Surgical Management of Common Bile Duct Stones: Cholecystectomy, Choledochotomy, and Bilio-digestive Anastomosis

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Abstract:

Common bile duct stones (CBDS) pose a significant challenge in terms of treatment options. The choice of surgical technique should ensure effective clearance of the duct, minimize the risk of residual or recurrent stones, and minimize complications. This article explores the surgical management of CBDS, including cholecystectomy, choledochotomy with biliary drainage, and bilio-digestive anastomosis.

Keys words : bile duct stones, biliodigestive anastomosis, extraction of stones from the bile duct

Introduction:

Common bile duct stones (CBDS) are a relatively common condition that presents a therapeutic challenge. The choice of the most appropriate technique should ensure duct clearance, reduce the risk of residual or recurrent stones, and minimize morbidity. This article discusses the surgical management of CBDS, including cholecystectomy, choledochotomy with biliary drainage, and bilio-digestive anastomosis. (1,2)

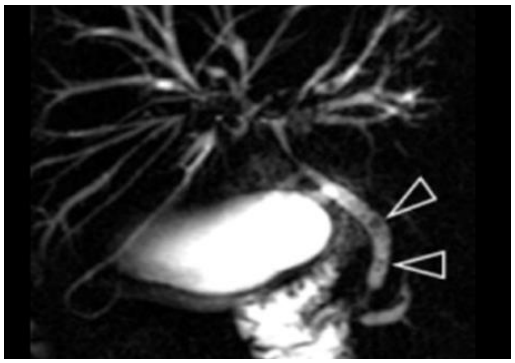

Figure 01: MRI

Methods:

A female patient, aged 60, was diagnosed with CBDS and underwent surgical intervention. The operative findings included a non-distended gallbladder with multiple stones and dilated common bile duct (approximately 15 mm) upstream from palpable stones in the lower part of the choledochus. The surgical procedures included cholecystectomy, choledochotomy, extraction of 9 large stones, manual lateral-lateral choledoco-duodenal anastomosis with two peritoneal sutures using 3/0 thread, and placement of a drainage tube. The patient had an uneventful postoperative course and was discharged on the 5th postoperative day.

Figure 02

Figure 03

Discussion:

CBDS is a relatively common condition, whereas choledocholithiasis is much rarer. (3,4)

The management of choledocholithiasis presents a therapeutic challenge, requiring the selection of the most appropriate technique to ensure duct clearance, reduce the risk of residual or recurrent stones, and minimize morbidity.

Choledochotomy with biliary drainage using a Kehr drain is recommended for patients under 65 years with mildly dilated CBDS not exceeding 15 mm.(1,3,5)

For patients over 65 years or those with significantly dilated CBDS (>15 mm), possibly associated with intrahepatic stones, distal choledochal stricture, or periampullary diverticulum, bilio-digestive anastomosis is the safest technique.

Choledoco-duodenal anastomosis is the most commonly used, whereas choledoco-jejunostomy is rarely employed.

Bilio-digestive anastomosis takes longer to perform than drainage with a Kehr drain but, in the majority of cases, prevents residual stone formation after surgery for choledocholithiasis. (1,6)

Symptomatic anastomotic stricture often manifests as recurrent acute cholangitis, resulting in stasis stone formation, cholangitis, and secondary biliary cirrhosis. The occurrence of anastomotic stricture is multifactorial, primarily related to the anastomosis diameter, which is directly correlated to the diameter of the common bile duct.(7)

The overall morbidity of bilio-digestive anastomosis reported in the literature is significantly higher than that of drainage with a Kehr drain.(8)

Conclusion:

The choice of surgical technique for choledocholithiasis depends on several factors. Choledochotomy with external biliary drainage using a Kehr drain is recommended for patients under 65 years with mildly dilated CBDS not exceeding 15 mm. This technique appears to have acceptable morbidity. For patients over 65 years or those with significantly dilated CBDS (>15 mm), bilio-digestive anastomosis is a safe technique with low morbidity and a very low risk of residual stones.

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