

Biliary Lithiasis with Choledocolithiasis in Children

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Rezumat

Litiază biliară cu coledocolitiază la copii

Litiază biliară este o patologie rar întâlnită la copii, având o frecvență de 0.13 – 0.22%, coledocolitiază aparând la 6 – 8% dintre aceștia. Metoda de elecție în ceea ce privește tratamentul chirurgical este colecistectomia laparoscopică. Prezentăm cazurile a 2 pacienți internate în clinica noastră, în vârstă de 14 ani, diagnosticate cu litiază biliară la care s-a intervenit chirurgical, realizându-se colecistectomie laparoscopică și colangiografie intraoperatorie. În cazul primei paciente, la colangiografia realizată intraoperator se constată un canal coledoc dilatat, fără a se evidenția însă prezența de calculi la acest nivel. Pe baza acestor descoperiri și ținând cont de istoricul pacientei (cu pasaje coledociene repetate ale calculilor), se decide montarea unui tub Kehr. Pentru cea de-a doua pacientă, la colangiografia intraoperatorie se constată un canal coledoc de dimensiuni normale, fără a se evidenția prezența unor calculi, luându-se decizia a nu monta un tub de dren. În cazul ultimei paciente, din cauza unor dificultăți tehnice nu s-a efectuat colangiografie intraoperator. Postoperator, evoluția celor trei pacienți a fost favorabilă. Întrucât litiază biliară nu este frecvent întâlnită în practica chirurgicală pediatrică, nu există încă un algoritm bine stabilit pentru tratamentul acestei patologii. Cu toate acestea, colecistectomia laparoscopică ar trebui să devină intervenția standard, iar colangiografia intra-

operatorie care la ora actuală este o tehnică puțin utilizată în chirurgia pediatrică, fie datorită experienței limitate a chirurgului, fie din cauza lipsei instrumentarului necesar, ar trebui să se realizeze de rutină în timpul acestei operații, aducând informații importante cu privire la existența posibilelor calculi migrați.

Cuvinte cheie: colecistectomie, laparoscopie, colangiografie intraoperatorie

Abstract

Although biliary lithiasis has been considered a less common pathology in the pediatric population than in adults, in recent years, it has increasingly been diagnosed in children, with a prevalence of between 0.13 to 0.22. The elective treatment of symptomatic biliary lithiasis is cholecystectomy, the laparoscopic approach being considered the "gold standard". We present 3 cases referred to our clinic with biliary lithiasis, in which we performed laparoscopic cholecystectomy. We performed intraoperative cholangiography with a 4 Fr transcystic catheter. In the first case, the cholangiography showed a dilated CBD, without obstruction. Considering the patient's history, with recurrent episodes of choledocolithiasis, we decided to perform a transcystic drainage. In the second case, cholangiography showed a normal CBD and no obstruction. In the third case cholangiography could not be performed due to technical issues. In all cases we performed retrograde laparoscopic cholecystectomy. The postoperative evolution in all cases was favorable. Studies conducted in the last years showed that laparoscopic cholecystectomy is a safe and efficient approach in the management of symptomatic biliary lithiasis in the paediatric age group. The management of choledoco-

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lithiasis is still not well defined: perioperative ERCP with ES, intraoperative cholangiography or intraoperative ultrasound were proposed as options in exploring the biliary tree.

Key words: cholecystectomy, laparoscopy, intraoperative cholangiography

Introduction

Although biliary lithiasis has been considered a less common pathology in the pediatric population than in adults, due to the use of ultrasonography as a screening method, gallstone disease has increasingly been diagnosed in children. The prevalence of biliary lithiasis is reported to be between 0.13 to 0.22 %. (1)

Choledocolithiasis complicates 6-8% of biliary lithiasis cases in children. Symptoms vary from jaundice, biliary pain, cholangitis or even pancreatitis. Laboratory data can reveal cholestasis in case of lithiasis of the CBD, and abdominal ultrasound can reveal a dilated CBD with distal obstruction. (2)

The elective treatment of symptomatic biliary lithiasis is cholecistectomy, the laparoscopic approach being the "gold standard" in the last 2 decades. If the management of choledocolithiasis in adults is standardized, consisting in ERCP with endoscopic sphincterotomy followed by laparoscopic cholecystectomy, the management of choledocolithiasis in children remains unclear. The methods proposed to explore the biliary tree in children are ERCP with pre or postop ES, intraoperative cholangiography or intraoperative endoscopic ultrasound, but the studies conducted could not standardize a protocol. (3-5)

Case reports

We present 3 cases referred to our clinic with biliary lithiasis, in which we performed laparoscopic cholecystectomy with intraoperative cholangiography in 2 cases.

