

Extrahepatic Biliary Obstruction: A Study Of Aetiological Factors In A Teaching Hospital.

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A prospective study was carried out from January 1995 to July 1996 to determine etiological incidence of extrahepatic biliary obstruction in a general surgical department of a teaching hospital. One hundred and twenty four such cases were treated during this period, majority (66.9%) were females. Non malignant conditions (50.4%) outnumbered malignant causes. Choledocholithiasis was the single most common cause (47.2%) followed by carcinoma head of pancreas in 22.8% and carcinoma gallbladder in 20.5% cases. Rest of the causes were responsible for only 9.5% cases. Early management of cholelithiasis is likely to substantially reduce the incidence of extrahepatic biliary obstruction

Key Words: Extrahepatic biliary obstruction, obstructive jaundice, Choledocholithiasis, carcinoma gallbladder, carcinoma pancreas

Obstructive jaundice is a frequently encountered surgical problem. It has numerous causes, incidence of which varies greatly with age, sex and geography. Choledocholithiasis is reported as the commonest cause of obstructive jaundice in western literature whereas parasitic infestation is not an uncommon cause in the orient¹. As the final outcome is highly cause related, management based on early and correct etiological diagnosis ensures cure in many patients and prevents a multitude of complications associated with prolonged jaundice. Even in incurable lesions worthwhile palliation can be provided to improve quality of life¹.

With progress in various imaging techniques the available range of diagnostic modalities is quite diverse and impressive. The data available in Pakistan on the etiological incidence is scanty. This study aims at determining the etiological incidence of obstructive jaundice in Pakistan.

Materials and Methods

In the period from January 1995 to July 1996, 124 patients of obstructive jaundice were studied in Mayo Hospital Lahore, in order to determine the etiological incidence of obstructive jaundice. These patients were either referrals or admitted through OPD or emergency. Provisional diagnosis of obstructive jaundice was made on clinical features and standard biochemical tests. Patients with medical causes of jaundice and children below 12 years of age were excluded.

Biochemical tests were followed by abdominal ultrasonography (USG) in all patients. Further imaging tests like endoscopic retrograde cholangiopancreatography (ERCP), percutaneous transhepatic cholangiography (PTC) or computerised tomography were used where appropriate to determine the exact nature of obstruction. HIDA scan was used in situations associated with acute cholecystitis or where a choledochal cyst was suspected. Ultrasound guided fine needle aspiration cytology (FNAC) was attempted when USG suggested a malignant lesion. After appropriate investigations and correction of coagulopathy, surgical intervention was undertaken. The

operative and histopathological findings were recorded. The relative incidence of the different causes of obstructive jaundice was calculated.

Results

There were 85 female (66.9%) and 42 male (33.1%) patients with ages ranging from 21-75 years to years and a mean age of 49.4 years. Sixty four patients (50.4%) had a variety of benign lesions as the underlying cause of obstructive jaundice, while 63 (49.6%) suffered from malignant causes. The etiological incidence is shown in table I.

Table I Etiological incidence of obstructive jaundice

Aetiology	No. of Pts.	%age
Choledocholithiasis	60	47.2
Carcinoma head of pancreas	29	22.8
Carcinoma gall bladder	26	20.5
Ampullary carcinoma	5	3.9
Cholangiocarcinoma	3	2.4
Benign strictures	3	2.4
Choledochal cyst	1	0.8

Maximum number of patients i.e. 35 presented in the fifth decade of life (27.6%) followed by nearly equal distribution in the 6th (18.1%) and 7th (18.9%) decade. No patient presented during the 2nd decade of life. The mean age of patients with a benign lesions was 49 years while for malignant lesions 51 years.

Table II Age Incidence in Years

Aetiology	Males (Mean age)	Females (Mean age)
Choledocholithiasis	58.30	45.2
Carcinoma head of pancreas	55.8	55
Carcinoma gall bladder	56.66	45
Ampullary carcinoma	41.8	55
Cholangiocarcinoma	41.6	
Benign strictures	45	
Choledochal cyst		25

The age incidence and sex distribution for the various diseases in the present study are shown in table II and III respectively. The overall female to male ratio in this study was 2:1. However in the 7th decade the incidence of obstructive jaundice was almost equal and in the 8th decade men outnumbered women.

