Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2320-7051.2805

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. **5 (3):** 193-196 (2017)

Research Article

International Journal of Pure & Applied Bioscience

OPEN ACCESS

A Study on Ethiopathogenesis and Management of Gall Bladder and CBD Calculus

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Received: 6.04.2017 | Revised: 15.04.2017 | Accepted: 16.04.2017

ABSTRACT

Back ground: *Calculus disease of biliary tract is the one of the most common problems affecting the digestive tract calc. Extra-hepatic biliary uli account for more than 95% of it. It includes cholelithiasis and choledocholithiasis. Autopsy reports have shown a prevalence of gall stone disease in 11% - 36%. Gallstone disease once more common in western world the incidence is increasing considerably in India, possibly due to change in dietary habits and lifestyle modifications.* ***Aims Of The Study:*** *To evaluate age, sex incidence, most common etiological factors for GB & biliary calculi,To illustrate varying clinical presentation. To study various modes of management adopted in our institution. To analyse biochemical types of stones prevalent in this part of country.* ***Materials and Methods:*** *Patients admitted in various surgical units of Stanley Medical College between August 2007 to August 2009 constitute the materials of this study. All patients admitted with clinical diagnosis of cholelithiasis / CBD calculus and its complications were included this study. A total of 60 patients were studied. A detailed history including dietary factors, life style habits, were elicited in all patients and thorough clinical examination was done in them.* ***Results:*** *Out of the cases studied 41 had only GB calculi. 19 had CBD calculi Total- 60 GB calculi- 41 (68.3%)CBD calculi- 19 (31.7%)postoperative biliary leak occurred in 2 cases after open CBD exploration which was of low output type and managed conservatively. Wound infection occurred in 6 cases (10%) Pus let out and sent for culture and sensitivity. Parenteral antibiotics administered according to culture and sensitivity report. Secondary suturing performed later*

Key words: *Gallstone disease, cholelithiasis, Extra-hepatic biliary.*

INTRODUCTION

Exact incidence in India is not known but prevalence in Indian males & females is estimated to be 4% and 6% respectively. Because of extensive studies of etiology of gallstone disease and better understanding of pathogenesis and technological advancements in past three decades, the management has become more appropriate and effective[1].

Cite this article: Manoharan, G.V. and Sivakumar, A Study on Ethiopathogenesis and Management of Gall Bladder and CBD Calculus, *Int. J. Pure App. Biosci.* **5(3):** 193-196 (2017). doi: http://dx.doi.org/10.18782/2320-7051.2805

Continued research on minimal invasive surgery especially after 1988 with advent of laparoscopic cholecystectomy followed by laparoscopic CBD exploration, endoscopic management of gallstones and CBD calculi, extra-corporeal shock wave lithotripsy has greatly improved and modernized the management of gallstone disease with minimal mortality and morbidity[2]. It depends on the site of the stone. A stone in the gallbladder may remain asymptomatic lifelong. But when it gets obstructed at the neck of the gall bladder, it results in cholecystitis[3]. The obstruction at the nect may get relieved and the stone may fall back into the gallbladder or passed into the CBD. In the common bile duct if the stone passes without obstruction it will produce only mild pain. But if it is obstructed, intermittend pain, fever, jaundice may ensure. It is called Charcot's triad. It is due to transient attacks of cholangitis. If this is accompanied by CNS disturbances and shock, it is called Reynauld's pentad[4,5].

MATERIALS AND METHODS

Patients admitted in various surgical units of Stanley Medical College between August 2007 to August 2009 constitute the materials of this study. All patients admitted with clinical diagnosis of cholelithiasis/CBD calculus and its complications were included this study. A total of 60 patients were studied. A detailed history including dietary factors, life style habits, were elicited in all patients and thorough clinical examination was done in them. All patients were subjected to basic blood, urine and biochemical evaluation including liver function test and USG abdomen, CT scan abdomen, MRCP were done in selected subjects. Patients were operated. Operative findings noted, recorded and analysed. Epidemiological factors relevant to age, sex distribution were noted. Bile was sent for bacteriological analysis, stones sent for its biochemical composition. In all jaundiced patients, prolonged prothrombin time is corrected by vit K IM injection for 3 days prior to surgery. Both open and laparoscopic cholecystectomy were performed for gall bladder calculi randomly and based on availability of laparoscope. For CBD calculi, open CBD exploration was done and drainage procedure was done either in form to T tube or biliary enteric anastomosis. All patients received peri operative antibiotic. Those, with CBD diameter of >1.5 cms are subjected to biliary enteric anastomosis.

