Review ARticle

New Indian Journal of Surgery
January - June 2014, Volume 5 Number 1-2

Risks of Common Bile Duct Injury during Open Laparoscopic Cholecystectomy & its Management

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Abstract

We reviewed the records of our patients admitted at Zliten University Hospital over past 23 years, from 1991 to 2013. 6000 patients were admitted & cholecystectomy was performed. All cases had routine investigations. Most of them had cholelithiasis with chronic cholecystitis. Those with acute cholecystitis were not included in the series. Mainly surgery of was done by junior doctors under the supervision of seniors. 13 cases had injury of common bile duct, in 5 cases it was reconciled postoperatively by bile leak & peritonitis & jaundice, in 8 cases the injury was recognized on table & repair was done by reux en y method, one had choledo chodudenostomy, one case died after 6 years due to septicemia from cholangitis, One case died after 16 years due to secondary biliary cirrhosis, one case died due to septicemia though after a normal course of two months & one case had repetition of reux en y method for stone removal after 6 years.

Introduction

Cholecystectomy is a common operation in routine surgical practice especially due to cholelithiasis. Laproscopic surgery now common worldwide was done in our cases as it has minimal access, blood loss & fast post-operative recovery. Common bile duct injury, due to so many reasons is one of the complications of the technique mentioned, and carries significant morbidity. The incidence of bile duct injury has increased after introduction of laparoscopic surgery. Injury could be evident immediately on operation table or could be seen as slow course of fibrosis & stricture of CBD. So, it could be minor or major injury. The treatment depends according to type of injury & time interval when injury occurs. If not treated in time it will complicate in different forms and will lead to significant morbidity & mortality.

Materials & Methods

We reviewed the hospital records of our cases who underwent laparoscopic cholecystectomy from 1991 to 2013 — 5600 cases underwent open & laproscopic surgery. In 920 cases GB was acutely inflamed with hydrops & empyema. Gall stones were seen in 230 cases of empyema of GB, 450 cases of hydrops of GB. 240 of those 6000 patients had gall bladder stones. A calcular cholecystitis was seen in 200 patients of all our patients. All our patients presented typical symptoms and signs of cholecystitis. All patients had ultrasound scan and those with stone and common bile duct were excluded. All patients were admitted on the basis of elective surgery. Only those with acute cholecystitis received treatment before surgery. All operations were done by qualified surgeons and some were done by SHO and registrars under supervision of senior surgeons.

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1500 had open Cholecystectomy.

4100 had laproscopic Cholecystectomy.

Intra operative Cholecystectomy was done in few patients where there was suspicion of CBD stones on table ERCP was done on two patients. All patients operated under G.A only one patient had operation under L/A. Two under spinal anaesthesia. All patient received prophylactic antibiotics.

Results

Those who had common bile duct injury were as follows:

13 patients (2 male, 11 females) age (23-75 years).

Incidence of CBD during

Open cholecystectomy 0.13%/ lap cholecystectomy 0.19%.

Discussion

Common bile duct injury is known complication of Cholecystectomy which can be avoided but sometimes it can happen and results in morbidity and even mortality if not recognized and treated before complication happened. Incidence of common bile duct injury increased after start of laproscopic surgery.

With review of our cases which had bile duct injury – laproscopic surgery had little high rate of incidence of CBD injury in comparison to open surgery. Bile duct injury is reduced:

1. When surgery is done by more experienced surgeons.
2. Less in patients with chronic cholecystitis than acute.
3. Recognition of anatomy of bile duct system.
4. Use of intra operative cholangiogram when we are not sure of anatomy.

Bile duct injury is big challenge in biliary surgery. Bile duct injury carries high rate of morbidity and mortality. Bile duct injury is diagnosed:

1. On table.
2. Patient develops bile leak post operatively.
3. Patient develops jaundice.

May be discovered late with stricture. Investigations used to support diagnosis of bile duct injury, blood test, patient will have high bilirubin. Ultrasound scan may show loss of continuity of CBD bile collection.

MRCP is diagnostic with high sensitivity and specificity.

ERCP is a very useful diagnostic tool.

Sometimes we may utilize PCT for drainage of bile – from obstructed liver bile duct. Injury was classified by Bismuth and Strasberg as (A/B/C/D/E).

Treatment of bile duct injury – if discovered during surgery and if surgeon is not experienced with bile duct reconstruction it is better to put drain and send patient to tertiary care centre where hepatobiliary experienced surgeon is available. If patient with bile duct injury is discovered with biliary peritonitis – patient should be treated for sepsis.

If injury is:

i. Where is only accessory duct
   1. Drain
   2. Laparotomy and tying of accessory duct

ii. Where is only cut in CBD not complete use of T.tube

iii. Iv-Reux en y hepaticojejunostomy. Problem of hepaticojejunostomy is stricture and cholangitis in our series.

Strictures were dilated endoscopically or PTC in our series. Two patients had dilatation. If not treated patient will get cholangitis and cirrhosis. Our patients developed cirrhosi comparison to studies done on CBD injury rate ranges were less.

Our experience showed rate of CBD injury 0.13% and during open surgery 0.16% only.

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