World Journal of Pharmaceutical research

Volume 3, Issue 1, 2163-2171. Research Article ISSN 2277 – 7105

CHOLEDOCHOL CYST: A RETROSPECTIVE STUDY IN J.L.N. MEDICAL COLLEGE & HOSPITAL, AJMER

Dr. Ankit Kayal *[1], Dr .Dhruva Sharma[2], Dr Neha Sharma [3], Dr Preksha Sharma [4], Dr. Neeru Sharma[5], Dr . Mukesh Sharma[6]

[1]Senior resident, Department of Post-transplant Surgery, SMS Medical college and hospital, Jaipur, Rajasthan.
[2]Asst. Prof., Department of General Surgery, JLN Medical college and hospital, Ajmer, , Rajasthan.
[3]2nd Year Resident,Department of Pharmacology, NIMS Medical college and hospital, Jaipur, Rajasthan.
[4]1st Year Resident, Department of Anatomy, SMS Medical college and hospital, Jaipur, Rajasthan.
[5]Retd Prof & Head, Department of General Surgery, SMS Medical college and hospital, Jaipur, Rajasthan.

Article Received on
19 November 2013
Revised on 17 December 2013,
Accepted on 12 January 2014

***Correspondence for Author:**
Dr. Ankit Kayal
Senior resident, Department of Post-transplant Surgery, SMS Medical college and hospital, Jaipur, Rajasthan. India.

ABSTRACT

The choledochal cyst is the dilatation of either intra or extrahepatic biliary system or both. This study has been done in J L N Medical college and hospital, Ajmer, Rajasthan after taking permission from the institutional ethical committee . Between 2010 and 2013, 27 patients with choledochal cyst were recorded retrospectively for their age; gender; presenting clinical symptoms; physical, laboratory and histological findings; diagnostic methods; and operative procedures. Out of 27 patients with choledochal cyst, six cases were male (22.22%) and twenty one cases (77.78%) were females Out of 27 patients, 20 patients(74.07%) were less than 17 year of age, and 7(25.92%) patients were above 17 years of age. The most common symptoms were abdominal pain (n=25), and vomiting (n=21) while the most frequent physical findings were tenderness of the right upper abdominal quadrant (n=18) and intermittent jaundice (n=15).Most common surgical procedure performed was total cystectomy + Roux-en-Y hepaticojejunostomy (n=21). The mean duration of drains was 5 days.

Key words: Choledochal cyst, Todani's classification , Roux-en-Y Hepaticojejunostomy.

INTRODUCTION

The choledochal cyst is the dilatation of either intra or extrahepatic biliary system or both. It was first described in 1852 by Douglas. Diagnostic and therapeutic applications for the choledochal cyst have changed quickly in the last decades. After reports of malignant tumors and biliary cirrhosis due to choledochal cyst, its management has increased in importance for the surgeons. Here, we report 27 cases of choledochal cyst with the diagnostic and therapeutic results. The incidence of choledochal cysts is reported to be less than 1 patient in 13,000-2 million patients. Incidence is found more in Asian Continent.[1] Different theories for etiology of choledochal cyst are said to be- congenital, acquired, APBDJ, primary weakness of bile duct etc. However, the etiology of choledochal cyst remains unknown.

MATERIALS AND METHODS

This study has been done in J L N Medical college and hospital, Ajmer, Rajasthan after taking permission from the institutional ethical committee .Between 2010 and 2013, 27 patients with choledochal cyst were recorded retrospectively for their age; gender; presenting clinical symptoms; physical, laboratory and histological findings; diagnostic methods; and operative procedures. Todani's classification was used for the determination of the cyst type. Ultrasonography (USG), computerized tomography (CT) and MRCP were used as diagnostic tools. Follow-up features of the patients were recorded from one month to three years.

RESULTS:

Out of 27 patients with choledochal cyst, six cases were male (22.22%) and twenty one cases (77.78%) were females as depicted in the figure-1.

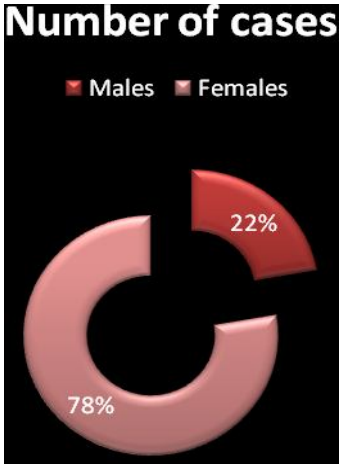

Fig-1:Depicts number of males and females.