First case, a 14 year-old female, is admitted in our clinic with a 2 weeks history of recurrent abdominal pain, nausea and vomiting. Clinical examination and laboratory findings are unremarkable. Abdominal ultrasound reveals a choledocal gallstone and multiple small gallstones in the cholecyst (11-14).

Second case, also a 14 year-old female, with a history of biliary lithiasis, is admitted in our clinic for intense abdominal pain and jaundice for 24 hours. Laboratory data reveals cholestasis and the abdominal ultrasound reveals a choledocal gallstone. Under conservatory treatment the evolution is favorable; ultrasound reevaluation reveals a 3,1 cm gallstone in the gallbladder, without CBD obstruction.

The third case, a 15 year-old female with unremarkable medical history, is admitted in our clinic for RUQ abdominal pain, nausea, vomiting and jaundice for 24 hours.

Laboratory data shows cholestasis and abdominal ultrasound reveals an inflamed gallbladder with 2 5 mm gallstones and CBD dilation. The evolution is favorable under medical treatment, with remission of CBD dilation, but persistence of the 2 calculi in the gallbladder.

All three cases were treated by laparoscopic cholecystectomy and in the first two cases intraoperative cholangiography was performed. The patient is positioned in anti-Trendelenburg; a 10 mm supraumbilical optical trocar is used, with 3 other trocars, a 10 mm epigastric trocar and two 5 mm trocars, in the right flank, on the medioclavicular line and on the anterior axillary line. After exposure of Calot's triangle, the cystic artery and the cystic duct are divided (Fig. 1, Fig. 2). We performed intraoperative cholangiography with a 4 Fr transcystic catheter. In the first case, the cholangiography showed a dilated CBD, without obstruction. Considering the patient's history, with recurrent episodes of choledocal lithiasis, we decided to perform a

