Common Bile Duct Obstructions

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Abstract: ***Disorders of the biliary tract affect a significant portion of the worldwide population, and majority of cases are attributable to cholelithiasis Regardless of the cause, the physical obstruction of cbd causes a predominantly conjugated hyperbilirubinemia, which in turn lead to many complications.***

Keywords: Common Bile Duct, Obstruction, Endoscopic Retrograde Cholangiopancreatography, Billioenteric anastomosis

1. Introduction

Disorders of the biliary tract affect a significant portion of the worldwide population, and majority of cases are attributable to cholelithiasis. Gallstones are the most common cause of biliary tract obstruction. Other causes of blockage within the ducts include malignancy, infection, and biliary stricture. External compression of the ducts may occur secondary to inflammation (e.g., pancreatitis) and malignancy.

Regardless of the cause, the physical obstruction of cbd causes a predominantly conjugated hyperbilirubinemia, which in turn lead to many complications which are;

Complication of biliary obstruction:

- Cholangitis due to prolong CBD obstruction,
- Biliary cirrhosis & liver failure,
- Renal failure & cardiovascular impairment,
- Nutritional deficiencies,
- Impairment in wound healing & Immunity,
- Coagulopathy
- Management

Multiple treatment modalities have been developed over the years to treat CBD obstruction. Open surgery was the cornerstone for treatment of CBD stones for many decades. Newer methods of intervention have been developed. Endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic biliary sphincterotomy (EBS) have opened new avenues in management of patients with CBD stones, enabling gastroenterologists and surgeons to treat patients without resorting to a laparotomy [1].

The most recent innovations include laparoscopic exploration of the biliary tree and stone removal [2].
Treatment mainly includes Decompression of the biliary system which can be performed endoscopically, with placement of a stent after sphincterotomy or Percutaneous transhepatic biliary drainage or surgical decompression [3]. Operative biliary decompression is associated with much higher morbidity and mortality compared with endoscopic therapy, but with higher success rate.

2. Aims and Objectives

- To study the incidence of causes of cbd obstruction.
- To study Mode (benign or malignant) of presentation of CBD obstruction.
- To study age and sex incidence & distribution in cases of cbd obstruction.
- To study various management modalities in cbd obstruction, with special consideration to diagnostic and therapeutic role of ERCP.
- To study the results of definitive radical surgery and palliative surgery in malignant obstruction.

3. Methods and Materials

In this study 35 cases were studied prospectively & retrospectively in Civil hospital and Gujarat cancer and research institute (GCRI) Ahmadabad during JAN 2007 to DEC 2011.All patients were assessed preoperatively, intra operatively and postoperatively, and the findings were recorded in a pre-tested structured questionnaire (proforma), on the basis of references available in the literature and with guidance of my teacher's experience.

After filling the details of Proforma a master chart was prepared. Detailed analysis was done & various observations derived, discussed & concluded.

3.1 Selection of Patients

Major criteria are as follows:

a. Patients presenting with obstructive jaundice clinically, were proved to be having cbd obstruction by USG were only selected.
b. All patients operated electively.
c. No other surgically correctable intra abdominal disease or disorder present.
d. Patient refused for surgery or any interventions were excluded.
e. Some routine investigations were performed in all patients with minor variations and largely similar pre-operative preparations were made for all patients.

The facility of therapeutic ERCP was not available in the Civil Hospital Ahmedabad during the study period. So the patients who underwent ERCP for choledocholithiasis or palliation, in the private hospitals or at GCRI in the city of

Ahmedabad were included in the study. Preoperative preparation Informed consent of the patient was obtained. Procedure complication as well as outcome of Surgery or ERCP explained to the patient.

- Shaving &application of beta scrub was done before surgery.
- Good hydration was maintained.
- Administration of antibiotics,
- Intravenous dextrose (10%) solution and Vitamin K injections were given.
- In anaemic patients blood transfusion was also carried out.

The nature of surgical procedure carried out depended upon the cause and the findings at the time of surgery.