Out of 27 patients, 20 patients(74.07%) were less than 17 year of age, and 7(25.92%) patients were above 17 years of age.

Presenting symptoms varied among the patients; however, the most common symptoms were - abdominal pain (n=25), and vomiting (n=21). Other symptoms : like nausea (n=16), fever (n=13), acholic stool (n=9), distention (n=6), diarrhoea (n=4) and constipation (n=3) were rare, and only two patients were seen with the complaint of an abdominal mass. This has been shown in figure-2.

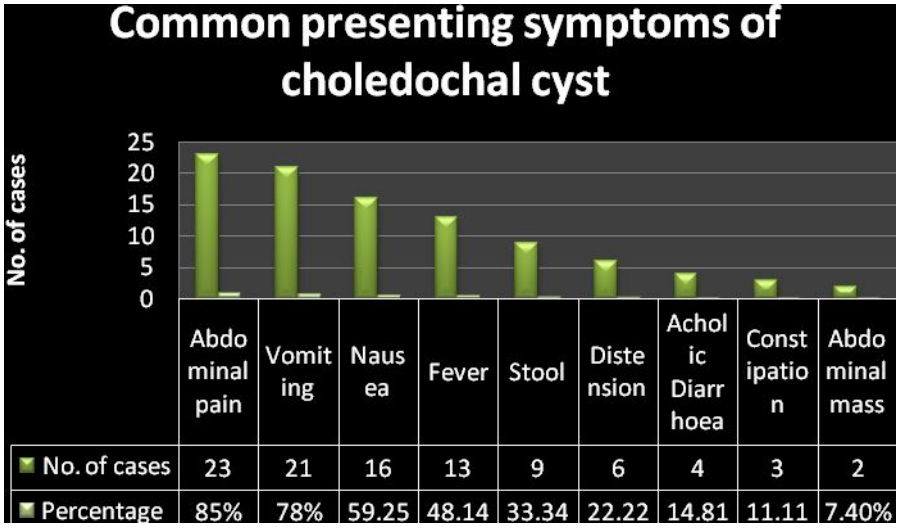

Fig-2 : Showing common symptoms in choledochal cyst

The most frequent physical findings were tenderness of the right upper abdominal quadrant (n=18) and intermittent jaundice (n=15). Only two patients had palpable mass. Physical examination findings were completely normal in two patients as shown in figure-3.

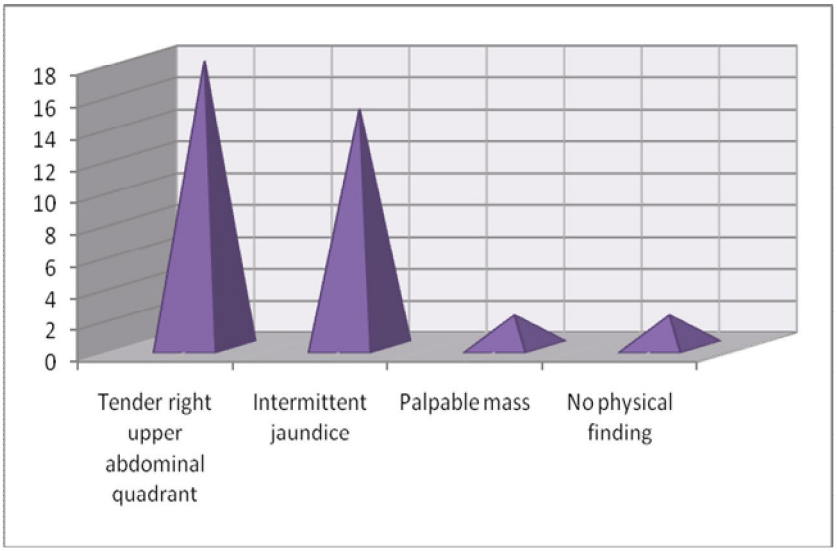

Fig-3: Showing physical findings in choledochal cyst.

As a radiologic procedure, USG was used in all patients, and it detected choledochal cyst in 21 patients, and suspected choledochal cyst in 6 patients. USG showed stones in gallbladder in six cases. Abdominal CT was used and showed choledochal cyst in all cases. MRCP was used in nine cases. MRCP showing type 1 choledochal cyst has been depicted in figure-4.

Fig-4: MRCP showing type 1 choledochal cyst.

