Bile leaks after videolaparoscopic cholecystectomy: duct of Luschka. Endoscopic treatment in a single Centre and brief literature review on current management

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Bile leaks after videolaparoscopic cholecystectomy: duct of Luschka. Endoscopic treatment in a single Centre and review of the literature

BACKGROUND: Laparoscopic cholecystectomy (LC) for gallstone disease is the most common surgical procedures performed in Western countries and bile leaks remain a significant cause of morbidity (0.2–2%). The bile ducts of Luschka (DL) are small ducts which originate from the right hepatic lobe, course along the gallbladder bed, and usually drain in the extrahepatic bile ducts. Injuries to these ducts are the second most frequent cause of bile leaks after cholecystectomy. Aim of our study is build a literature review starting from our experience.

PERSONAL EXPERIENCE: Fortyfour patients with abdominal bile collections post-cholecystectomy by suspected bile leak underwent endoscopic retrograde cholagio-pancreatography (ERCP). A complete cholangiogram was obtained in 42 patients (95.5%). In according to the magnitude of bile leak daily, we subdivided the patients in two groups: a) < 180 ml/day, and b) > 180 ml/day. The most common site of the leak was the cystic duct stump (94.5%), followed by DL (2 patient = 5.5%). 10 Fr stent insertion after endoscopic sphincterotomy (ES) was the most common intervention. In 6 patients (14%) a 7 Fr naso-biliary drainage was inserted. On an intention-to-treat basis, endoscopic intervention at ERCP had 100% success rate for resolution of the leak. The median time for resolution of the leak was 8 and 12 days in the first and second group respectively. No mortality ERCP-related were recorded. Early minor complications occurred in 7/42 (16.5%) patients.

METHODS: A literature search using MEDLINE's Medical Subject Heading terms was used to identify recent articles. Cross-references from these articles were also used.

RESULTS: ERCP is the most common diagnostic and therapeutic method used in bile leaks post-cholecystectomy. Most patients with DL leaks are symptomatic, and most leaks are detected postoperatively during the first postoperative week. Reduction of intra-ductal pressure with ES and stent or naso-biliary tube insertion will lead to preferential flow of bile through the papilla, thus permitting DL injuries to heal. This is the most common treatment modality used. In a minority of patients, re-laparoscopy is performed. In such cases, the leaking DL is visualized directly, and ligation usually is sufficient treatment. Simple drainage is adequate treatment for a small number of asymptomatic patients with low-volume leaks.

CONCLUSIONS: DL leaks occur after cholecystectomy regardless of gallbladder pathology or urgency of operation. They have been encountered more frequently in the era of LC. Intraoperative cholangiography does not detect all such leaks. ERCP with ES and stent placement are the most common effective diagnostic and therapeutic methods used. Intraoperative and perioperative adjunctive measures, such as fibrin glue instillation and pharmacologic relaxation of the sphincter of Oddi, can potentially be used in lowering the incidence and in the treatment of DL leaks.

KEY WORDS: Bile leak ERCP, Laparoscopic cholecystectomy, Luschka duct, Subvesical duct
Introduction

Laparoscopic cholecystectomy (LC) is associated with an increased frequency of bile duct injury 1. A significant postoperative bile leak occurs in approximately 0.8% to 1.1% of patients 2,4. Elective LC presents fewer technical difficulties for dissection of the gallbladder pedicle or gallbladder bed than the procedure for acute cholecystitis 1. Complications produced by the sectioning of a non-visualized duct of Luschka (DL) are uncommon during LC. Therefore, the diagnosis of this complication must be done as early as possible so it can be treated with non-invasive procedures 1. A variety of percutaneous, endoscopic, and surgical treatments have been proposed in the treatment of DL leaks 5. This review summarizes clinical manifestations of these ducts, as well as the methods used to diagnose and treat DL injuries. Possible adjunctive measures for prevention and treatment of these injuries will also be discussed.

