drain and the biliary catheter were removed.

The use of a well-consolidated fistulous tract for a biliary-digestive derivation is a good alternative for the treatment of complex biliary leaks.⁴ There are different therapeutic options. Firstly, we must consider the observation, because most of the biliary leaks disappear just with a good drain.⁵ The next step is interventional treatment by endoscopic and/or radiological approach.⁶ Several procedures can be considered such as: the embolization of the affected biliary duct, the creation of a new biliary tract (biliary-biliary, biliary-gastric or biliary-duodenal), the portal embolization of the parenchyma that the leak drains, etc. In the last 5 years, the surgical treatment of complex biliary leak is becoming increasingly important. There are several studies describing an hepatico-jejunostomy with a fistulous tract,⁷ with good outcomes after short follow-up. The use of the fistulous path to perform the shunt is being proposed as the basis of alternative treatments in complex cases. In most bibliographic reviews they clarify the need to wait between 3 and 4 months^{7,8} for the formation of a consistent fistulous path that allows an anastomosis to be performed on it. It should be noted, given the prevalence of anatomical variants of BV, and the consequences that may result from lesions thereof,⁹ the need for a thorough and thorough preoperative study of the biliary tree, by radiologists and surgeons who are experts in the anatomy of VB,¹⁰ whenever major hepatobiliary surgery is to be performed.

In conclusion, the preoperative study of the BT anatomy is essential to avoid iatrogenic injuries of the bile duct. In the case of complex biliary leak, the surgical approach with an anastomosis between a fistulous tract and the jejunum, is an effective alternative to avoid a more complex dissection with higher risk of new iatrogenic injuries.

[☆] Please cite this article as: López de la Torre Molina B, Caso Maestro O, García Conde Delgado M, Manrique Muncio A, Loinaz Seguro C. Fístulo-yeyunostomía como alternativa de tratamiento en la reparación de una fístula biliar compleja. *Cir Esp.* 2020;98:166-168

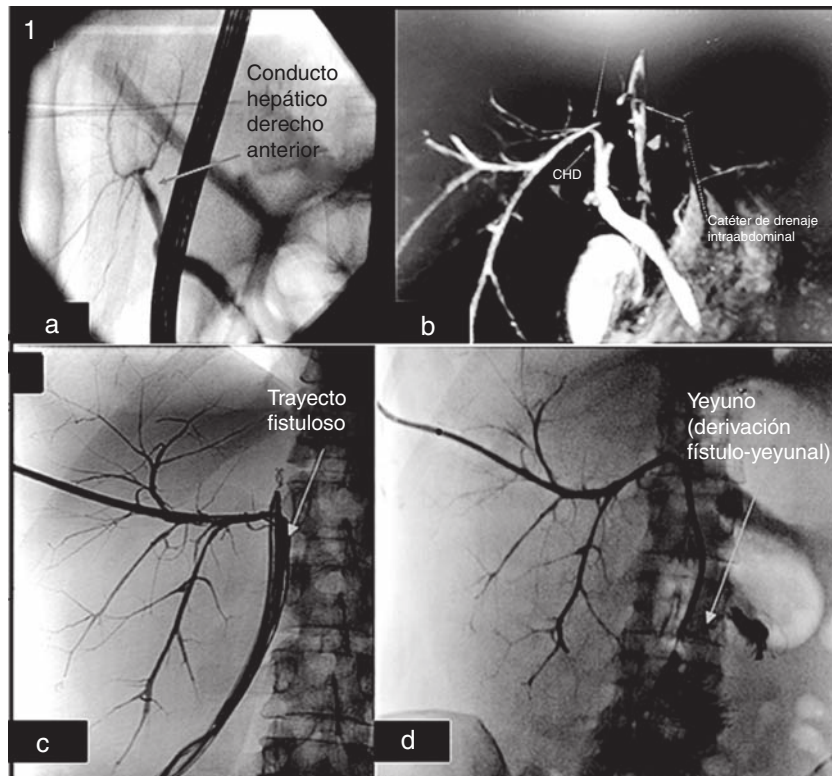


Fig. 1 – a. CPRE preoperative study. It is not realice the CHDP. **b.** Colangiogram posthepatectomy, with CHDP, who drained in to the leak. **c.** Cholangiography showing right posterior duct draining in the intra-abdominal drain with the biliary catheter inside. **d.** Cholangiography after perform the fistulo-jejunostomy.

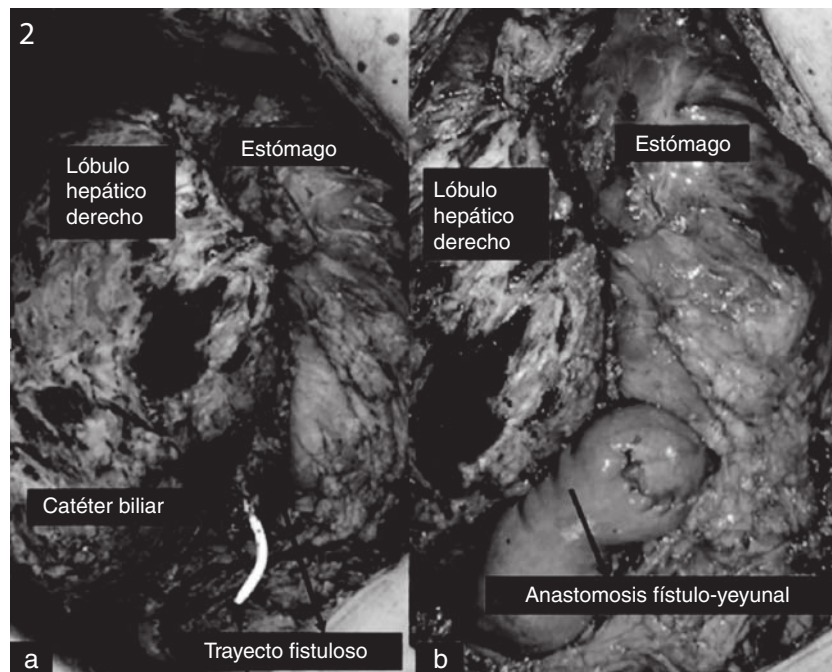


Fig. 2 – a. Identification of the fistulous tract with the biliary catheter inside between the right hepatic lobe and the stomach. **b.** Anastomosis of the fistulous tract to the jejunum.