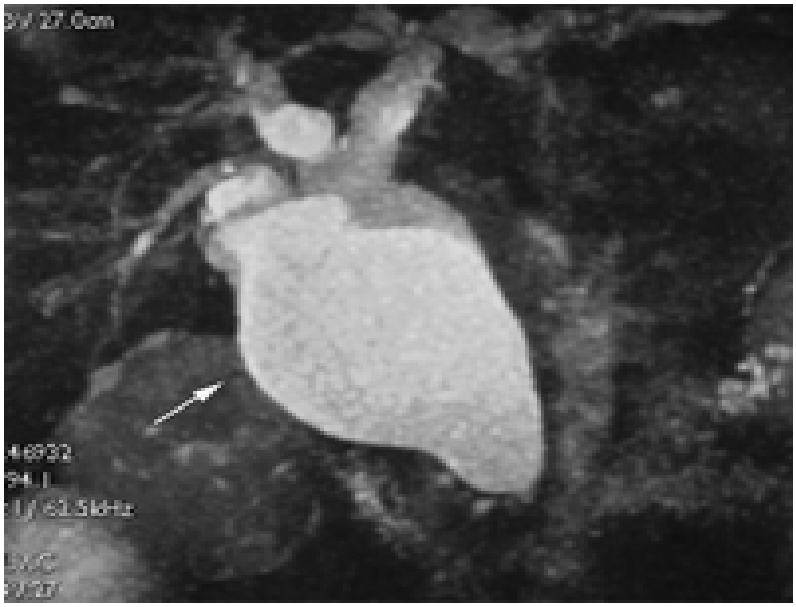

Fig 4.

Laboratory findings demonstrated hemoglobin, thrombocyte, and blood coagulation parameters as normal. White blood cell count was elevated in 9 patients. Blood chemistry results showed minimal increase in alkaline phosphatase (ALP) (n=12), in aspartate transaminase (AST) (n=13), in alanine transaminase (ALT) (n=14). Bilirubin level was increased in 17 patients. Type I cyst was found in all patients. Laboratory investigations are depicted in detail in table-1.

Table-1: Showing investigations done.

S.No.	Investigation done	Findings	No. of cases
1	Ultrasonography(USG)	Choledochal cyst detected	21
		Suspected choledochal cyst	6
		Stones in gall bladder	6

2	Magnetic resonance cholangiopancreatography (MRCP)	Positive findings	9
3	Laboratory investigations	Hb (normal)	27
		Thrombocytes(normal)	27
		BT(normal)	27
		CT(normal)	27
		WBC(elevated)	9
		ALP(elevated)	12
		AST(elevated)	13
		ALT(elevated)	14
		Serum bilirubin	17

In all patients, diagnosis was made before the operation. Surgical procedures performed in the series included: total cystectomy + Roux-en-Y hepaticojejunostomy (n=21), cystoduodenostomy (n=3), total cystectomy + hepaticoduodenostomy (n=3) as shown in fig-5 Fig-5:Showing Surgical procedures performed in our study.