Anatomy

The duct of Luschka, first described in 1863, is a small bile duct (1-2 mm in diameter) 6. It usually originates in the right hepatic lobe. DL is located very close to the gallbladder bed and has a variable drainage into the biliary tree. Most commonly it drains into the right or common hepatic duct 6. It occurs in 20-50% of the population 7,8. Embryologically, the DL arises from anomalous and autonomic proliferation of the most distal biliary ducts formed from the pars hepatica as it develops in the septum transversum. These biliary ducts may persist in certain zones where the liver parenchyma regresses secondarily during development 9. It should not be confused with the hepatocystic duct, which is considered a variation of the biliary tree (an aberrant duct) in which one or more segments of the liver drain into the gallbladder or cystic duct 10.

Etiology

DL injuries occur during dissection of gallbladder elements: division and ligation of the cystic artery and cystic duct, and the dissection of the gallbladder from its bed in the liver 11,12. There are several risk factors for DL injuries during cholecystectomy: (1) excessively deep plane dissection, (2) anatomical localization of DL, (3) anatomic anomalies of the biliary tree (18-39%), (4) difficult dissection from the gallbladder bed or Calot’s triangle due to acute inflammatory reaction, (5) technical difficulties (i.e.: bleeding, previous surgery) during the identification of the gallbladder pedicle, (6) anatomical distortion of the biliary pedicle due to chronic inflammation (i.e: scleroatrophic reaction), (7) injudicious use of cautery, or (8) inexperience on the surgeon’s behalf 1,11,15. Distal obstruction of the common bile duct from choledocholithiasis or sphincter of Oddi spasm may pose an additional problem and perpetuate a DL leak 8.

Clinical manifestations and diagnosis

Clinical symptoms are scarce after DL leak. Factors associated with clinical manifestations include the volume and distribution of bile in the peritoneal cavity, presence of sterile vs infected bile, and presence or absence of a drain 11. Numerous diagnostic methods have been used to detect these injuries 12. Nevertheless, careful clinical examination is still of the utmost importance. Three clinical patterns of presentation exist: (1) abdominal pain with fever and symptoms of local or general sepsis, or both, (2) external bile fistula, and (3) mild nonspecific symptoms 12. Very elevated bilirubin levels are uncommon in these patients 12. In half of patients, symptoms appeared after the 5th postoperative day 1. Tachycardia, ileus, fever, and shock were observed in these patients, along with diffuse bile peritonitis associated with a delayed diagnosis. Jaundice is a rare and later finding 1. Therefore, the prognosis is uncertain when other symptoms, such as fever, ileus, jaundice, or shock, a bile peritonitis or infected collection has already been established 1. Delayed diagnosis of a biliary leak depends that the majority of surgeons do not routinely drain the gallbladder bed after surgery 11.

Therapy

The treatment of DL leaks depends on the time of diagnosis: intraoperative or postoperative. Intraoperative visualization of injured DL, confirmed at cholangiography, could be treated with suture ligation or clip application. The simple ligation is adequate in treating DL leaks because these do not drain a significant amount of liver parenchyma 16,17. Application of fibrin glue to the gallbladder fossa is an alternative, and in theory it may seal DL leaks 18. In case of postoperative detection of DL leaks noninvasive treatments are usually effective. ERCP is the treatment of choice. ERCP with endoscopic sphincterotomy (ES), nasobiliary or stent insertion with or without percutaneous drainage of the bile collection (biloma) is usually effective 4,8. In patients who present with acute abdomen or who are not cured by noninvasive treatments, exploratory laparotomy is the best approach (successful rate of 30% to 56% of cases) 19. The surgical treatment consists of a lavage of the abdominal cavity, detection and closure of the duct of Luschka, and intraoperative cholangiography to that confirm the biliary tree is intact 12.
Materials and methods

