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Evaluation of Various Causes and Treatment of Obstructive Jaundice at Liaquat University Hospital

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ABSTRACT

Objectives: The purpose of this study is to evaluate various causes of obstructive jaundice and its available treatment modalities in this area.

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at Liaquat University Hospital Hyderabad/Jamshoro from January 2010 to december 2010.

Materials Methods: All the patients above 15 years of both sexes were included in this study having obstructive jaundice diagnosed on the basis of clinical grounds and supported by LFT and ultrasonography. A uniform system of history taking, physical examination, investigation and treatment was adopted for all the patients and information was recorded on the pre-designed proforma.

Results: Comprises 80 cases of obstructive jaundice, average age was 50 years with the female to male ratio1.5:1. The most common cause was carcinoma of head of pancreas in 27 (33.75%) followed by bile duct stone disease in 24(33%) cases of carcinoma of gallbladder were in females. Jaundice with weight loss, itching (46%) and mass (28%) were the presenting features in malignant obstruction while pain (83.33%) and fever (25%) was mostly seen in patient with choledocholithiasis. Gallbladder was palable in malignant obstruction only. Anemia was the common associated problem (60%) especially in malignant cases (83%) only biopsy was preferred in 30 (37.50%) of cases, while choledochoduodenustomy in 14 (17.5%). Postoperative complications were only in 28 (35%) of patients with wound sepsis in 17 (11.25%). The mortality rate was (11.25%). Maximal survival for carcinoma of pancreas was 9 months. The average post operative stay was 12 days.

Conclusion: Cholecystectomy with supraduodental choledochotomy and T-tube insertion is effective treatment for bile duct stones whereas internal drainage of billary system is good for advanced malignant cases.

Key Words: Obstructive jaundice, Extra hepatic bile duct obstruction, Etiology and surgical treatment of jaundice

INTRODUCTION

Obstructive Jaundice is a common surgical problem that occurs when there is an obstruction to the passage of conjugated bilirubin from liver cells to intestine.[1] It is among the most challenging conditions managed by general surgeons and contributes significantly to high morbidity and mortality[2]. As patients with obstructive jaundice have high morbidity and mortality, early diagnosis of the cause of obstruction is very important especially in malignant cases, as resection is only possible at that stage[1-4].

Stones are common in males while bile channel related growth/mass in female[5]. Other infrequent causes include benign strictures, liver secondaries and hydatid cysts[6]. A palpable gallbladder suggests mass/growth as cause of obstruction[6]. Invasive tests may cause cholangitis and imaging techniques like computed tomography (CT) scan, PTC, ERCP and MRCP are expensive and are not readily available in most centers in developing countries[7-10], and ultrasonography remains the only diagnostic test available[4-11].

The treatment options depend on the underlying cause. For bile duct stone, ERCP with sphinceterotomy and removal of stone using dromia basket is the treatment of choice [5]. Laparoscopic choledochotomy is another option but it needs expertise and availability of equipment. In the centers where both facilities are not available open surgery is the only option, which includes supraduodenal choledocotomy, Tran duodenal sphincterotomy and choledochoduo-denostomy[6]. Roux-en-y choledochojejunostomy is the best procedure for bile duct strictures in the patients who are otherwise fit to under go such difficult procedures.

Therefore, the knowledge of various causes and available treatment modalities may help in developing some policies for early diagnosis and treatment to reduce post-operative morbidity and mortality.

MATERIALS AND METHODS

This is a descriptive study, from Jan 2010 to December 2010 and includes 80 cases of obstructive jaundice admitted in the surgical units of Liaquat University Hospital Hyderabad/Jamshoro. The patients of both sexes, age $\geq$15 years were included while the patients of age below 15 years and with obstructive jaundice due congenital anomalies or with jaundice due to

hemolysis and hepatitis were excluded. Detailed history was taken in all cases with emphases on age, sex, itching, urine and stool color, nausea/vomiting and weight loss. These facts were correlated with clinical examination findings like presence of jaundice, scratch marks, abdominal mass and hepatomegaly. Abdominal ultrasound was done in all cases to determine the blockage and dilatation of intra and extrahepatic bile ducts and presence of causative factors like stones, tumors,worms and lymph nodes. ERCP was carried out in some cases to look for the causes and extent of obstruction. CT scan was in all cases of suspected malignancy. The final diagnosis was then made on the basis of results of these advanced investigations and histopathology. Then patient prepared for surgery, for stones in CBD the procedure was done ERCP and sphincterotomy or cholecystectomy (in patients with intact gallbladder) and removal of stones through supraduodenal choldochostomy. After exploration T-tube No. 12Fr or 14 Fr was placed in CBD in every case and brought out through a separate stab incision in the abdominal wall near mid line. In some cases with retained stones or where stone could not be brought up in supraduodnal part choledochoduodenostomy was done. For Malignant Obstruction some patients in which no surgical procedure was possible to relieve the obstruction, so that only the biopsy was taken. In these patients the malignancy was advanced and adhered to the surrounding structure with no access to biliary tree possible or in whom porta hepatis was involved and no proximal dilated extra hepatic ducts were available for the drainage procedure, in some patients external biliary drainage done with T-tube or Cholecystomy or internal biliary drainage with cholecystodudunostomy or cholecystojejunostomy was done; the results were then compiled.