Table III Sex Incidence

Aetiology	Total	Female	Male
Cholelithiasis	60	45	15
Carcinoma head of pancreas	29	17	12
Carcinoma gall bladder	26	20	6
Ampullary carcinoma	5	2	3
Cholangiocarcinoma	3	-	3
Benign strictures	3	-	3
Choledochal cyst	1	1	-

Cholelithiasis was the commonest cause of obstructive jaundice with preponderance in female sex (75%). In 29 patients with carcinoma head of pancreas 17 were female (58.6%). Carcinoma gallbladder was the next common cause present in 26 patients of these 20 were females (76.9%). Three cases each of benign strictures and cholangiocarcinoma were all males.

Discussion

Cholelithiasis was the commonest cause to obstructive jaundice (47.2%) in the present study which corresponds to 44% reported by Pasanen et al.². These results however, differ considerably from a local study by Mushtaq Ahmad in which malignant diseases were twice as common as benign lesions³. The occurrence of cholelithiasis in females was three times greater than males which is closer to that reported in the western literature (2-3:1)^{1,5}. Other studies from Pakistan report 4 to 7 times higher incidence in females^{4,6,7,8,9}. The higher incidence of obstructive jaundice in females is directly related to more frequent occurrence of gallstone disease in women¹⁰. In addition women present at a younger age than men. Women presented with cholelithiasis in all age groups starting from the 3rd decade and peaked in 4th decade. Contrary to this peak incidence in men was seen in the 7th decade, prior to that there were only 5 cases. The higher incidence of the disease in lower age group females is perhaps related to a greater exposure to high oestrogen levels resulting from early and multiple pregnancies^{11,12}.

The second most frequent cause of obstructive jaundice was carcinoma head of pancreas i.e. 22.8% as against 17.6% reported by Pasanen et al.². It is a disease of older age. The incidence of pancreatic cancer is increasing, especially in women¹³. Contrary to literature our study showed female preponderance (58.6%). The maximum incidence of the disease seen in the 4th decade in women and 6th decade in men is probably due to the lower mean ages as compared to the more developed countries.

The incidence of gall bladder carcinoma in western literature is quoted as 0.6%-1%¹⁴ which is much lower than that reported from the subcontinent¹⁵. In our study it was the third commonest cause (20.5%) of obstructive jaundice with a female to male ratio of 3:1 and a maximum incidence in the 6th decade. Similarly studies from Chile also indicate carcinoma gallbladder to be a major cause of death in females¹⁶. This variance in figures is attributed to high incidence of gall stone disease in the younger females and typhoid carrier state¹⁷. The remaining causes of malignant obstructive jaundice include ampullary carcinoma (3.9%) and cholangiocarcinoma (2.3%). The mean age of the three male patients with cholangiocarcinoma was 42 years. Traditionally regarded as a disease of the elderly it occurs in a significant number of young patients¹⁸.

Benign strictures of the biliary tract are unfortunate complications of operations in the right upper quadrant of the abdomen. Injury during cholecystectomy is the cause in about 95% of cases¹⁹. The incidence of such injuries is about 0.5% for open cholecystectomy²⁰. Increasing use of laparoscopic cholecystectomy has resulted in a higher reported incidence²¹. In the present study three male patients (2.3%) had benign biliary strictures. Two were iatrogenic following cholecystectomy. Choledochal cyst was found to be the cause of intermittent obstructive jaundice in a female of 21 years. Choledochal cyst is a rare phenomenon occurring approximately once in 20 million live births²² and only 20% of these present in adulthood^{22,23}. Its incidence as a cause of obstructive jaundice is less than 1%^{22,23}.

Cholelithiasis and carcinoma gallbladder which have strong causal relationship with gallstones, constituted 67.7% of cases. An early management of gallstones is suggested to reduce the risk of extrahepatic biliary obstruction.

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