Between January 2003 and January 2010 we performed 6840 ERCP, 267 LC and 47 open cholecystectomy (OC). Forty-four patients referred for ERCP because of suspected bile leak (5%). A lot of these patients (31/44 = 75%) coming from peripheral hospital centres. Three patients underwent to LC (1%) by our equipe of surgeons. A transparietal drainage was present in 37 (84%) patients. In 32 cases (86.5%) the biliary drainage was < 140 ml/daily (100-170 ml/daily). In the remnant 5 cases it was 220 ml/daily (180 –310 ml/daily). The patients without drainage showed a subhepatic bile collection (biloma), radiologically (ultrasound) confirmed. All the seven patients (16%) with biloma underwent to positioning a percutaneous drainage. Three of these patients (43%) showed a biliary drainage > 180 ml/daily. We considered a biliary drainage upper of 180 ml/daily as cut off between minor and major leaks (Tables I and II). Median time from surgery to ERCP was 3.5 (range 2-6) and 6.4 (3-10) days in patients with drainage and without drainage, respectively (p < 0.001). We divided the patients in two groups: a) patients with major leak (8 cases) and b) with minor leak (36 cases). All the patients underwent to ERCP. A complete cholangiogram was obtained in 42 patients (95.5%). Two patients with a major leak had a complete transection of the right hepatic duct (major bile leak). They were referred to surgery, and excluded from the study. At the end six patients (14%) presented a major bile leak, and in all the cases were cystic duct stump. The most common site of minor leak was the cystic duct stump (34/36 patients = 94.5%), and the Luschka duct in 2 patients (5.5%).

Results

ERCP with ES and 10 French straight stent insertion was employed in the patients with minor leak due to cystic duct stump. The proximal end of the stent was always positioned above the insertion sight of the cystic duct to the common hepatic duct. We used 10 French stent plastic (Amsterdam type, Olympus®, 7,9,12 cm) (Table III). No complication were observed (i.e.: clogging on migration). A 7 Fr naso-biliary tube (NBT) was inserted in the patients with major leak due to cystic duct leakage and in the patients with Luschka duct leaks (Fig. 1) The NBT was always positioned in the right hepatic duct. We used NBT with “pig-tail” end to reduce the risk of displacement (Fig. 2). No mortality ERCP related was recorded. Early minor complications occurred

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Table I - Clinical manifestation in patients with post-cholecystectomy leak

<table>
<thead>
<tr>
<th>Patients with drainage</th>
<th>Patients without drainage</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients</td>
<td>37 (84)</td>
<td>7 (16)</td>
</tr>
<tr>
<td>Abdominal pain, n. (%)</td>
<td>12 (32.5)</td>
<td>7 (100)</td>
</tr>
<tr>
<td>Fever, n. (%)</td>
<td>16 (43)</td>
<td>6 (85)</td>
</tr>
<tr>
<td>Jaundice, n. (%)</td>
<td>2 (5.5)</td>
<td>3 (43)</td>
</tr>
<tr>
<td>Ileus, n. (%)</td>
<td>—</td>
<td>2 (28.5)</td>
</tr>
<tr>
<td>Peritonitis, n. (%)</td>
<td>3 (8)</td>
<td>5 (71.5)</td>
</tr>
<tr>
<td>General sepsis, n. (%)</td>
<td>1 (2.5)</td>
<td>3 (43)</td>
</tr>
</tbody>
</table>

Table II - Demographic data from patients undergoing treatment for post-cholecystectomy leak

<table>
<thead>
<tr>
<th>Presentation at admission (n.)</th>
<th>With drainage (37)</th>
<th>Without drainage (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients (M/F)</td>
<td>17/20</td>
<td>5/2</td>
</tr>
<tr>
<td>Age, median (range)</td>
<td>54 (32-76)</td>
<td>46 (37-56)</td>
</tr>
<tr>
<td>Type of surgery (emergency, %)</td>
<td>LC 27 (16 = 60%)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>OC 7 (5 = 71%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC → OC 3 (2 = 66%)</td>
<td>—</td>
</tr>
<tr>
<td>Time to ERCP, median (range of days)*</td>
<td>3.5 (2-6)</td>
<td>6.4 (3-10)</td>
</tr>
<tr>
<td>Site of bile leak</td>
<td>Cystic duct stump</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Duct of Luschka</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Right hepatic duct</td>
<td>2</td>
</tr>
<tr>
<td>Severity of bile leak*</td>
<td>Low grade 30</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>High grade 7</td>
<td>1</td>
</tr>
</tbody>
</table>