RESULTS

Out of 80 cases 48 (60%) were female and 32(40%) were males, female to male ratio 1.5:1. The age ranged between 25 to 65 years, with an average age being 53.60 (±5.62) years in males and 49.58 (± 6.14) years in females. Most of the patients were in 5^{th} and 6^{th} decades.

In 56(70%) patients the cause of obstruction was malignancy and in the remaining 24 (30%) patient was obstruction due to bile duct stones. The most common causes were carcinoma of head of pancreas in 27 (33.75), bile duct stones in 24(30%) and carcinoma of gallbladder 16(20%), other causes were cholagiocarcinomas 7(8.75%) especially involving proximal part, periampullary carcinomas (excluding CA pancreas) in 4(5%) and metastatic carcinoma with primary site in stomach was seen in 2(2.5%) cases. (Table-I)

The carcinoma of gallbladder, pancreas and bile duct stone are more common in females where as periampullary carcinoma,cholangiocarcinoma and metastatic fumors in males. Overall incidence of malignant obstruction is more common in male 24(75%) than female 32(66.66%) where as bile duct stone incidence is more in female 16 (33.33%) than males and 8(25%).

Jaundice was the main symptoms 80(100%) cases. The other common symptoms included pain in RHC in 56(70%) and weight loss 46(57.5%). Malignant or benign obstruction are weight loss (67.85% vs33.33%), itching (46.42%) vs 29.16%) and mass in right hypochondrium (28.57% vs 0%). Where as the symptoms common in patients with stones other than jaundice include, pain (83.33% vs 69.64%), fever (25% vs 14.28%) and intermittent jaundice (41.66 vs 0%).

On abdominal examination liver was enlarged in 37(46.25%) cases and most of were the cases of malignancy . Gallbladder was palpable in 28(35%) cases. Out of the 18 were due to distal obstruction of CBD and 9 due to carcinoma of gallbladder, palpable as stony hard mass. Tenderness in HRC was present in 38.75% cases, it was mild in nature about 8(29.62%) cases of carcinoma of pancreas and 12 (75%) of cases of carcinoma gallbladder presented with a abdominal mass . Anemia was the most common problem present in 48(60%) patients specially in malignant cases 40(83.33%). The other problem was hypertension (15%) diabetes mellitus (8.75%) .

In 30(37.5%) patients no procedure was done except biopsy, out pf these 15(50%) were the patient with carcinoma of gallbladder and 10(33.33%) with CA pancreas. Choledoduodenstomy was done in 14(17.5%) cases and of these 7(50%) were with CA pancreas and 4(28.57%) with bile duct stone. In 10(12.5%) cases Choledochojejunostomy done and mostly 8(88.88%) were the cases of pancreas carcinoma. The CBD exploration and cholecystectomy was done in 20 (25%) cases and all were with gall stones in CBD (Table-2).

Table No.i: Causes of surgical jaundice (n = 80)

Cause	Number	% age
Carcinoma of head of pancreas	27	33.75
Bile duct stones	24	30
Carcinoma of gallbladder	16	20
Periampullary carcinoma (excluding CA pancreases)	4	5
Cholangiocarcinoma	7	8.75
Metastatic carcinome	2	2.5
Total	80	100

Out of 80 cases only 28(35%) patients developed complications. The wound sepsis was the most common in 17(21.25%) and majority of them were occurred in the patients in which biopsy alone was taken 05(18%) and cholecytojejunostomy 05(50%). The other complications included renal failure 05(6.25%) chest infection 4(5%). The patients who died in postoperative period were 9(11.25%), in numbers. The cause of death included renal failure septicemia and GIT bleeding (Table-3).

