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Experience of Different Management Strategies in Extra Hepatic Biliary Obstruction at Mayo Hospital Lahore

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ABSTRACT

Study design: This was descriptive type case series of 50 patients presenting with biliary obstruction.
Duration: Duration of the study is two years conducted from June 2002 to May 2004.
Settings: The study was carried out at the North Surgical Ward Mayo Hospital Lahore. The patients included were hospitalized cases admitted either through the out patients department or referred to from other Hospitals.
Sample size: 50 cases of biliary obstruction were included. The diagnosis made was mainly on clinical grounds by correlating the symptoms and signs.
Results: 50 patients (21 males and 29 females) with extrahepatic biliary obstruction were admitted to the North Surgical Ward Mayo Hospital Lahore between June 2002 to May 2004. The age varied from 21 years (minimum) to 85 years (maximum). The mean age being 850-49 years, median 49-75 years and the mode was 55 years. Amongst the patients, 29 (58%) were females and 21(42%) were males. The reasons for obstruction were stones in the common bile duct in 15(30%) patients, chronic pancreatitis in 1(2%), CBD ca in 5(10%), gall bladder ca in 8(16%), ca pancreas in 15(30%), metastatic ca in 2(4%) and periampullary ca in 4(8%) patients.
Conclusion: New diagnostic technique like CT scan, ERCP,PTC,MRCP and choledochoscopy have revolutionalized the management of obstructive jaundice for high-risk patients of malignant obstruction. The prognosis of obstructive jaundice can only be improved by early detection of the malignancy.
Key words: Obstruction, extrahepatic, strategies

INTRODUCTION

The aims of this study were to compare the presentations of extrahepatic biliary obstruction in benign and malignant disease, to find out the post operative morbidity and mortality following different surgical techniques in the teaching Mayo Hospital Lahore and to determine the factors affecting the outcome of surgery.

MATERIAL AND METHODS

Fifty patients (21 males and 29 females) with extrahepatic biliary obstruction were admitted to the North Surgical Ward Mayo Hospital Lahore between June 2002 to May 2004. Cases inadequately investigated or those who left against the medical advice before establishment of the final diagnosis and operation were excluded from the study. Provisional diagnosis was made on the basis of clinical features and standard biochemical tests. Biochemical tests were followed by abdominal ultrasonography (USG) in all patients. Further imaging tests like tests endoscopic retrograde cholangiopancreatography (ERCP), percutaneous-transhepatic cholangiography (PTC), computerized tomography (CT) or magnetic resonance cholangio-pancreatography (MRCP) were used where appropriate to determine the exact nature of obstruction.

Operative mortality is defined as post operative death within 30 days due to a cause related to the operation. Metabolic and biochemical derangements were attempted at correction in the preoperatively period. After appropriate investigations and correction of coagulopathy, surgical intervention was undertaken. All patients received preoperative antibiotics and intravenous fluids to maintain a urinary flow of 0.5 to 1.0 ml per kg per hour. These were continued in the post operative period. The operative and histological findings were recorded. The relative incidence of extrahepatic biliary obstruction was calculated.

RESULTS

We selected 50 patients with features of extrahepatic biliary obstruction (that is obstructive jaundice).Out of these (n 50) 16 patients (32%) suffered from benign diseases while those having malignant diseases were 34 (68%).

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Table 1

Cause	=n	%age
Stones in CBD	15	30
Chronic Pancreatitis	1	2
Ca Pancreas	15	30
Ca Gall Bladder	8	16
Ca CBD	5	10
Periampullary Ca	4	8
Metastatic Ca	2	4

Table 2: Various surgical procedures were performed for these patients, which are listed in the table below:

Operation	CBD stones	Pancrea-titis	Ca Pancreas	Ca gallbladder	Periampullary Ca	Ca CBD	Metastatic Ca
No. of patients	15	1	15	8	4	5	2
CBD exploration + cholecystectomy	13						
Cholecystostomy			1			1	
Choledochotomy	2						
Choledochoduodenostomy			4				
Cholecystojejunostomy			4				
External drainage			1		1	1	
Whipple's			1				
Pancreatojejunostomy		1					
Biopsy alone			4	6		1	1
Portoenterostomy			4	6		1	1

19(38%) patients died within two years of follow up while 19(38%) were the survivors. 12(24%) did not come for follow up. Mortality was maximum for the malignant cases. In benign cases only one patient died, she had stones in her CBD and she has undergone four surgeries for recurrent stones. She has impaired renal functions and was suffering from coagulopathy as well. Maximum deaths 6(12%) occur within 7-12 months period and in the period of up to one month of operation 6(12%), 2(4%) patients died within 1-3 months, 2(4%) in 4-6 months and 3(6%) died in 13-24 months period.

