

OBSTRUCTIVE JAUNDICE

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SUMMARY

This prospective study includes 107 cases admitted to Surgical A unit of Khyber Teaching Hospital, Peshawar. All the information, admission till discharge, was recorded on a proforma. There were 44 male and 63 female patients. In males, the causes of obstructive jaundice included slightly higher number of malignancies than stone in females, the more common cause was the presence of gall stones. Overall, the commoner cause was gall stones. Majority of these cases with common bile duct stones could have been treated with a laparoscope or an endoscope, were these modalities available. The common operative procedures adopted were choledochoduodenostomy or choledocholithotomy, followed by T-Tube Drainage.

INTRODUCTION

Obstructive jaundice is the partial or complete reduction in secretion or a block to the flow of bile and its components into the intestinal tract, normally the duodenum.¹ It may be a delayed flow or cholestasis at the level of ductules and ducts within the liver or a mechanical obstruction in the intra- or extra-hepatic ducts. It is a common surgical problem and involves all age groups of people. The causes of obstructive jaundice are variable with choledochal calculi and malignancies in the region of the common bile duct (CBD), head of pancreas and porta hepatis son top of the list. Other

causes are gallstones, hydatid disease of the liver, choledochal cyst, biliary atresia,² and postoperative stricture in CBD. Rarely bile duct polyps,³ liver flukes or round worms,⁴ Mirrizzi's Syndrome⁵ etc.

The common clinical presentation in these patients is yellow discoloration of skin and sclera, itching, pain upper abdomen, dark urine, may be vomiting and clay colored stools.

The common specific investigation performed include Liver Function Tests (LFTs), Prothrombin Time (PT), Activated Partial Thromboplastin Time (APTT), Hepatitis B and C screening. The radiological investigations include abdominal ultrasound, CT Scan, Percutaneous

Transhepatic Cholangiography (PTC), Endoscopic Retrograde Cholangiopancreatography (ERCP) and Magnetic Resonance Imaging (MRI) with various success rates in detecting the cause of jaundice.

MATERIAL AND METHODS

This study was conducted in general surgery; unit A of Khyber Teaching Hospital Peshawar from April 2000 to July 2001. The patients included in the study were directly admitted from the Out-patients department (OPD) or shifted from medical units with the diagnoses of obstructive jaundice. During this period 107 cases of obstructive jaundice were managed in our unit.

The diagnoses in all these cases were based on history, clinical examination and specific laboratory investigations including LFTs, PT, APTT, serum electrolytes, HBs and HCV status. Abdominal ultrasound was performed only in those cases where the diagnosis was inconclusive after the ultrasound examination.

All these patients were prepared for surgery for 2 to 3 days after admission with injection Vitamin K, intravenous antibiotics. They were kept well hydrate with I/V fluids when required. One day before surgery, their PT, APTT, hemoglobin (Hb) and serum electrolytes were checked and if found normal, these patients were operated the next day.

Various surgical methods were adopted according to the situation on the operation table. The various procedure adopted included, choledochodudenostomy, choledochotomy with T-tube drainage, cholecystojejunostomy, cholecystostomy, stenting, hepaticojejunostomy and biopsy only in inoperable cases. All this information from admission till discharge was recorded on a performa prepared for this purpose.

RESULTS

107 patients with obstructive jaundice were included in this study in a period of 15 months from April 2000 to July 2001. There were 44 male and 63

INCIDENCE OF DIFFERENT CAUSES OF SURGICAL JAUNDICE IN VARIOUS AGE GROUPS

CAUSE	AGE IN YEARS						Total
	20-30	31-40	41-50	51-60	61-70	Above 70	
CBD stones	03	07	10	11	07	03	41 = 38.31%
Ca Head Pancreas	00	00	05	08	06	03	22 = 20.56%
Cholangiocarcinoma	00	01	02	04	06	02	15 = 14.2%
Ca. Gallbladder	00	00	01	04	03	02	10 = 9.34%
Hydatid Disease	00	01	02	01	00	00	4 = 3.78%
Stricture	00	00	02	00	02	01	5 = 4.67%
Lymphoma	01	00	00	00	00	00	1 = 0.93%
Biloma	00	00	01	01	00	00	2 = 1.87%
Ca. Liver	00	00	00	00	01	01	2 = 1.87%
Choledochocyst+T-tube	00	01	00	00	00	00	1 = 0.93%

Total = 107

Male = 44

Female = 63

M:F = 1.143

TABLE-1

DISEASE PATTERN IN MALES

Disease	No. of Patients	Percent-age
Bile duct stones	14	31.81%
Carcinoma Pancreas/ Periampulary Region	13	29.50%
Cholangiocarcinoma	06	13.63%
Carcinoma Gall Bladder with Obstructive Jaundice	04	09.00%
Parasites (Hydatid Disease)	02	04.54%
Common Bile Duct Strictures	02	04.54%
Lymphoma	01	02.27%
Hepatocellular Carcinoma	02	04.54%
Total	44	100%

TABLE-2

female patients with a male to female ratio of 1: 1.43. The ages of these patients ranged from 20 to 75 years with a mean age of 27.5 years.