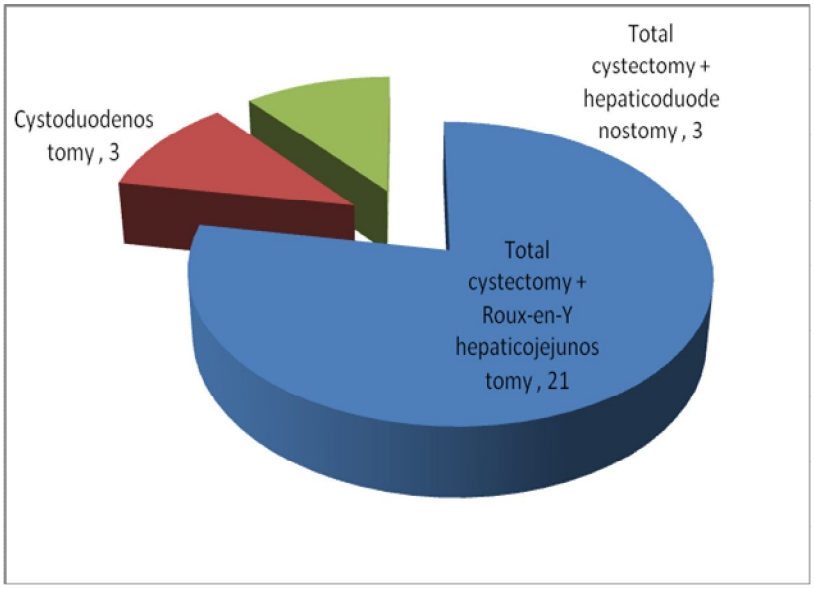

Fig. 5

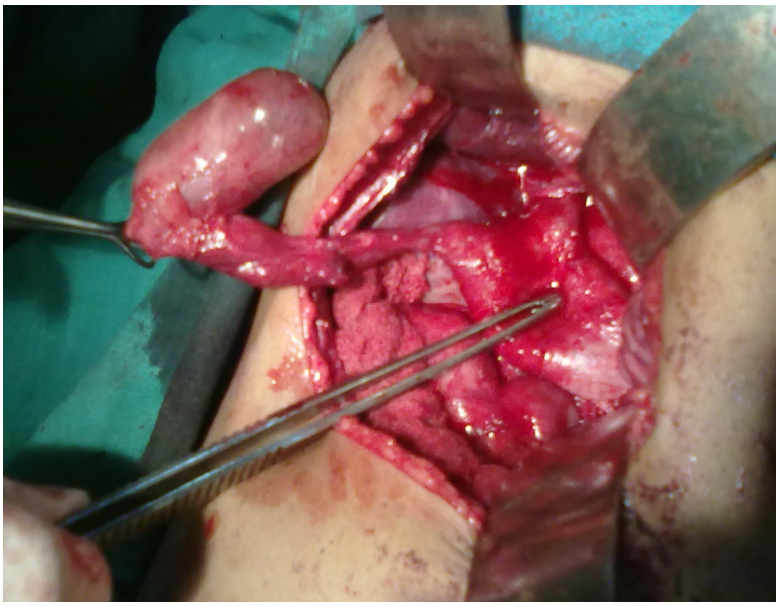

Fig-6

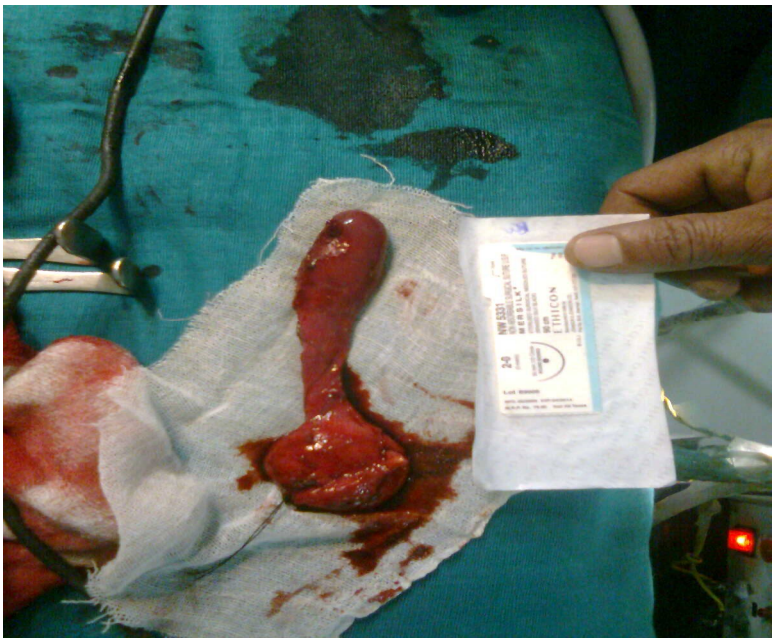

Fig-7

Figure-6/7 showing images of choledochal cyst resected during surgery of one of the patient.

The mean duration of drains was 5 days. Broad-spectrum antibiotics with triple combination were given to the patients. The mean duration of antibiotics given was 9 days. The meantime of initiation of oral intake was 6 days, and of discharge was 9 days. One patient which was operated as cystoduodenostomy presented with recurrent cholangitis.

