



## A CLINICAL STUDY OF CHOLEDOCHAL CYST

### KEYWORDS

CBD, Pancreatic duct, choledochal cyst, ultrasonography, Roux-en-Y hepatico-jejunostomy

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**ABSTRACT** 18 Cases of choledochal cyst were studied in Osmania General Hospital, Hyderabad. Age and sex incidence, clinical features, sex ratio, investigations and surgical modalities of treatment were studied. The youngest patient was 7 years of age and the oldest patient was 56 years. The female to male ratio was 3.5:1. Pain in the right hypochondrium was the presenting symptom in all the 18 cases (100%). Other clinical features included jaundice, fever, mass abdomen, nausea & vomiting and upper gastro intestinal bleeding. Ultrasonography of the abdomen confirmed the presence of choledochal cyst. MRI Scan was done to know the relationship between the lower end of CBD and the Pancreatic duct. 16 cases diagnosed as type I choledochal cyst. 2 cases showed type IV choledochal cyst. Complete excision of the cyst with re-construction of the biliary tract using Roux-en-Y loop of jejunum is the treatment of choice (Hepatico-jejunostomy).

### INTRODUCTION

Choledochal cyst is due to a specific weakness in a part or the whole of the wall of the common bile duct. There are five types of choledochal cysts. The type I choledochal cyst is the commonest. Ultrasonography confirms the presence of choledochal cyst. MRI reveals the relationship between the lower end of the CBD and the Pancreatic duct.

### AIM OF STUDY

To study Sex & age incidence, clinical presentation, diagnostic modalities, surgical management, complications of Choledochal cyst.

### MATERIALS AND METHODS

The present study included 18 patients of all ages having choledochal cyst presented to the Department of General Surgery and Gastroenterology Department in Osmania General Hospital from 2004 to 2007.

### Clinical features:

The clinical features are:

- Pain abdomen
- Jaundice
- Fever
- Mass abdomen
- Nausea & vomiting
- Upper gastro intestinal bleeding

### Biochemical Tests:

These tests are done to know the complications associated with choledochal cyst and to prepare the patients for surgery. The Tests that are done are Liver function tests, serum amylase, serum proteins, blood grouping, typing, blood sugar and blood urea etc.

### Imaging Studies:

Ultrasonography of abdomen, ERCP, MRCP, CT Scan

### AGE INCIDENCE:

In present series age group is extending from 7 years to 56 years. The youngest patient is 7 years old and oldest

is 56 years old. The total number of patients in 0-10 years age group is 8, between 11-20 years age group are 7, between 21-30 years are 1 and above 30 years age are 2.

**The mean age in the present series is 17.24 years.**

### SEX INCIDENCE:

In this series 14 female patients and 4 male patients are present.

Female to male ratio is 3.5 : 1

INCIDENCE OF CLINICAL FEATURES

TABLE-1: Incidence of clinical features in 18 cases.

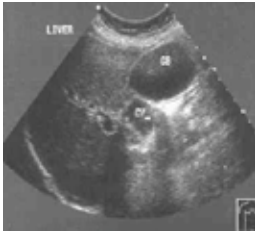
S.No.	Clinical Features	No. of cases	Percentage of cases
1.	Pain abdomen	18	100%
2.	Fever	11	61%
3.	Jaundice	14	77%
4.	Mass Abdomen	7	38%
5.	Nausea/Vomiting	4	22%
6.	Hepatomegaly	4	22%
7	Upper GI Bleeding	0%	0%

Table – 2: Modes of imaging studies used in this series

S.No.	Mode of Imaging	No. of cases
1.	USG abdomen	18
2.	USG alone only	5
3.	ERCP	8
4.	MRCP	4
5.	CT Scan abdomen	2

**IMAGING STUDIES**

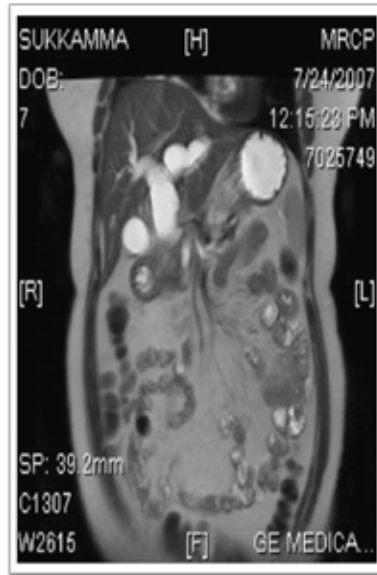
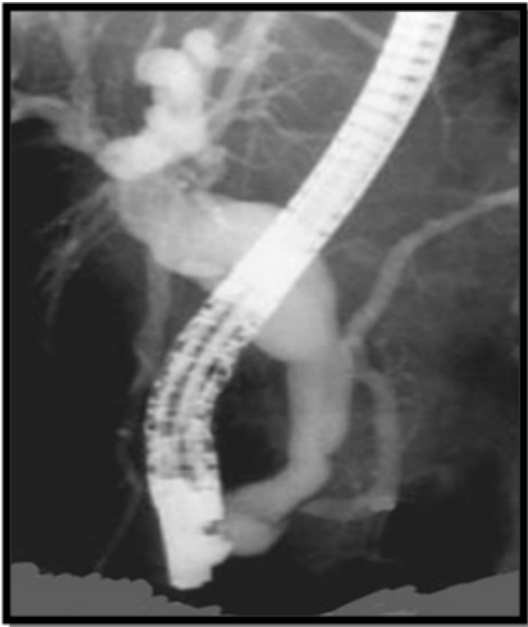
**FIGURE 1: USG showing Choledocalyst**