Infections, renal failure and multiple organ failure was the final outcome and cause of death in majority of those who died. The cause of death was infection + renal failure in 2(4%) of cases, infection + renal failure + multiple organ failure in 11(22%), infection + multiple organ failure in 4(8%) and renal + multiple organ failure in 2(4%) of the patients.

26 patients had one or another complication of operation and hence the morbidity came out to be 54%, out of whom 15(30%) suffered wound sepsis. Those who had wound dehiscence were 2(4%). Chest infection was present in 6(12%) cases. Renal function impairment in 8(16%) and GI hemorrhages was found in 2(4%) patients.

Table 3: Sex distribution

Benign Disease	Male	Female
CBD Stones	5	10
Ch Pancreatitis	1	
Malignant Disease		
Ca Pancreas	7	8
Ca Gall bladder	1	7
Periampullary Ca	3	1
Ca CBD	3	2
Metastatic Ca	1	1

Table 4 Mortality

	CBD stones	Pancrea-titis	Ca pancreas	Ca gallbladder	Periampullary Ca	Ca CBD	Metastatic Ca	Total
No of patients	15	1	15	8	4	5	2	50
0-1 month	1		1	2		1	1	6
1-3 months			2					2
4-6 months			1	1				2
7-12 months			3	2	1			6
13-24 months			2		1			3
No follow up	11		6	3	1	2	1	24

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Table 5 Operative mortality and cause of death

No. of dead	Operations performed	CAUSE
1	Choledochoduodenostomy	Infection + renal failure
2	Choledochoduodenostomy	Infection + renal failure
3	Choledochoduodenostomy	Inf + fr + mof
4	Choledochoduodenostomy	Mof +inf
5	Biopsy	Inf + rf + mof
6	Biopsy	Mof + inf
7	Biopsy	Inf + rf + mof
8	Biopsy	Inf + rf + mof
9	Biopsy	Inf + rf + mof
10	Biopsy	Mof + inf
11	Biopsy	Inf + rf + mof
12	Biopsy	Inf + rf + mof
13	Biopsy	Inf + rf + mof
14	Cholecystostomy	Mof + inf
15	Cholecystostomy	Inf + rf + mof
16	Cholecystojejunostomy	Rf + mof
17	Cholecystojejunostomy	Mof + inf
18	Cholecystojejunostomy	Rf + mof
19	Cholecystojejunostomy	Inf + rf + mof

Table 6: Post op complications

	Benign	Malignant	Total
Wound sepsis	7	8	15
Wound dehiscence		2	2
Chest infection	1	5	6
Renal impairment	2	6	8
GI hemorrhage		2	2

DISCUSSION

The common belief that jaundice is caused by some sort of increased heat in the body and that the use of some medicines and cold food could correct the jaundice leads to maltreatment and very late presentation. Most patients are afraid of operation and they try all the non-operative alternatives before coming to the hospital. Moreover, the time spent in referrals also contributes to late presentations. These are the reasons why majority of patients with malignant obstructive jaundice come to the hospital when the growth is far advanced and even surgical palliation is not possible in most cases. This fact is evident from our study as in many patients with malignant disease no palliation was possible and only biopsy was performed.

The commonest cause of extrahepatic biliary obstruction in our case series was malignancy (68%). This is a high incidence that is reported in literature 37.2%, 42.4%, 48%, 59%, 19.3%. The presentation of obstructive jaundice is very high in the 5th and 6th decade of life. The mean age of 50.49 years, median being 49.75 years. The number of females suffering from the disease is more than the males (58% vs 42%). The carcinoma of gallbladder was had a very high female preponderance and male to female ratio was 1:7 in our study, while the reported ratio is 1:3 and 1:5.