Table No.2: Operative Procedures Performed

	Ca of head of pancreas	Bile duct stones	Ca of gall bladder	Periampullary Ca	Cholangio carcinoma	Metastatic tumors	Total
No.of cases	27	24	16	04	07	02	80
Biopsy Alone	10	-	15	-	04	02	30 (37.5%)
CBD Exploration Cholecystectomy	-	20	16	-	-	-	20 (25%)
Choledoch Oduodenostomy	07	04	-	02	-	-	14 (17.5%)
Cholecystoje-junostomy	08	-	-	02	-	-	10 (12.5%)
External Drainage of CBD	01	-	-	-	02	-	04 (5%)
Cholecystostomy	01	-	-	-	01	-	02 (2.5%)

Table No.3: Post- Operative Complication

	Biopsy	CBD exploration	Cholecdocho-duodenostomy	Cholecystoje-junostomy	External drain age of CBD	Chplecys-tomstomy	Total
No.of cases	30	20	14	10	04	02	80
Wound Sepsis	05	03	02	05	01	01	17 (21.25%)
Renal Failure	02	-	-	02	01	-	05 (6.25%)
Chest infection	01	01	01	01	-	-	04 (5%)
GIT bleeding	02	-	-	-	-	-	12 (2.5%)

DISCUSSION

Some of these patients are afraid of operation and they try their best to seek some non operative measure before coming. These are the reasons why almost all of the patients with jaundice due to malignant obstruction, come to this hospital when the growth is far advanced that even the palliative drainage is not possible in most cases. The fact is clear from study that in most of the patient with malignant obstruction, no palliative procedure was possible and only biopsy was taken. Blamey-st et al[12] have also concluded in his study that most of the patients with malignant obstructive jaundice have non operable disease at presentation.

The most common cause of jaundice in our series was malignancy in 70% cases, which is almost equal to study conducted by Jamil M.[13] In a study conducted by Aziz M et al [14] in 100 patients with obstructive jaundice, 84(84%) were having malignant disease. This is also supported by other studies outside the Pakistan 75%[68], 80%[69], 90%[70]. But in some other studies the incidence was less 49.69%[71],59%[72],48%[73].

As regarding the age, the incidence of obstructive jaundice was very high in the 5th and 6th decades of life with average age of 52 years. The females had a higher incidence than male with female to male ratio 1.5:1.0. The carcinoma of head of pancreas (59%vs41%) and CBD stones had (66% vs 34%) a slightly higher incidence in females. This corresponds to that reported in western literate [15,] and also in local studies[13],The carcinoma of gallbladder was having a very high female prepondrenace and male to female ratio was 4.33:1.0 in present study, which is almost equal to the study conducted by Shaikh AR and Laghari MH[16]. The cholangiocrcinoma and periampullary carcinoma on the other hand were more common in males similar to reported ratio by Kansasakis et al[17].

In 37% patients with malignant obstruction no procedure was possible, so biopsy alone was done. The mortality rate in these patients was high, two died of renal failure and two of postoperative GIT bleeding and one due to septicemia.

Choledochoduoduodenostomy was done in 14 patients and only two developed wounds sepsis, but no mortality was seen in these patients. Whereas cholecystojejunostomy was done in 10 patients, of these 5(50%) developed wound sepsis and mortality rate was 30% due to septicemia and renal failure. Therefore it is clear that Choledochoduodenostomy should be the procedure of choice were ever possible. These results

are comparable to that reported in literature [18,19,20]. If internal bile drainage must be performed the most surgeons prefer choledochoduodenostomy[21].Welvaart-K concluded by his study that, 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 [22]. In order to prevent delayed gastric emptying double bypass are recommended only in those cases where survival is expected to be more than three months[23].

The wound sepsis is the only main problem in patients undergoing CBD exploration for stones (15%) and there wa no mortality in this group and this I comparable to the reported incidences [24,25].

The overall complications which occurred in patients with surgical jaundice in our study included: wound sepsis 21.25%, renal failure 6.25%, chest infection 5% and postoperative GIT bleeding in 2.5%.The reported complications rates included as follows: wound sepsis in 3.1[26,] renal failure 5%[27] and postoperative bleeding 3.1%[27].So it can be reported by other local studies66. The overall mortality was 10% in our study comparable to other [26].

New diagnostic techniques like CT, ERCP, PTC and choledochoscopy have changed the scenario of the management of obstructive jaundice especially of malignant origin. The prognosis of obstructive jaundice can only be improved by early detection of malignancy.

CONCLUSION

The malignancy is the most common cause of surgical jaundice was more common in females due to increased incidence of gallbladder stone disease, which increase with the age. The patient presenting with jaundice, weight loss and mass in abdomen, the likely cause is malignancy. Abdominal ultrasound is an effective investigation to diagnose the surgical jaundice and differentiating it from medical causes. Cholecystectomy with supraduodental choledochotomy and T-tube insertion is effective treatment for bile duct stones whereas internal drainage of billary system is good for advanced malignant cases.

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