LC, laparoscopic cholecystectomy; OC, open cholecystectomy; LC→OC, laparoscopic cholecystectomy converted to open cholecystectomy; *p < 0.001; * > or < 180 ml/daily; a 2 right hepatic ducts.
TABLE III

<table>
<thead>
<tr>
<th>Stent group</th>
<th>10 French, 7 cm</th>
<th>10 French, 9 cm</th>
<th>10 French, 12 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. patients (%)</td>
<td>19 (56)</td>
<td>11 (32)</td>
<td>4 (12)</td>
</tr>
</tbody>
</table>

Total patients: 44

37 with drainage in situ

32: < 180 ml/daily
5: > 180 ml/daily

7 without drainage in situ

4: > 180 ml/daily
3: < 180 ml/daily

8 major bile leaks

36 minor bile leaks

ERCP

42 complete cholangiography

6 major bile leaks

36 minor bile leaks

2 incomplete cholangiography

Right hepatic duct transection

ES + NBT

34: ES + STENT

2*: ES + NBT

Surgery

* Luschka duct leaks

Fig. 1

Fig. 2

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A) Fidu catheter is connected into the bile duct.
B) A guidewire is passed through the catheter into the bile duct.
C) The catheter is withdrawn.
D) The NBT is passed along the guidewire.
E) The guidewire is withdrawn.
F) The scope is removed, applying pushing pressure on the NBT to keep it in place.
G) “Pig-tailed” NBT
H) A short plastic tube is inserted manually in order to engage the NBT. The short plastic tube and the connected NBT are then pulled back out manually.
in 7/42 (16.5%) patients: 3 cases of bleeding post-ES, 2 cases of cholangitis, and 2 cases of pancreatitis. All the complications were treated conservatively. The resolution of biliary leak was demonstrated by the ending of the percutaneous biliary drainage (fistula). It was achieved in all the patients endoscopically managed. Particularly, stent group achieved it after the 7th day (range 5-12), and the NBT group after the 12th day (range 5-14) (p < 0.001). We removed the stent 48-hours after the ending of biliary fistula, and the NBT 48 hours after a negative trans-NBT cholangiography (Fig. 3 a,b,c). The percutaneous drainage was removed 24-hour later.

Discussion

LC has become the gold standard treatment for patients with symptomatic gallstones. However, since LC replaced open surgery, there was a slight increase in the frequency of intra-operative complications, specially during the learning curve phase 12,20. Bile duct injury identified during or after surgery as a bile leak occurs in 0.2% to 2% of cases; however, the frequency in large series after LC is less than 2%. With increasing experience, the rate of bile duct injury during LC had declined 4,21-27. The main causes of bile ducts injuries are two: (1) anatomic alterations (i.e.: acute cholecystitis, previous surgery), and (2) mechanical difficulty (i.e.: electrosurgical injury, harmonic scalpel, misplacement or displacement of the surgical clip(s) intended originally for the cystic-duct stump, or by disruption of the blood supply with consequent ischemic injury) 1,22,28-30. However, it is possible to individualize risk factors patient and surgeon related (Table IV), and what a surgeon must do to avoid the leak. The surgeon must remind: (1) good visualization, (2) minimal diathermy, (3) complete demonstration of anatomy, (4) early experienced help/conversion, (5) intra-operative cholangiography (IOC) when in doubt, (6) fundal traction, (7) lateral traction on Hartmanns pouch, (8) dissect posterolateral aspect of gallbladder, and (9) keep close to gallbladder wall. Leaks arise most commonly from the cystic duct stump. The next most common site of leak is a branch of the right hepatic duct (duct of Luschka). “Luschka leak” is the term used for an injury to this peripheral radical that occurs during dissection of a gallbladder from the liver 28,31,32. For patients with persistent symptoms after a cholecystectomy that was converted intraoperatively from laparoscopic to open, the index of suspicion for bile leak should be high 4,32,33. Braghetto et al. recorded 30% of biliary complications related to acute cholecystitis 1. A Bile leakage is a complication that is associated with a potential for higher morbidity 14. It requires a prolonged hospital stay, and sepsis may lead to several complementary procedures, even reoperations 1,14,32, 34,35. Strasberg et al.