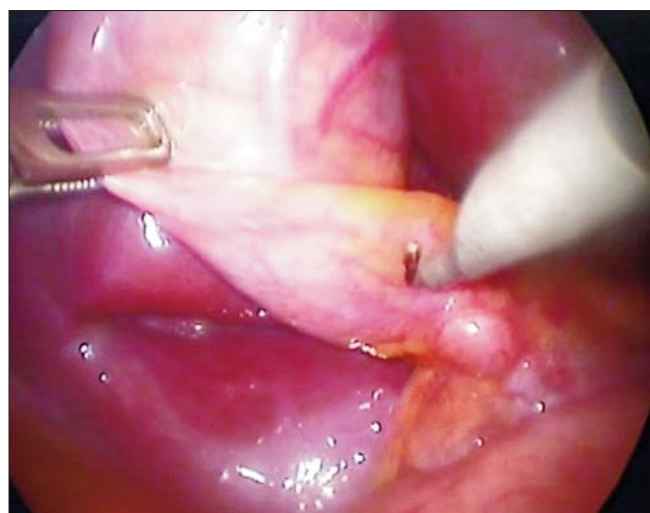


Figure 1. Dissection of the cystic pedicle

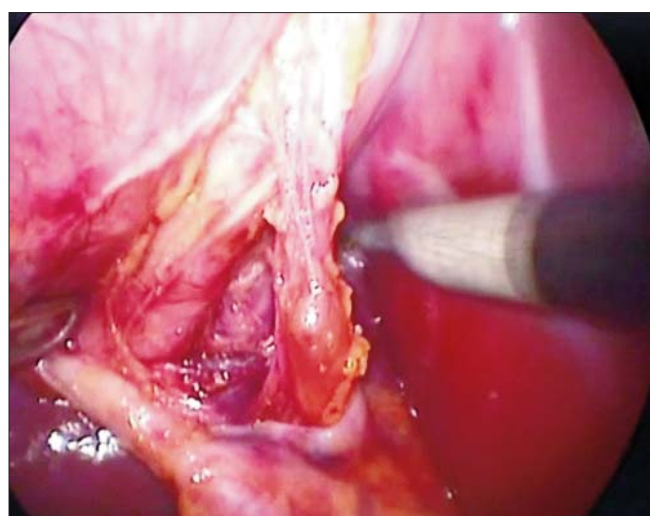


Figure 2. Critical view of safety

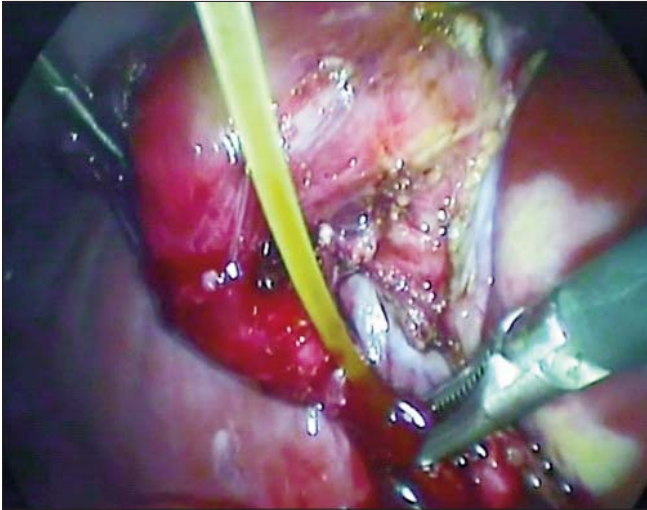


Figure 3. Insertion of the cystic drainage

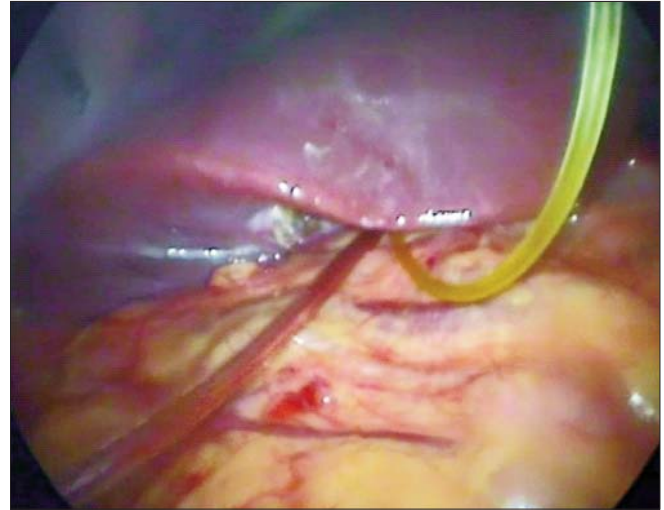


Figure 4. Final aspect – cystic drainage and subhepatic drainage

transcystic drainage (Fig. 3, Fig. 4)). In the second case, cholangiography showed a normal CBD and no obstruction. In the third case cholangiography could not be performed due to technical issues. In all cases we performed retrograde laparoscopic cholecystectomy. The postop evolution was favourable; the patients were discharged postop day 3. In the first case, the transcystic drainage was removed postop day 14. Abdominal ultrasound reevaluation revealed no CBD dilatation or gallstone images.

Discussions

In the last two decades the incidence of biliary lithiasis increased in the paediatric population. Approximately 20% of paediatric biliary lithiasis are due to hemolytic diseases. The diagnosis should be considered in patients with upper abdominal pain, especially in cases presenting one or more risk factors. Elective treatment of symptomatic biliary lithiasis is cholecystectomy, the laparoscopic approach being the “gold standard”.

Choledocolithiasis management remains controversial. (6) In the adult population the first step is ERCP with ES. (5) In children, this method is not standardized, the risk of complications being higher than in the adult group. Also, long term outcomes were not evaluated yet, and the risk of biliopancreatic reflux or papillary stenosis could not be estimated. However, there are studies that suggest that ERCP with ES is a safe and efficient option in the management of choledocolithiasis. (3)

In our cases, considering the patients' history and the possibility of choledocolithiasis, we decided to explore the biliary tree by intraoperative cholangiography, not being able to perform ERCP in our service. Thus, in case of choledocol obstruction, the obstacle could have been removed by pushing it in the duodenum or by extraction with a Dormia catheter. Both cholangiographies were negative for obstruction, but in the first case we decided for a transcystic drainage due to a dilated CBD. The role of intraoperative cholangiography is also controversial. Some studies suggest that cholangiography

should be routinely used to explore the anatomy of the biliary tree. (7,8) Other studies showed that intraoperative cholangiography is not efficient, increasing operative time, costs and morbidity.

Conclusions

Studies conducted in the last years showed that laparoscopic cholecystectomy is a safe and efficient approach in the management of symptomatic biliary lithiasis in the paediatric age group. Management of choledocolithiasis is not well defined; perioperative ERCP with ES, intraoperative cholangiography or intraoperative ultrasound were proposed as options in exploring the biliary tree.

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