

### Laparoscopic excision of choledochal cyst

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**Keywords:** Choledochal cyst; laparoscopy

#### Introduction

Choledochal cysts are cystic dilatations of the extrahepatic and/or intrahepatic bile ducts. They may present with right hypochondrial pain, obstructive jaundice and cholangitis and carry a substantial risk of malignant transformation [1,2]. Surgical resection and reconstruction with a Roux-en-Y hepatico jejunostomy is the treatment of choice. This may be done by open or minimal access. Laparoscopic resection reduces the morbidity of open access resulting in lesser post operative pain and respiratory problems, faster recovery, shorter hospital stay and reduced adhesion formation compared with open operation [1,2,3,4,5].

#### Case Report

A 36 year old female presented with right hypochondrial pain and recurrent cholangitis of eighteen months' duration. Physical examination was unremarkable. Abdominal ultrasound scan revealed a dilated common bile duct and hepatic ducts ; a computerised tomogram revealed a type IV choledochal cyst (Figure-1)

Surgical resection by laparoscopy was undertaken because of the risk of choledochal cyst malignancy in this symptomatic patient. The patient was informed of the possibility of conversion to open surgery if deemed necessary.

Surgery was performed under general anaesthesia with the patient in the supine position on the operating table. The head end was elevated and tilted towards right. Five ports were used (Figure 2). The ascending colon, hepatic flexure and proximal transverse colon were mobilized to expose the duodenum. The duodenum was Kocherized to expose inferior vena cava and aorta. The liver was retracted via the epigastric port and the

choledochal cyst was dissected between the common hepatic duct and the confluence of the bile and pancreatic ducts. The cyst was dissected off the hepatic artery and portal vein and removed en-bloc with the gall bladder. The proximal division was at the proximal common hepatic duct. The specimen was retrieved through a 5cm incision. A roux-en-Y jejunal loop was constructed extra corporeally while hepatico-jejeunostomy was performed laparoscopically. Total operating time was six hours ; three hours spent for resection and rest for reconstruction. She required narcotic analgesics during the first twenty four hours and discharge from hospital on the sixth post operative day.

#### Discussion

Excision of choledochal cyst and roux-en-Y hepatico-jejunostomy has two major concerns of complete cyst excision and leak proof anastomosis. Open surgery requires a substantial incision with significant potential for post-operative complications. Laparoscopic excision involving anastomosis with intra-corporeal suturing is a surgical challenge.



Figure 1. Computerised tomogram image showing the choledochal cyst (arrow)

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Figure 2. Port sites and mini-incision covered by adhesive plaster

The patient presented had a successful total laparoscopic resection and reconstruction. A mini incision was used to retrieve the specimen and to construct the roux loop.

Extracorporeal roux-en-Y construction could shorten the operative time [3], since this step, in our hands, took

up to two hours. During surgery the display of the anatomy was very clear by the magnification and the ability to zoom in with the camera. This allowed precise dissection with minimal blood loss facilitated by the use of bipolar diathermy and ultrasonic dissection.

#### References

1. Hwang DW, Lee JH, Lee SY, Song DK, Hwang JW, Park KM, Lee YJ, Early experience of laparoscopic complete en bloc excision for choledochal cysts in adults. *Surg Endosc* 2012 Nov;26(11):3324-9
2. NT Liem, Laparoscopic surgery for choledochal cysts. *Journal of Hepatobiliary Pancreatic Sciences* 2013 June ;10:487-491
3. ST Tang ,Y Yang ,Y Wang, YZ Mao,SW Li, QS Tong,GQ Cao,ZX Zhao, Laparoscopic chledochal cyst excision and hepatico jejunostomy. *Surg Endosc* 2011 Feb;25(2):416-22.
4. Lü SC, Shi XJ, Wang HG, Lu F, Liang YR, Luo Y, Ji WB, Zhao ZM, Technical points of total laparoscopic choledochal cyst excision. *Chin Med J (Engl)* 2013 Mar;126(5):884-7.
5. Diao M, Li L, Cheng W, Role of laparoscopy in treatment of choledochal cysts in children. *Pediatr Surg Int* 2013 Apr;29(4):317-26

#### Key points:

- Laparoscopic excision of a choledochal cyst involving anastomosis with intra-corporeal suturing is a surgical challenge.
- Minimally invasive surgery may be beneficial in reducing postoperative recovery.