<table>
<thead>
<tr>
<th>Risk factors surgeon related</th>
<th>Risk factors patient related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of experience (learning curve)</td>
<td>Empyema</td>
</tr>
<tr>
<td>Intraoperative bleeding</td>
<td>Acute and chronic cholecystitis</td>
</tr>
<tr>
<td>Misidentification of biliary anatomy</td>
<td>Long standing recurrent disease → fibrosis</td>
</tr>
<tr>
<td>Lack of recognition of anatomical biliary tree variations</td>
<td>Porcelain gallbladder</td>
</tr>
<tr>
<td>Errated dissection plane</td>
<td>Obesity</td>
</tr>
<tr>
<td>Improper interpretation of IOC</td>
<td>Previous surgery</td>
</tr>
<tr>
<td>Residual of common bile duct stones</td>
<td>Intrahepatic gallbladder</td>
</tr>
</tbody>
</table>

Fig. 3
included DL injury in type A. The true frequency of the DL leaks after LC in the population is unknown and ranges from 1% to 50% according to published series. Strasberg et al. reported 23% of type A injury, of which 15% were DL leaks, 4.4% of all of the iatrogenic bile duct injuries. Deziel et al. described DL injuries in 10.4% of total bile duct injuries, Ramia et al. recorded an incidence of DL leaks in 0.15% of cases. Sandha et al. reported an incidence of Luschka duct injury of 13%. A Strasberg type-A bile duct injury is not usually identified during a LC and clinically manifests in the first postoperative week. Among type A injuries, latent clinical symptoms are more common in the duct of Luschka than in cystic duct leakage.

Ultrasonography (US) is the first diagnostic tool, but under these circumstances, especially when it is done early after surgery, its accuracy is low, the results are equivocal, and errors are frequent. According to Brooks et al. and Walker et al., positive results are <70% for early US but as reported by Braghetto et al. US could miss the presence of bile collection in 84% of cases. However, as showed in several series when US is repeated or performed later than 5 days after surgery, confirmation of an intraabdominal collection is the rule (i.e.: subphrenic collections or diffuse peritonitis) because fluids were found even in the pelvic cavity. There is a wide spectrum of US findings (Table I). ERCP as CT scan usually show also initial bile collection in all the cases. The CT scan is an important diagnostic tool, even when the initial findings are normal. There are other diagnostic tools. HIDA scintigraphy is a dynamic study in which an ongoing bile leak may be detected. However, it provides suboptimal anatomic detail. A DL injury will be shown as extravasation of radionuclide from the gallbladder fossa. It is similar to ERCP or CT scan, and it provides more specific information about the location and cause of free fluid, with an accuracy of nearly 100%. Intraoperative cholangiography is helpful in clarifying the anatomy of the biliary pedicle. However, some reports suggest that this procedure does not prevent the injury and that it can provide a diagnosis of the lesions only in some cases. Clinic manifestation of bile leaks occurs from the 3rd to 21st postoperative days (mean, 5 days), and it can appear in many ways relatively to the magnitude of the bile flow. The goal at ERCP is twofold: (1) to identify the site of bile leakage, and (2) to negate the transpapillary pressure gradient. The principle of therapy is a reduction in the pressure gradient across the sphincter of Oddi leading to preferential flow through the papilla and closure of the leak. The therapy consists of nasobiliary tube (NBT) alone, sphincterotomy alone, or placement of a biliary stent with or without sphincterotomy. ERCP with ES and stent or NBT placement has become the treatment of choice, and in experienced hands, its efficacy is upper 80%.

