

ETIOLOGICAL SPECTRUM OF OBSTRUCTIVE JAUNDICE

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ABSTRACT

Objective: The objective of this study was to determine the etiological spectrum of obstructive jaundice in this part of the world.

Material and Methods: This prospective study was carried out at Liaquat National Hospital, Karachi from March 1997 to February 2001 and later at Isra University Hospital, Hyderabad from January 2003 to December 2006. Sixty five patients with obstructive jaundice were included in this study. The data was collected with respect to patient's identity, age, gender and cause of the obstructive jaundice.

Results: Fifty seven percent of patient had malignant obstructive jaundice and carcinoma of head of pancreas being the leading cause of malignant obstructive jaundice. Forty three percent patients had benign causes of obstructive jaundice, choledocholithiasis being the most common benign cause.

Conclusion: Choledocholithiasis and malignancy are the two major causes of obstructive jaundice.

Key words: Obstructive jaundice, Choledocholithiasis, Carcinoma head of pancreas.

INTRODUCTION

Obstructive jaundice is the partial or complete reduction in secretion and/ or a block to the flow of bile and its components into the intestinal tract, normally the duodenum. Early diagnosis and timely treatment of the ailment is important because unrelieved obstruction can cause pathological changes in the liver (e.g. secondary biliary cirrhosis) and also increases the mortality and morbidity.¹ Hepatobiliary surgery for obstructive jaundice is associated with the mortality rates around 20%.^{2,3} Local guidelines should be in place and widely publicized to facilitate timely investigations and management and avoid complications.⁴ Choledocholithiasis and malignancy are the common causes of obstructive jaundice. Choledocholithiasis is treated with endoscopic retrograde cholangiopancreatography (ERCP) or by surgical intervention depending upon the availability of facilities and general condition of the patient. Malignant obstruction may be inoperable because the lesion is not resectable. In such situations, management is directed towards palliation by endoscopic / radiological stenting or

bypass procedures. The curative resection may be possible in those fortunate patients with malignant obstruction in whom early diagnosis is made. The objective of this study was to determine the etiological spectrum of obstructive jaundice in this part of the world.

MATERIAL AND METHODS

This prospective observational study was carried out at Liaquat National Hospital, Karachi from March 1997 to February 2001 at Isra University Hospital, Hyderabad from January 2003 to December 2006. The sampling strategy employed in this study was the convenient type. This study included all those patients which presented with features suggestive of obstructive jaundice. There were 65 patients with obstructive jaundice during the above mentioned study period. These include 36 females and 29 male patients. The diagnosis of obstructive jaundice was made on the basis of history, physical examination and laboratory investigations like liver function tests (LFT). Apart from liver function tests, the patients also underwent all routine blood investigations. Ultrasonography was the premier initial

CAUSES OF OBSTRUCTIVE JAUNDICE (n= 65)

Aetiology	Number (%)
Choledocholithiasis	23 (35%)
Carcinoma head of pancreas	13 (20%)
Periampullary carcinoma	07 (11%)
Low cholangiocarcinoma	07 (11%)
Carcinoma gall bladder	04 (6%)
Metastatic nodes at porta hepatic	04 (6%)
Iatrogenic	03 (4.6%)
High cholangiocarcinoma	02 (3%)
Ischaemic stricture	01(1.5%)
Post laparoscopic cholecystectomy stricture	01(1.5%)

Table 1

investigation in all these patients to get the initial working diagnosis of obstructive jaundice. Those patients in which ultrasonography and laboratory investigations did not confirm the diagnosis of obstructive jaundice were excluded from the study. Further investigations like endoscopic retrograde cholangiopancreatography (ERCP), percutaneous transhepatic cholangiography (PTC), magnetic resonance cholangiopancreatography (MRCP) or CT scan were done according to the findings of ultrasonography. The data was collected with respect to patient's identity, age, gender and cause of the obstructive jaundice. The data collection was done prospectively during the hospital stay of patient. Finally data was analyzed and frequencies of various etiologic factors were presented in percentages.

RESULTS

A total of 65 patients with obstructive jaundice during the above mentioned study period. There were included 36 females and 29 male patients. The mean age was 49 years with the range being 25 to 72 years. All patients underwent ultrasonography as a primary investigation to determine the cause of obstructive jaundice. The malignant etiology was found in about 57 % (37/65) of patients. Among thirteen patients with carcinoma head of pancreas, two underwent Whipple's pancreaticoduodenectomy whereas eleven had palliative by pass procedures. Seven patients had periampullary carcinoma and the diagnosis was confirmed by ERCP and biopsy / brushings from periampullary region. Three of these seven patients had Whipple's pancreaticoduodenectomy while remaining four patients underwent palliative bypass procedures. Among seven patients with low cholangiocarcinoma, five had hepaticojejunostomy whereas two had

Whipple's pancreaticoduodenectomy. External biliary drainage was done in six patients including two patients with high cholangiocarcinoma and four patients with metastatic nodes at porta hepatis. Four patients with carcinoma of gall bladder had inoperable disease and, so no aggressive treatment was done in these patients. The malignant causes of obstructive jaundice are shown in figure 1.

Benign causes including Choledocholithiasis, post operative laparoscopic cholecystectomy stricture, ischaemic stricture and iatrogenic CBD ligation were observed in 43% (28/65) of patients. Choledocholithiasis was the commonest benign cause and was observed in 23 patients. Out of these 23 patients, 11 had ERCP and stone removal followed by laparoscopic cholecystectomy. Remaining twelve patients underwent open cholecystectomy and CBD exploration as ERCP facility was not available in the center where second part of the study was carried out. Ten patients had CBD stones removed by supraduodenal CBD exploration and T-tube placement. One patient had transduodenal sphincteroplasty for impacted stone in lower CBD and another underwent choledochoduodenostomy. The benign causes of obstructive jaundice are shown in figure 2. A detailed account of etiological spectrum is mentioned in table 1.