The carcinoma of pancreas and CBD stones is more prevalent amongst the females. The male to female ratio being 7:8 and 5:10 respectively. The carcinoma of CBD and periampullary carcinoma on the other hand is commoner in males. The ratio being 3:2 and 3:1 respectively.

No palliative procedure was possible in 24% patients with malignant obstruction. Therefore biopsy alone was done. The rate of mortality in these patients was high. Two patients died of infection and renal failure, eleven patients died of infection, renal failure and multiple organ failure. Four died of infection and multiple organ failure and the cause of death in two patients was renal failure and multiple organ failure. 24% patients did not come for regular follow up.

Choledochoduodenostomy was performed in seven patients. It takes more time than cholecysto-jejunostomy and per operative bleeding was also more.

Cholecystojejunostomy was performed in four patients. This is rapid to perform and is easiest on a dilated gallbladder.

By comparing these procedures it is clear that choledochoduodenostomy should be the procedure of choice whenever possible because it has a low complication and mortality rate as compared to cholecystojejunostomy. The results are comparable to that in the literature.

Most surgeons prefer choledochoduodenostomy if an internal bile drainage must be performed. A single bypass using the gallbladder anastomosed with jejunum is preferred in those cases where life expectation is estimated to be less than three months. Delayed gastric emptying is a frequent complication after cholecystojejunostomy. Double by passes are recommended in those cases only where the duration of life is estimated to be more than three months.

In patients undergoing CBD exploration for stones, the post operative septic complications remained a major problem. In these patients, septic complications occurred in six (46%) out of thirteen patients and this is a much higher rate reported which is 26% and 19.5%. There was no mortality in this group of CBD exploration for benign problems. The reported mortality rate of CBD exploration for stones is between 0.5% to 3%. One patent who underwent choledochotomy for CBD stones died in the post operative period. She had stones in her CBD and she had undergone four surgeries for recurrent/residual

stones. She had impaired renal function and was suffering from coagulopathy as well.

Most patients with malignant extrahepatic biliary obstruction had advanced disease at presentation, which was inoperable.

The complications that occurred in the extrahepatic biliary obstruction patients were wound sepsis in 30%, wound dehiscence in 4%, chest infection in 12%, renal impairment in 18% and GI hemorrhage in 4% patients. The complication rates reported in the literature are as follows: wound sepsis in 3.1%; wound dehiscence in 2%; renal failure between 5% to 12% and postoperative bleeding 3.1%. Therefore it is obvious that in the present study the rate of septic complications is very high.

The operative mortality is 38% in this study, which is very high. This is because most patients reported were referred cases from cases from the military hospitals all over the country of advanced malignancy having poor survival. The reported mortality rates are much low, 7.5% in elective cases and over 10% in emergency cases.12 patients (24%) out of 50 could not be followed. Maximum survived for patients of biliary malignancy was two years. All patients of carcinoma pancreas that could be followed were dead in two years.5 patients out of 8 patients of carcinoma gallbladder died in the first year. 1 patient of carcinoma CBD died during the first month, 2 could not be followed up.

Mortality not only depends on the operation performed, the condition of the patient nature and stage of the disease etc also contribute. In this regard various risk factors having predictive vale which increase the mortality like serum bilirubin levels, serum albumin, serum creatinine, prothrombin time, TLC, PCV, whether the disease is malignant, age more than 50 years are defined.

CONCLUSION

Obstructive jaundice is a common surgical problem with considerable morbidity and mortality. Infection, renal failure and gastrointestinal hemorrhage are the main causes of the operative mortality and morbidity.

Despite the advancement in the understanding of the biochemistry, immunology and microbiology in obstructive jaundice and identification of the risk factors, mortality and morbidity has not decreased in the past three decades.

New diagnostic technique like CT scan, ERCP,PTC,MRCP and choledochoscopy have revolutionalized the management of obstructive jaundice for high-risk patients of malignant obstruction. The prognosis of obstructive jaundice can only be improved by early detection of the malignancy.

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