**Table A - US-sign of bile collection after cholecystectomy**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No collection</td>
</tr>
<tr>
<td>Well-circumscribed collection within the gallbladder fossa and adjacent perihepatic region that is easily misinterpreted</td>
</tr>
<tr>
<td>A complex or large perihepatic and subhepatic collection</td>
</tr>
<tr>
<td>Collection at other peritoneal sites (parietocolic, pelvic cavity)</td>
</tr>
</tbody>
</table>

**Table B - Clinical manifestation of bile leak**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>External biliary fistula through the drain</td>
</tr>
<tr>
<td>Biloma (or localized collection)</td>
</tr>
<tr>
<td>Diffuse uncontaminated bile collection (bile ascites)</td>
</tr>
<tr>
<td>Diffuse bile peritonitis</td>
</tr>
</tbody>
</table>

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leak may be increased in patients with residual stones. If ERCP fails or if bile collections persist even after this procedure, relaparoscopy can treat the cause of the bile leak. The successful rate of this method is only 70% because, with this technique, the treatment may be incomplete in patients with diffuse bile peritonitis, which is often associated with a delayed diagnosis. In these cases a diffuse bile peritonitis associated with a high risk of sepsis occurs and a laparotomy is mandatory. This approach could reach successful upper 70% of patients as the definitive treatment with good final outcome. Kaffes et al. noted significantly more patients in the group treated by ES alone required further intervention to control the leak, surgery in particular, compared with the groups in which other forms of endoscopic intervention were used. Stent insertion was superior to sphincterotomy alone without any influence on the diameter of the stent. ERCP is unsuitable in presence of alteration of gastro-duodenal anatomy (i.e.: Billroth II gastrectomy or Roux-en-Y biliary-enteric anastomoses). CT/US guided percutaneous biliary drainage (PBD) can be performed in patients with no severe DL (i.e.: localized collections). The complications PBD related include: (1) fistula formation, (2) stricture formation, (3) haemorrhage and (4) bile leak secondary to liver puncture. At present, topical application of nitroglycerine (which relaxes the sphincter of Oddi) or injection of botulinum toxin are experimental strategies, and data from clinical trials are needed before that can be considered for clinical practice (Table VI).

TABLE V - Endoscopic management of bile duct leaks

<table>
<thead>
<tr>
<th>Endoscopic sphincterotomy</th>
<th>Naso-biliary tube</th>
<th>Stenting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages</td>
<td>reduce the bile duct-duodenal pressure gradient maintained by an intact sphincter of Oddi</td>
<td>prevent stricture formation during healing</td>
</tr>
<tr>
<td></td>
<td>divert bile away from the site of the leak</td>
<td>provide visual confirmation of biliary decompression</td>
</tr>
<tr>
<td>Disadvantages</td>
<td>Haemorrhage, pancreatitis, perforating</td>
<td>Uncomfortable high risk of displacement (?) “pig-tail” type</td>
</tr>
</tbody>
</table>

TABLE VI - Experimental strategies in management of bile ducts leaks

<table>
<thead>
<tr>
<th>Product</th>
<th>Nitroglycerin</th>
<th>Poly-N-Acetyl glucosamine</th>
<th>Botulinum toxin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin</td>
<td>Biodegradable gel derived from marine diatom</td>
<td>Derived from C. botulinum, an anaerobic GPR</td>
<td></td>
</tr>
<tr>
<td>Physical characteristic</td>
<td>Solidifies at basic PH</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Action modality</td>
<td>Calcium channel blockers and long-acting nitrates relax the sphincter</td>
<td>Safely plugs cystic duct stump leaks in animal studies</td>
<td>Paralyzes muscle (irreversible inhibition of Ach release)</td>
</tr>
<tr>
<td>Somministration</td>
<td>Intravenous</td>
<td>May be performed endoscopically</td>
<td>Endoscopy</td>
</tr>
<tr>
<td>Studies</td>
<td>Sphincter dyskinesia</td>
<td>Human trials scheduled to start</td>
<td>Compared to stenting in animal studies</td>
</tr>
</tbody>
</table>
Conclusion