DISCUSSION

Female predominance (around 75%) is shown in many reports of choledochal cyst, and our report proved this (77.78% female predominance). [8]Choledochal cysts are known primarily as a disease of young adults and children, since 60% of the patients are under the age of 10 years. We found 20 patients(74.07%) of our cases were under 17 years of age.[2] The classical triad of jaundice, mass, and pain is considered as the most common and significant findings in the diagnosis of the choledochal cyst, especially in infancy. Suprisingly, no patient showed this triad in our series. We found the most common presenting findings of patients to be abdominal pain and vomiting.[9] Vomiting is known to occur following cyst infection or obstruction of the duodenum. Abdominal USG and CT are both used to demonstrate choledochal cyst even in the fetus during the prenatal period. Before the common use of USG to diagnose choledochal cyst, PTC and endoscopic retrograde cholangiopancreaticography were definitive tests with 80-90% diagnostic accuracy. We support the use of abdominal USG with 89% accuracy. Advancement in sonographic techniques and surgical procedures for the diagnosis and treatment helped us to handle choledochal cyst with minimal mortality and morbidity. It also decreased the rate of the pre-and post-operative complications. The percentage of correct diagnosis before surgery ranges from 27 to 80% with approximately 60% for young adults in the other studies. In our study, 100% of the patients were correctly diagnosed by USG ,CT and MRCP.[3] According to Todani et al. classification, we did not encounter any intrahepatic involvement of choledochal cyst. The most common complications of choledochal cyst are known to be cholangitis and biliary cirrhosis in proportion to the duration and degree of obstruction before surgery and following inadequate therapy. Other complications include portal hypertension and liver abscess. We encountered 11% of cases with cholangitis related to choledochal cyst after surgery. Stones in either cyst or gallbladder are known to occur in 8-26% of the patients. We found stones in gallbladder, in 22% of the presented cases.[4,5] The reported incidence of biliary tract carcinoma in choledochal cysts varies between 2.5% and 17.5%, which is higher than that found in the general population (0.012-0.048%). Although excision of the cyst totally removes a potential risk of carcinoma, it does not exclude the possibility of the development of cancer in intrahepatic ducts. We did not see any carcinoma related to choledochal cyst to date in our series.[6,7] In our series, only one patient had cystoduodenostomy. In this operation high rate of ascending infection is reported in the literature, this patient also developed ascending infection after the operation. We preferred total resection of the cyst if possible and Roux-en-Y hepaticojejunostmy as a surgical procedure. We believe like others that this technique

prevents most of the complications of the disease.

CONCLUSION

Contrary to the general belief, choledochal cysts have no classic clinical features. USG is the major diagnostic tool, and its accuracy is increased when accompanied by MRcholangiography. The best surgical treatment seems to be complete excision of the cyst and Roux-en-Y hepaticojejunostomy. Choledochal cyst should be considered in the differential diagnosis of a wide spectrum of clinical features, particularly in children, caused in such as abdominal pain, vomiting, icterus, and abdominal mass in order to avoid lethal complications including biliary cirrhosis.

REFERENCES

1. Kasai M, Asakura Y, Taira Y. Surgical treatment of choledochal cysts. Ann Surg 1970; 172: 844-851.
2. Powel CS, Sawyers JL, Reynolds VH. Management of adult choledochal cysts. Ann Surg 1981; 193: 666-667.
3. Yamaguchi M. Congenital choledochal cyst. Am J Surg 1980; 140: 653-657.
4. Robertson JF, Raine PA. Choledochal cyst: a 33-year review. Br J Surg 1988; 75: 799-801.
5. Orenstein SR, Whitington PF. Choledochal cyst resulting in congenital cirrhosis. Am J Dis Child 1982; 136: 1025-1026.
6. Todani T, Tabuchi K, Watanabe Y, Kobayashi T. Carcinoma arising in the wall of congenital bile duct cysts. Cancer 1979; 44: 1134-1141.
7. Kagawa Y, Kashihara S, Kuramoto S, Maetani S. Carcinoma arising in a congenitally dilated biliary tract. Report of a case and review of the literature. Gastroenterology 1978; 73:1286-1294.
8. Biswanath Mukhopadhyay, Ram Mohan Shukla, Madhumita Mukhopadhyay Choledochal cyst: A review of 79 cases and the role of hepaticodochoduodenostomy**.**J Indian Assoc Pediatr Surg. 2011 Apr-Jun; 16(2): 54–57.
9. Suita S, Shono K, Kinugasa Y, Kubota M, Matsuo S. Influence of age on the presentation and outcome of choledochal cyst. J Pediatr Surg. 1999;34:1765–8.
10. Miyano G, Yamataka A, Shimotakahara A. Cholecystectomy alone is inadequate for treating forme fruste choledochal cyst: Evidence from a rare but important case report. Pediatr Surg Int. 2005;21:61–3.

11. Srimurthy KR, Ramesh S. Laparoscopic management of pediatric choledochal cysts in developing countries: A review of 10 cases. Pediatr Surg Int. 2006;22:144–9.
12. Nquyen Thanh L, Hien PD, Dung le A, Son TN. Laparoscopic repair of choledochal cyst: Lesson learned from 190 cases. J Pediatr Surg. 2010;45:540–4
13. Shimotakahara A, Yamataka A, Yanai T. Roux-en-Y hepaticojejunostomy or hepaticoduodenostomy for biliary reconstruction during the surgical treatment of Choledochal cyst: Which is better? Pediatr Surg Int. 2005;21:5–7.