**FIGURE 2: MRI showing Choledocal cyst**



**FIGURE3:ERCPshowingCholedocalyst**



**FIGURE 4: MRCP showing Choledocal cyst**

**LAB INVESTIGATIONS**

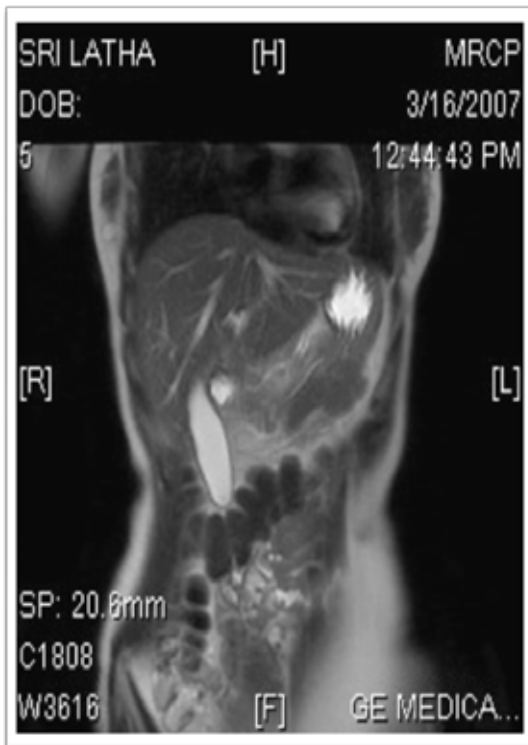
**Table -3: Showing lab investigation in present series.**

S.No.	Tests	No. of cases.
1.	Hyperbilirubinemia	6
2.	↑ Alkaline Phosphotase	11
3.	↑ SGPT	2
4.	↑ Serum Amylase	3

**SURGICAL MANAGEMENT:**

**Table -4: Showing different surgical procedures according to type of cysts.**

Type of Cyst	No. of Cases	Excision	Anastomosis
I	16 (88%)	15 cases complete excision 1 case Lilly's modification	Roux-en-Y end to side Hepatico Jejunostomy
IV	2 (12%)	Complete Excision	Roux-en-Y end to side Hepatico Jejunostomy



**STEPS IN SURGERY**



**FIGURE 5: Right sub costal incision**

**FIGURE 6:** Choledochal cyst after decompression of its contents



**FIGURE 7:** Lower end of CBD closed



**FIGURE 8:** Creation of Roux-en-Y limb



**FIGURE 9:** Hepatico jejunostomy



**FIGURE 10:** Excised specimen of choledochal cyst

**COMPLICATIONS OF SURGERY**

**Table -5:** Showing complications of surgery in number of cases.

Complications	No. of cases	Percentage %
Anastomotic leak	4	22%
Wound infection	3	17%
Atelectasis	4	22%
Pancreatic leak	1	5%
DVT	1	5%
Death	1	5%
Intra operative bleeding	0%	0%

**ANALYSIS & DISCUSSION**

The present series of 18 cases from 2004-2007 are compared with different series as presented in different journals and Text books.

**SEX VARIATION:**

**Table 6:** Showing sex variation in different series.

Series	Female : Male Ratio
Present	78: 22
N.A.Wani et al	65:35
Khandelwal et al	56 : 44
Chijiwa et al	89:11

The incidence in present series is 78:22 for 100 cases, which is same as other series.

**AGE Presentation:**

**Table 7:** Showing mean age in different series.

Series	Mean age
Present	17.24 yrs.
N.A.Wani et al	27 yrs.
Chijiwa et al	24 yrs.
John Hopkins	23 yrs.

The mean age in the present series is 17.24 years , which is less compared to the published data. The present series has age group ranging between 7- 56 years.

**PRESENTING SYMPTOMS****Table 8: Showing clinical features in percentage in different series.**

Symptoms	Present-Series	N.A.WaniEt al	Chijjiwaetal	JohnHopkins
Pain abdomen	100%	85%	78%	87%
Fever	61%	42.8%	28%	26%
Jaundice	77%	35%	43%	42%
Mass abdomen	38%	17.8%	13%	33%
Classical Triad	33.3%	7%	15%	0%

**ASSOCIATED PATHOLOGY OF CYST****Table 9: shows the complications of cyst at presentation in percentages**

Complication of Cyst	Present Series	NA wani et al series
Cystolithiasis	16%	20%
Choledocholithiasis	20%	30%
Cholelithiasis	4%	0%
Pancreatitis	9%	30%
Cholangiocarcinoma	0%	28%
Cirrhosis	0	0

**TYPE OF CYST****Table 10: shows incidence of type of cysts in different series**

Type	Present Series	Todani et.al.	NA wani et al
I	88%	79%	71.4%
II	0	13%	17.8%
III	0	4%	0%
IV	12%	2.6%	7%
V	0	0.5%	3.5%

**CONCLUSIONS**

- The incidence of choledochal cyst in Osmania General Hospital (admission is 1:10,000) which is comparable to Asian population.
- The incidence among male: female is about 1:3.5
- Mean age of incidence of Choledochal cyst is 17.24 yrs.
- Recurrent cholangitis is the most common clinical presentation in this series.
- The incidence of classical triad of symptoms (pain abdomen, jaundice & mass per abdomen) is 33.3%, which is high comparable to other series.
- Ultrasound abdomen is the primary mode of investigation with 96% sensitivity. ERCP has 100% sensitivity.
- Type I Choledochal cyst is the most common presentation. Type II, III & V are not encountered.
- Associated complication incidence in this series is 60% comparable to western series.
- The incidence of malignancy is 0 in this series as against 3-8% in western series.
- Surgical excision of cyst followed by Roux-en-Y hepatico jejunostomy is the surgical treatment of choice.

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