LC is the main treatment of gallstones, but is so diffuse as insidious. However, in all gallbladder pathologies, the surgeon must recognize the potential for biliary complications. The consequences are a major morbidity and prolonged hospitalization, high cost and medico-legal aspects, and stress. An adequate subhepatic drainage is needed to prevent postoperative complications. However, drains are not used routinely after LC, and early recognition of this complication is therefore more difficult. Is mandatory to make the diagnosis of this complication as early as possible so to treat with noninvasive procedures. In our opinion the must effective strategies is to avoid biliary leak during LC with experience.

Riassunto

INTRODUZIONE: La colecistectomia videolaparoscopica (LC) è la procedura chirurgica più comune nel trattamento della patologia litiasica biliare e le fistole biliari rimangono tutt’oggi una importante causa di morbilità (0.2–2%). I dotti di Luschka (DL) sono piccolo dotti biliari che originano dal lobo epatico destro, decorrono lungo il letto della colecisti e usualmente sboccano nei dotti biliari extraepatici. Le lesioni di questi dotti sono la seconda causa di fistola biliare post-colecistectomia videolaparoscopica. Scopo del nostro studio è eseguire una review dell’letteratura partendo dalla nostra esperienza endoscopica e chirurgica.

ESPERIENZA PERSONALE: 44 pazienti con coleperitoneo post-colecistectomia sono stati sottoposti ad ERCP, con successo della procedura in 42 pazienti (95.5%). Secondo la portata giornaliera della fistola, abbiamo dividuto i pazienti in un gruppo a (< 180 ml/die), e b (> 180 ml/die). Il più frequente sito di leakage è stato il drenaggio è stato otto moncone cistico (94.5%), seguito dal DL (2 pazienti = 5.5%). Il posizionamento di una endoprotesi biliare da 10 Fr dopo sfinterotomia è stato il trattamento iniziale. In 6 pazienti (14%) è stato posizionato un sondino naso-biliare da 7 Fr. Considerando l’intention-to-treat, la ERCP ha avuto il 100% di successo per la risoluzione della fistola. Il tempo medio di chiusura della fistola è stato 8 e 12 giorni rispettivamente per il gruppo a e b. Complicanze precoci minori si sono registrate in 7/42 (16.5%) pazienti.

MATERIALI E METODI: Una review della letteratura usando MEDLINE con Medical Subject Heading terms è stata usata per evidenziare i lavori scientifici dell’ultimo quinquennio e le Cross-references sono state aggiunte alla ricerca.

RISULTATI: La ERCP è la metodica più comune nel trattamento delle fistole biliari post-colecistectomia. I pazienti con DL sono asintomatici, e molti leakage si appaiono solo dopo la prima settimana post-operatoria. La riduzione della pressione intra-duttale dopo sfinterotomia e posizionamento di protesi o sondino naso-biliare dirige il flusso biliare preferibilmente verso la papilla, così da permettere la rapida guarigione della fistola. In una minore percentuale di pazienti è possibile un reintervento, con visualizzazione diretta del leakage e sua legatura. Il semplice drenaggio è limitato a casi isolati asintomatici e con fistola a bassa portata.

CONCLUSIONI: Le fistole biliari da lesione di DL sono frequenti dopo colecistectomia videolaparoscopica. La colangiografia intraoperatoria non è in grado di evidenziare tutti i DL. La ERCP con sfinterotomia endoscopica ed il posizionamento di protesi o sondino naso-biliare costituiscono oggi il trattamento più efficace e meno invasivo di questa complicanza.

References

Bile leaks after videolaparoscopic cholecistectomy: duct of Luschka.


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