DISCUSSION

Obstructive jaundice results from biliary obstruction and is a frequently encountered condition in surgical wards. Biliary obstruction refers to blockage of any duct that carries bile from liver to gall bladder or from gall bladder to intestine. It can be due to intra-hepatic or extra-hepatic causes. Extrahepatic causes are subdivided into intraductal and extraductal aetiologies. Neoplasms, choledocholithiasis, biliary stricture, parasites and primary sclerosing cholangitis lead to intraductal obstruction. External compression of biliary channels by neoplasms, pancreatitis or cystic duct stones with subsequent gall bladder distension leads to extraductal obstruction.⁵ In the

Fig 1. MALIGNANT CAUSES OF OBSTRUCTIVE JAUNDICE (n= 37)

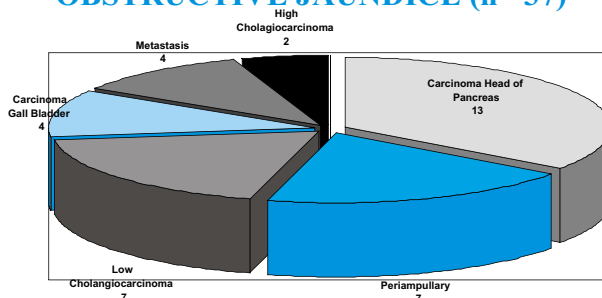
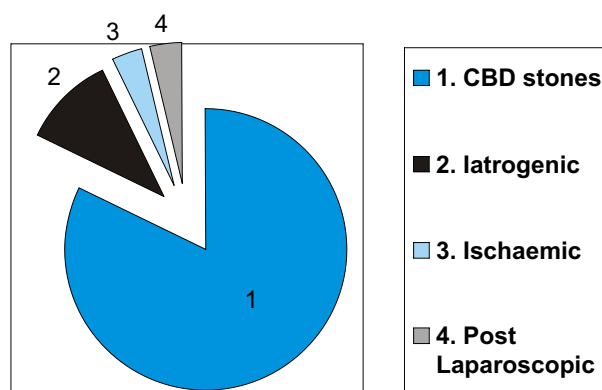


Fig 2. BENIGN CAUSES OF OBSTRUCTIVE JAUNDICE (n= 28)



modern era, patients with obstructive jaundice of different causes can expect to be operated on with a low mortality and their morbidity can be reduced by simple clinical interventions.⁶

Different studies have reported various causes of obstructive jaundice. In this study, 57% of the patients with obstructive jaundice had malignant etiology and carcinoma head of pancreas was the leading cause among them. Sharma et al⁷ in a study of 429 patients reported that about 75% had malignant etiology whereas remaining 25% had benign cause. Carcinoma of gall bladder (28.7%) was reported to be the commonest etiology followed by carcinoma of pancreas (26.5%), Choledocholithiasis (12.4%), cholangiocarcinoma (10.8%), benign strictures (10.8%) and ampullary carcinoma (9.8%). Malignancy is reported to be the leading cause of obstructive jaundice in other studies as well.^{8,9} In a study of 82 patients from China revealed cholangiocarcinoma as the leading cause of malignant obstructive jaundice (27%) followed by pancreatic cancer (24%), metastatic carcinoma (21%) gall bladder carcinoma (17%) and hepatocellular carcinoma (10%).¹⁰ In another study of 241 patients with obstructive jaundice 64% of the patients had malignant cause. Carcinoma of pancreas was the most common malignant cause seen in 46 % of the patients followed by cholangiocarcinoma (29%), periampullary carcinoma (3%) and other malignancies (23%). Of the 87 patients with a benign obstruction, 65% had Choledocholithiasis, 8% had biliary strictures, 6% had primary sclerosing cholangitis and 21% had other causes.¹¹ Other rare malignant causes of obstructive jaundice reported in the literature are primary non-Hodgkin's lymphoma of duodenum¹², ganglioneuroblastoma¹³ and squamous cell carcinoma of distal common bile duct.¹⁴ None of these rare malignant causes was observed in this study.

The benign etiology was observed in about

43% (28/65) of the patients with obstructive jaundice in this study as compared to the figures of 16 to 49% reported in other local studies.^{15,16} Among the 28 patients presenting with benign causes of obstructive jaundice, Choledocholithiasis was the commonest benign cause of obstructive jaundice observed in about 82% (23/28) and this fact has also been reported in earlier local studies.^{5,16} In a study from Africa Beckle et al¹⁷ found 41% of patient having Choledocholithiasis as commonest benign cause while 22% of the patients had malignant obstructive jaundice. Other rare benign causes of obstructive jaundice reported in the literature are Fascioliasis¹⁸ and isolated pancreatic tuberculosis.¹⁹ None of these rare benign causes was observed in this study. The absence of palpable gall bladder in most patients with biliary obstruction from duct stones is the basis for Courvoisier's law, i.e. that the presence of a palpable enlarge gall bladder suggests that the biliary obstruction is secondary to an underlying malignancy rather than to stone disease.

CONCLUSION

The commonest benign and malignant causes of obstructive jaundice were Choledocholithiasis and Carcinoma head of pancreas respectively. Other common malignant causes observed in this study were Cholangiocarcinoma and Periampullary carcinoma.

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