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ETIOLOGICAL SPECTRUM OF OBSTRUCTIVE JAUNDICE

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ABSTRACT

OBJECTIVE: *To study various causes producing obstructive jaundice*
STUDY DESIGN: *Case Series*
SETTING & DURATION: *Surgical Unit IV of Civil Hospital Karachi, during July 2005 to June 2007*
METHODOLOGY: *This study was conducted on Seventy one consecutive patients diagnosed as Objective Jaundice on clinical grounds. Diagnoses based mainly on clinical features and later on substantiated by Liver Function Tests, Ultrasound of abdomen, ERCP and CT scan; and data of each patient was entered into a Performa.*
RESULTS: *Seventy one patients were included in this study with 51 (71.8%) female and 20 (28.2%) male. Forty patients were diagnosed as having malignant causes of jaundice where as thirty on were cases of benign jaundice. Bile duct stones were the commonest cause of benign obstructive jaundice while carcinoma of head of Pancreas topped the list of malignant Jaundice.*
All patients of benign obstructive jaundice complained of upper abdominal pain while in malignant cases pain was complained by 55%of cases. Serum bilirubin and serum alkaline phosphatase were raised in all cases
CONCLUSION: *Obstructive jaundice is more common among females, malignant causes outnumbered benign causes. The benign jaundice is prevalent in younger patients while malignant causes in elder age group. Carcinoma of the head of pancreas is the commonest malignant cause of jaundice where as stones in the bile ducts the commonest benign etiology. ERCP and CT-scan are important investigations to diagnose the causative factors of obstructive jaundice.*

KEY WORDS: Obstructive jaundice, Choledocholithiasis, pancreatic carcinoma

INTRODUCTION

Jaundice is a common problem in medical and surgical gastroenterological practice. Its causative factors can be determined from clinical features but biochemical and radiological investigations are required to reach at a confirmed diagnosis[1]. Clinical and biochemical data which define the syndrome of "cholestatic jaundice" allow for a correct distinction between intra hepatic and extra hepatic lesions in about 85% of cases[1] The surgical jaundice can be caused by the obstruction of the bile duct as with gall stones, strictures; malignancy; such as Cholangiocarcinoma (where the jaundice is persistent
And progressive), periampullary carcinoma, carcinoma gallbladder and carcinoma head of pancreas. Various rare causes like the castle Mann disease; Caroli's syndrome and metastatic liver tumor have also been reported[2]
The Clinical features of obstructive jaundice include pale stools, dark urine, pain in upper abdomen pruritis, weight loss and anorexia.[3] Raised levels of serum bilirubin and alkaline phosphatase are important laboratory findings.[3,] For diagnosis of causative lesion ultra sonography is the first investigation employed and this can show bile duct stones, dilated intra-extra hepatic channels, any growth in the abdomen etc. Endoscopic Retrograde Cholangiopancreatography (ERCP) is becoming more available and can pick up choledocholithiasis, strictures of CBD, any tumor obstructing the bile duct etc. Computerized tomography, Endoscopic ultrasound, Percutaneous Transhepatic Cholangiopancreatography (PTC) and Magnetic Resonance Cholangiopancreatography (MRCP) are also being used where available. [4]

METHODOLOGY

Seventy one consecutive patients with clinical and biochemical features of obstructive jaundice were prospectively studied between July 2005 and June 2007. Detailed history was taken in all cases with emphases on age, sex, presence of clay colored stools, anorexia, weight loss, pruritis etc. These facts were correlated with the clinical examination findings like presence of jaundice, scratch marks, abdominal mass and hepatomegaly. A provisional diagnosis of surgical jaundice was then made and further investigations done which included the Liver Function tests to see the bilirubin level and the level of serum alkaline phosphatase. Abdominal Ultrasound was done in all cases to determine the blockade and dilatation of Extra hepatic and intra hepatic bile ducts and presence of causative factors like Stones, tumors, lymph nodes, worms etc. ERCP was carried out in some cases to look for the Causes and extent of obstruction. CT scan was done in all cases of suspected malignancy. The final diagnosis was then made on the basis of results of these advanced investigations and histopathology; the results were then compiled.

. A non-sequential, nonrandomized order was followed; the period for completing work up ranged from4 days to 3 weeks, but in most patients(56/71) less than 2 weeks was required. Each patient was individually studied with a full range of clinical and laboratory data. Follow-up continued until definitive diagnosis was established on surgeryhirty-three consecutive patients with clinical and biocuration of jaundice before admission varied widely

RESULTS

This study was conducted on 71 patients who included 51 (71.8%) female and 20 (28.2%) male. The mean age of the study population was 47 years (range 28–81 years). Most of the patients with benign causes were seen in the age group of 28–40 years, while the malignant cases were mainly seen in older age group of 48-81 years.

Forty (56.33%) patients were diagnosed as having malignant causes of jaundice where as thirty one (43.665%) was cases of benign jaundice. All the 30(42.30) cases with benign causes of Obstructive Jaundice presented with pain of varying intensities where as pain was complained by 32(45%) of patients in the malignant group. Weight loss was seen in all 41 with malignant causes but only 16(22.53%) with benign etiology. Pruritis was seen in 55 (77.46%) patients. In benign group 26 (36.61%) patients, whereas 37 (52.11%) with malignancy gave history of clay colored stools. On examination 50(70.42%) patients of both group had scratch marks, equal for both benign and malignant causes. The abdominal mass was palpable in 21 (29.57%) patients with malignancy

Choledocholithiasis was the commonest cause among the benign group and was present in 22 (30.98%) patients; among the cases of malignant obstructive jaundice; commonest tumor was carcinoma head of pancreas seen in 30 (42.30%) cases (Table-1.)Serum bilirubin and serum alkaline phosphatase were raised in all cases. Where as serum ALT was elevated in 45 (63.38%) of the cases.