4. Observation and Discussion

4.1 Age Incidence

The youngest patient was 22 yr old and the oldest patient was 90 years old, highest incidence of choledocholithiasis in present study is between 46 – 60 years of age. In This study mean age for choledocholithiasis is 54 years, correlate with Pitt et al study which reported mean age 42 years. 51% cases (n=18) were presented in 46-60 yr age group. The majority of patients with cbd obstruction were in the range of 60 to 69years old in male and 50 to 59 years in female in Tehran study similar with (our) this study in which majority of pts in 61-75yr old in male and 46-60 yr in females.

4.2 Sex Incidence

*In present study majority of pts were female (68.5%).The **Female: Male** was approximately **2.2:1**.
*In males malignant obstruction were more common (in 63.64%), while in females most of were benign (in 66.67%).
* 80% of pt with benign cause were female & only 20% were male.
* 53% of pt with malignant cause was female & 47% were male.
In Tehran study (131) 59 were male, 74 were female (total n= 133).
61% male and 59.4% female pts having malignant obstruction.

4.3 Etiology of CBD Obstruction

The etiology of CBD obstruction was benign in 20 (57.14%) cases, whereas 15(42.86%) patients had malignant cause.
*Choledocholithiasis was the commonest cause among the benign group in 15 (75%) patients, whereas the commonest tumour among the malignant group was carcinoma of the head of pancreas in 7 (46.67%) patients.

4.4 Clinical Presentation

Among symptoms Jaundice was present in 100% cases (n=35)
*Pain in abdomen present in 68.6% (n=24), more commonly in benign cases in 62.5 %(n=15)
*Clay colored stool present in 57.2% (n=20), was more common in malignant cases 55% (n= 11).
*Pruritis & Scratch marks were equal in both benign & malignant cases.
*Anorexia & Wt loss present in 40 %(n=14) more frequently found in malignant obstruction 71.4 %(n= 11).
FEVER: 34.3% of patients had fever on admission, suggesting cholangitis.
Past h/o jaundice suggestive of recurrent cbd obstruction, mostly present in cbd stone cases i.e. benign obstruction.
*Hepatomegaly was appreciated in advanced malignancy, in 3 cases. Palpable GB was there in cases of malignant obstruction thus supporting Courvoisier's law.

4.5 Treatment

A total of 25 (71.4%) patients underwent open surgical treatment and the remaining 10 (28.6%) of the patients undergone for ERCP. Of 10 pts who undergone for ercp, 3 patients had malignant jaundice as these were having medical disorder and elderly with advanced disease with low survival rate. Laparoscopic surgery was not done for cbd obstruction.

Intervention	*Benign*	*Malignant*	*Total*	*Percentage*
Ercp	7	3	10	28.6
Surgery	13	12	25	71.4

5. Conclusion

CBD Obstruction is a common surgical problem poses diagnostic and therapeutic challenges. It is more common among females. But malignant obstruction is more common in males. The benign etiology is seen in young patients while malignant causes in elder age group. Carcinoma of the head of pancreas is the commonest malignant cause of obstruction whereas stones in the bile duct the commonest benign etiology. The majority of patients with Choledocholithiasis were treated with Choledochoduodenostomy, as pt presented with adequate cbd diameter, and CD has potential advantage of drainage procedure with removal of stones [4, 5, 6]. No single case was presented with retained stone in follow up. Pt with normal cbd diameter or associated comorbidities and cbd stones were treated with ercp Retained stones were found in 2 pts, for which second ercp procedure was done, which in turn lead to increase morbidity. In malignant cases, if pt present earlier in course of disease, i.e. tumour is resectable pt can be treated with curative surgery along with chemotherapy to increased survival. Regression of jaundice and symptomatic improvement was more with surgical procedure than with therapeutic ERCP. Role of palliation is mainly to improve quality of life in malignant cases, so both surgery and ercp is advised according to condition of pts, available facilities, and expertise.

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