RESULTS OF THE STUDY

1. Number and sex :

Total number of cases studied	- 60
Male	- 24 (40%)
Female	- 24 (40%)

2. Location of stone :

Out of the cases studied 41 had only GB calculi. 19 had CBD calculi

Total	- 60
GB calculi	- 41 (68.3%)
CBD calculi	- 19 (31.7%)

3. Age distribution :

Gall stone disease is more prevalent in 4th and 5th decade.

GB stone disease (22 cases) (36.67%)	-	41 – 50 years
GB calculi (15 cases) (36.59%)	-	41 – 50 years
CBD calculi (7 cases) (36.84%)	-	41 – 50 years

4. Clinical presentation :

		GB Calculi
Acute cholecystitis	:	2 (4.9%)
Chronic cholecystitis	:	38 (92.7%)
Mucocoele	:	1 (2.4%)
Empyema	:	-
Perforation	:	-
		CBD calculi
Obstructive jaundice	:	2 (78.9%)
Cholangistis	:	2 (10.5%)
Pancreatitis	:	2 (10.5%)

1. **Accuracy of preoperative ultrasound – 100%**
2. **Procedures performed :**

GB calculi

1. Emergency cholecystectomy – 2
2. Elective cholecystectomy – 39

Open – 19

Laparoscopic – 20
3. Cholecystostomy – nil
4. Partial cholecystectomy – nil

CBD calculi

1. ERCP removal of stones – 8
2. Cholecystectomy with T tube drainage – 39
3.Cholecystectomy, Choledochoduodenostomy – 1
4.Cholecystectomy, Choledochojejunostomy – 1

3. Number of stones :

Multiple stones are more common than single stone.

Total – 60
Single stone – 20 (33.3%)
Multiple stones – 40 (67.7%)

GB calculi :
Single stone – 13 (31.7%)
Multiple stones – 28 (68.3%)

CBD calculi :
Single stone – 7 (36.9%)
Multiple stones – 12 (63.1%)

8. Bacteriology of bile :

Bile was sent for culture and sensitivity in all cases.

Culture positive in 19 cases (31.6%)

E Coli – 12 cases (63.1%)

Klebsiella – 4 cases (21%)

Others – 3 cases (15.8%)

9. Biochemical analysis of stone :

Total	**- 60**
Cholesterol stone	- 5(8.3%)
Pigment stone	- 5 (8.3%)
Mixed stone	- 50 (83.3%)
Total	**- 41**
Cholesterol stone	- 4(9.7%)
Pigment stone	- 3 (7.3%)
Mixed stone	- 34 (82.9%)
CBD calculi	**- 19**
Cholesterol stone	- 1(5.3%)
Pigment stone	- 2 (10.5%)
Mixed stone	- 16 (84.2%)

10. Histopathology :

Gall bladder specimen sent for Histopathological examination in all 60 cases.

Acute cholecystitis	-2 (3.3%)
Chronic Cholecystitis	-58 (96.7%)

DISCUSSION

60 patients with extrahepatic biliary calculi were included in this study, out of which 41 patients (68.3%) had any gallstone and 19 patients (31.6%) had CBD calculi.The incidence of extrahepatic biliary calculi increases with age, and higher incidence were found in 4th and 5th decade.[6] Among all patients reported abdominal pain at sometime during the course of illness the location is Right hypochondrium being 90% in our series, which is comparable to 84% in Vijay Pal et al (1980).Majority of symptomatic gallstone disease patients present as chronic cholecystitis (92.7%). Other presentation being acute cholecystitis and mucocoele[7]. Majority of CBD calculi patients presented with Obstrutive jaundice (78.9%). 2 patients presented as gall stone pancreatitis, 5 patients presented with cholangitis. The accuracy of Pre-op USG was 100% in our series as compared to Mesherry *et al.* 90%, Schwartz *et al.* 100% Majority of cases showed multiple calculi (66.7%) as compared to Farzanesh *et al.* (62.5%) [8].

SUMMARY AND CONCLUSION

Medical dissolution of stone though theroretical, is not very popular with our hospital patients because of non-availability, laparoscopic cholecystectomy is now replacing open cholecystectomy, with availability of instrument, more of laparoscopic cholecystectomy is being carried out replacing open cholecystectomy. However open cholecystectomy has its own indications. It is therefore necessary that a surgeon should have adequate knowledge and experience in this field. Open CBD exploration is being following in our institution because of lack of expertise in laparoscopic CBD exploration in general surgery and availability of ERCP in our hospital help to remove distal CBD stones and its failure makes us to go for open surgical procedure[9,10].

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