Abdominal ultrasound reported dilated intra and extra hepatic ducts in 60% and 82 % of the cases respectively. Bile duct stones were detected in only 55% of patients. The CT-Scan was most helpful in diagnosing different causative tumors in 90% of cases. ERCP was able to demonstrate the dilated bile duct and stones in it in 78.3% of the benign cases. Diagnoses of malignant cases were; Ca Head of Pancreas in 30 (42.24) peri ampulary carcinoma, 3(4.22%) Cholangiocarcinoma in 5(7.04) and Ca-Gall Bladder 3 (4.22)

TABLE:
ETIOLOGICAL CAUSES OF OBSTRUCTIVE JAUNDICE

Cause	No	%
Choledocholithiasis	22	30.98
Stricture of Bile ducts	4	5.64
Acute Pancreatitis	4	5.64
Carcinoma Head of Pancreas	30	42.25
Peri-ampulary Carcinoma	3	4.22
Cholangiocarcinoma	5	7.04
Carcinoma Gall Bladder	3	4.22
Total	71	100

TABLE 2.
COMPARISON BETWEEN BENIGN AND MALIGNANT CAUSES OF JAUNDICE IN DIFFERENT STUDIES.

Study	Year of Study	Benign causes (%)	Malignant causes No (%)
Sharma MP et al[21]	1999	24.70	75.30
Whitehead MW et al[1]	2001	27.59	72.41
Cheema K et al [18]	2001	35.00	65.00
Munir K et al[22]	2004	48.97	51.02
Aziz M et al[4]	2004	16.00	84.00
Sadiq & Iqbal [3]	2007	45.83	54.17
Khurram S et al [16]	2008	43.33	56.66
THIS STUDY	2010	43.66	56.34

DISCUSSION

In our study malignant obstructive jaundice was present in 40 patients(56.34%),where as benign jaundice was seen in 31patients(43.66%) this is similar to a study by Sadique and Iqbal[3] whose figures are 54.17% and 45.83% respectively; where as Aziz etal[4] showed very high incidence of malignant jaundice in 84% against 16 % benign causes. (Table 2)

Kelson and other authors described pain as a symptom in less than one third of their patients, where as in this study all patients of obstructive jaundice due to benign causes complained of upper abdominal pain while in malignant cases painless jaundice was seen in 45% of cases.[5,6] Among other symptoms, clay colored stools were described more commonly by patients of malignant jaundice then benign cases. Incidence of pruritis was seen with equal frequency in both type of jaundice. Scratch marks were present in 60% of these patients. Weight loss was seen in all 41 with malignant causes but only 20(%) with benign etiology.

Similar findings have been reported by other researchers.[6]

Most of the patients with the benign jaundice were seen between 28–40 years of age group while malignant causes were observed between 48–81 years of age. The incidence of malignant obstructive jaundice in patients of older age group is also reported by Wagner and Khan.[7.8]

Gender wise both benign and malignant jaundice were more common in female patients.i.e, 71.8% female against 28.2 male. The high incidence of all type of jaundice in females has been ascribed to high prevalence of cholelithiases in them.[9.]

In the benign group Choledocholithiasis was the most common cause of obstructive jaundice (22/31patients) followed by stricture of the bile duct in 4 cases, Hydatid disease of liver 2, and one each of Amebic liver abscess and billiary ascariasis. These figures are in conformity with results of the observers of the region but interestingly in Saudi Arabia and Yemen infestation with Ascariases Lumbricoides is very common and is frequently associated with disease of billiary tract resulting in obstruction. Mohammad Al Absi and associates found out 42 cases of billiary Ascariases, where worms were present in common bile duct in 29 cases, 12 in Gall bladder and 4 in Pancreatic duct.[10] On the other hand in malignant jaundice group Carcinoma of the head of Pancreas was most common (24/40) followed by Cholangiocarcinoma 6 cases.(see Table 1 for complete list) This is in agreement with Mohammad Zarin and Nusrat-ullah[11.12]

No mass or gall bladder were palpable in patents presented with jaundice due to gall stones, where as palpable distended gall bladders were observed in 28 of 41cases of malignant causes and tumors were palpable in 20/41 cases. This fact also validates Courvoisier's Law.[13]

Liver function tests were done in all cases and they show raised levels of Bilirubin and Alkaline Phosphatase in all. These elevated levels remained constant or showed ascending trend in malignant cases while in benign cases they showed ups and downs; this is also the internationally held view [14.15]

ERCP was done in all cases and it was very helping in diagnosis of the causes of jaundice and confirmd dilatation of bile ducts where ever it was possible to cannulate the common bile duct. It was possible to diagnose 23/30 of benign cases and 31/41 of malignant ones. In malignant cases difficulty to cannulate the Ampula of Vater was noted in 9 malignant cases due to edema of the ampulla or compression by the tumor. Khurram and Arch-Ferrer have come up with the same findings.[16.17]

All malignant cases under went CT Scanning for the purpose of diagnosing and staging of the disease. (See Table for frequency of different causes of jaundice). Staging of disease was done on the bases of size of tumor, extension through the bile duct wall, lymphatic involvement and distant metastases. Great efficacy in diagnosis and staging of tumors causing jaundice by using these highly specialized investigation has been affirmed by ail authors.[18.19.20]

CONCLUSION

Obstructive jaundice is more common among females, malignant causes outnumbered benign causes.

The benign jaundice is prevalent in younger patients while malignant causes in elder age group. Carcinoma of the head of pancreas is the commonest malignant cause of jaundice where as stones in the bile ducts the commonest benign etiology. ERCP and CT-scan are important investigations to diagnose the causative factors of obstructive jaundice.

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