REFERENCES

- Duran C. Liver: seven hepatic segments. *Int J Morphol.* 2016;34:1522-30.
- El Gharbawy R, Skandalakis L, Heffron T, Skandalakis J. Aberrant bile ducts, 'remnant surface bile ducts' and peribiliary glands: descriptive anatomy, historical nomenclature, and surgical implications. *Clin Anat.* 2011;24:429-40.
- Mitidieri V, Ottone N. Intrahepatic biliary ducts. anatomic and surgical classification after cholangiographic findings. *Int J Morphol.* 2015;33:1427-35.
- Akamatsu N, Sugawara Y, Komagome M, Ishida T, Shin N, Cho N, et al. Left hepatic trisectionectomy for hilar cholangiocarcinoma presenting with an aberrant biliary duct of segment 5: a case report. *J Med Case Rep.* 2010;4:250.
- Donadon M, Costa G, Cimino M, Procopio F, Del Fabbro D, Palmisano A, et al. Diagnosis and management of bile leaks after hepatectomy: results of a prospective analysis of 475 hepatectomías. *World J Surg.* 2010;40:172-81.
- Fragulidis G, Marinos A, Polydorou A, Konstantinidis C, Anastasopoulos G, Contis J, et al. Managing injuries of hepatic duct confluence variants after major hepatobiliary surgery: an algorithmic approach. *World J Gastroenterol.* 2008;14:3049-53.
- Shao-Ciao L, Shao-Bin C, Cheng-Chung W, Chu-Chu W, Yi-Ling L, Fang-Ku P. Embedding fistulojejunostomy: an easy and secure technique for refractory external pancreatic fistula. *Asian J Surg.* 2016;41:143-7.
- Kada F, Abyad M, Contini S, De Paoli L, Mancini L. Fistulojejunostomy for refractory post-traumatic biliary fistula in an austere environment: an unusual, time-honored procedure. *J Am Coll Surg.* 2015;220:e61-3.
- Shakamoto K, Tamesa T, Yukio T, Tokuhisa Y, Naeda Y, Oka M. Risk factors and managements of beal leakage after hepatectomy. *World J Surg.* 2016;40:182-9.
- Micó B, León W, Romaguera D, Lozada P, Rodriguez F. Characterization of patients with surgical iatrogenic injuries of the biliary apparatus. *Medisan.* 2015;19:6004-6015.

Beatriz López de la Torre Molina*, Oscar Caso Maestro, María García Conde Delgado, Alejandro Manrique Municio, Carmelo Loinaz Seguro

Unidad Hepatobiliar y Trasplante, Hospital Universitario 12 de Octubre, Madrid, Spain

*Corresponding author.

E-mail address: zirtaebmolina@hotmail.com

(B. López de la Torre Molina).

2173-5077/

© 2019 AEC. Published by Elsevier España, S.L.U. All rights reserved.

Complete Pathologic Response After Neoadjuvant Chemotherapy in Locally Advanced Colon Cancer[☆]



Respuesta patológica completa tras quimioterapia neoadyuvante en cáncer de colon localmente avanzado

Colon cancer is a highly prevalent disease whose incidence has increased in recent years.¹ The current treatment of locally advanced colon cancer (stages II [T3-4/N0/M0] and III [T1-4/N+/M0]) is based on surgical oncology. Adjuvant chemotherapy is recommended in stages III and II, which, in the absence of microsatellite instability, associate factors for poor prognosis – T4 tumors, undifferentiated, with perineural or lymphovascular invasion, intestinal obstruction or perforation, lymphadenectomy of less than 12 nodes, affected margins after the intervention or a CEA value at diagnosis greater than 5–10 ng/dL.²⁻⁵

With this therapeutic combination, 5-year survival rate range widely, from 66% in stage IIA to 28% in stage IIIC.⁶ These results, which are far from optimal, represent

a partial failure in the local and remote control of the disease.

In this scenario, it seems reasonable to seek alternative treatments to improve patient prognosis. One is neoadjuvant chemotherapy, with which there has been extensive experience in other gastrointestinal tumors.⁷ This modification of the therapeutic sequence has a series of theoretical advantages: reduced preoperative tumor volume, less risk of cell dissemination of the tumor during surgery, *in vivo* study of the effectiveness of chemotherapy and its early administration, and increased completion rate as it is not affected by surgical complications. In contrast, there is the risk of overtreatment – secondary to radiological overstaging –, fear of tumor progression during the administration period of neoadjuvant

[☆] Please cite this article as: Arredondo J, Simó V, Castañón C, Suárezc MJ, Álvarez MC. Respuesta patológica completa tras quimioterapia neoadyuvante en cáncer de colon localmente avanzado. *Cir Esp.* 2020;98:168-170