

IATROGENIC INJURIES OF BILE DUCTS: HOW TO PREVENT?

Lesões iatrogênicas das vias biliares: como prevenir?

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Iatrogenic injuries that occurs during a cholecystectomy, manifests itself as a true surgical challenge. These lesions may represent a major complication in the treatment of common diseases such as cholelithiasis that affects approximately 10% of the population. Literature continues to record levels ranging from 0.1% to 0.6% of lesions on biliary tract in laparoscopic procedures, even in referral centers^{2,6,11}.

The paradigm shift, provided by laparoscopy, is a major explanation for the increased frequency of iatrogenic injuries of bile ducts. Incomplete knowledge of the technology and instruments, and surgical skills training, determined increase on the number of lesions in the biliary ducts, associated with increased severity and inadequate repair. Such incomplete knowledge led, rather than the cure of cholecystectomy for cholelithiasis, the emergence of a chronic disease with significant morbidity and mortality: the iatrogenic injury of bile ducts.

In summary fashion, we could say that the prognosis of a patient with accidental injury of the biliary tract depends crucially on two factors. The first concerns the degree of liver and bile duct remnant at the time of reconstruction. The second, in turn, is related to the technique in biliary flow reconstruction. If in the first case the surgeon can not interfere, the same does not happen with the second. This depends entirely on him. It should be emphasized that the recognition of the lesion during surgery is very important, because it allows the repair in better condition than when performed postoperatively, in the presence of choleperitonium, infection or fistula.

Larger lesions may contribute considerable impact on quality of life, functional status of the liver and the survival of young patients. The current surgical reconstructions aim to restore the biliary transit through the mucosa-mucosa biliodigestive anastomosis, tension-free.

When the loss of substance in the bile duct is small, we can make the reconstruction end to end, from which the suture can be performed without tension. As in much of the time the edges of the biliary tract are removed and/or the distal portion can not be identified, reconstruction of the biliary tract is made,

more commonly, through derivation of common bile duct or bile duct-duodenal-jejunal drainage through to a jejunal excluded loop segment of approximately 40 to 60 cm (Roux-en-Y reconstruction)¹⁰.

The lesions of the biliary tract usually occur near the hepatic hilum, making the common bile duct-duodenal reconstruction very difficult or impossible. Moreover, it is related higher incidence of bile duct cancer in the long term, due to chronic reflux of pancreatic-biliary juice to biliary tree^{7,9}.

In a survey done by Massarweh, et al.⁸, with 1412 surgeons from the American College of Surgeons, there were data on which younger and more experienced surgeons who had their practice in university hospitals had statistically lower number of iatrogenic injuries of bile duct .

The recognition and assessment of severity of lesions in the ducts and impairment of vascular structures, which may occur in up to 32% of patients, is usually done in the postoperative period¹.

For a more comprehensive extension of the problem, magnetic angiocholangiography has been very useful when considering the vascular extent of lesions⁵.

Tian Yu¹², with the aim of preventing bile duct injury, reported the performance of subtotal cholecystectomy in 48 patients with acute cholecystitis with inflammation in high cystic bile duct.

The lesions occur most frequently during surgical procedures in the first 100 cases of learning curve⁴, associated with acute cases and use of inappropriate equipment. The use of routine preoperative cholangiography in prevention of iatrogenic bile duct injuries is controversial. The implementation of routine cholangiography enables the identification of lesions⁴, but has not been helpful in preventing injuries. Therefore, cholangiography has proven useful in detecting and repairing the most appropriate guidance.

Factors related to surgical technique are directly linked to lesions of the biliary tract. Among the three, is in most cases, bleeding from the cystic area of the triangle or the biliary tract, and excessive upward traction of the gallbladder, and the presence of anatomical variations that were not recognized.

Some anatomical landmarks of the hepatic hilum have been cited as important parameters for orientation

during dissection. The Rouvierés groove³, should be identified and must not be done the dissection below the base of segment IV and hepatoduodenal ligament.

We believe that the prevention of injuries of the biliary tract begins before the procedure, and some steps should be followed routinely: 1) the team should have knowledge of equipment, using appropriate tools (camera, monitor, insufflator and 30° optics); 2) patient must be in a good position, as the team's experience; 3) the anesthesiologist must have experience with laparoscopic procedures; 4) the surgeon and the assistants should have had training in simulators and animals, and had supervision of more experienced surgeons in the first human cases; 5) good knowledge of the anatomy of the biliary tree and its variations;; 6) during the procedure, traction and presentation are performed in a gentle way; 7) visualize the biliary structures with bottom traction of the gallbladder upward and laterally (toward the right shoulder of the patient) with the infundibulum pulled down and sideways, providing the gallbladder (cystic and cystic) flattening of the structures and clear visualization of the triangle of the biliary tract; 8) circular dissection of the cystic infundibulum begins with the opening of the peritoneum and adhesions of the posterior triangle of the biliary tract, using scalpels and low frequency; judicious use of cautery or clips during hemorrhage is important, cleaning the area with gauze before proceeding section or final ligature, 9) must exist prior to identification of the cystic duct, hepatic and cystic arteries before clipping and sectioning the structures, and is essential to identify the transition infundibulum-cystic, starting from right to left, and if in doubt, before the section, we should perform a radiological study; 10) dissection of the gallbladder cystic fund must keep the axis of the plane (especially the infundibulum) throughout the procedure and, necessarily, the surgical field should be well lit without blood or bile and the visualization of the hepatic hilum.

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