Age incidence with disease pattern is given in table-1. Maximum numbers of patients were in the age range between 40 to 70 years. Malignancies were more common beyond 50 years of age.

DISEASE PATTERN IN FEMALES

Disease	No. of Patients	Percent-age
Bile duct stones	27	42.85%
Carcinoma Pancreas/ Periampulary Region	10	15.87%
Cholangiocarcinoma	10	15.87%
Carcinoma Gall Bladder with Obstructive Jaundice	06	09.52%
Parasites (Hydatid Disease)	02	03.17%
Common Bile Duct Strictures	04	06.34%
Bilomas	02	03.17%
Hepatocellular Carcinoma	01	01.58%
Choledochal Cyst Stones	01	01.58%
Total	44	100%

TABLE-3

Disease pattern in male patients is given in the table-2. Malignancies were more common in male patients. Disease pattern in female patients is given in the table-3. Obstruction due to stones was more common in female patients.

The results of investigation showed a high level of serum Bilirubin and Alkaline Phosphotase in all the cases. PT and APTT were prolonged in 60% of the patients. Four patients were HBs positive and one HCV positive (who had a previous history of surgery). The diagnostic value of various imaging modalities is given in table-4. The most accurate results were those of CT scan.

The various operative techniques adopted and their complications are given

DIAGNOSTIC VALUES OF DIFFERENT IMAGING MODALITIES

ULTRASOUND	
Picked up Biliary Dilatation and Cause	48.50%
Picked up Biliary Dilatation only and no Cause	39.25%
Success Rate in Picking Biliary Dilatation	87.85%
False Reports	12.14%
COMPUTED TOMOGRAPHY (In 12 cases)	
Success Rate in Showing Biliary Dilatation and Cause	91.66%
PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY (In 12 cases)	
Showed correct Level of Obstruction	11 Patients
Inconclusive Results	01 Patients
Success Rate	90.90%
ENDOSCOPIC RETROGRADE CHOLANGIOGRAPHY (In 11 cases)	
Showed correct Level	9 Patients
Inconclusive Results	1 Patient
Failed in Cannulation	1 Patient
Success Rate	77.77%

TABLE-4

MORBIDITY & MORTALITY ASSOCIATED WITH DIFFERENT PROCEDURES

OPERATIVE PROCEDURES (Total 107)	
Choledochoduodenostomy	32
Choledocholithotomy+T-Tube Drainage	18
Cholecystojejunostomy	18
Cholecystectomy + Biopsy	3
Biopsy Only	13
Gastrojejunostomy	2
Triple-Bypass	2
Hepaticojejunostomy	4
Stenting	4
Cholecystectomy	3
Excision stricture - Reanastomosis	1
Excision Cyst + Choledochostomy	4
Repair of CBD	2
Choledochostomy	1
MORBIDITY ASSOCIATED WITH DIFFERENT PROCEDURES	
Biliary Leakage (Post-cholecystojejunostomy)	01
Sub-hepatic Collection (Post-choledochostomy)	02
T-Tube Cholangiogram Filling Defect	01
Postsphincteroplasty Bleeding (ERCP)	01
Chest Infection	02
Wound Infection	01
TOTAL	8 (3.64%)
MORTALITY	
Number of Deaths	04 (3.64%)
Male	02
Female	02

TABLE-5

in table-5. The best results were with choledochoduodenostomy, with low morbidity and early discharge from the hospital, quicker symptomatic relief.

The overall postoperative complication rate was 12.15%. There were four

postoperative deaths, all of them above 60 years of age with advanced malignancies. The overall mortality was 3.643%.

DISCUSSION

Obstructive jaundice is a common surgical problem. We received and treated 107 patients in the past 15 months. The majority of these patients was referred from primary or secondary health care centers in the province. Most of these patients middle aged or elderly. The disease incidence was more in females with a male to female ration of 1:1.43. The reason, higher incidence of gall stones in females.⁶ Majority of the patients fell in the age group of 40 years and above; the reason being gallstones and malignances being a disease of the older age.⁷ Carcinoma of the biliary tree having slightly higher incidence in male in the seventh decade of life.⁸

In the females the commonest cause was CBD stone accounting for 42.85%. Carcinomas of the biliary tree head of pancreas and gall bladder together accounting for 41.26% of the cases. Among the male cases, bile duct stones accounted for 31.81% cases while carcinoma of the biliary tree, head of pancreas and gall bladder accounting for 52.13% cases.

Among the investigations, the ultrasound is the first line investigation that has been done in all the cases but in only 48.5% of the cases, it could detect a definite cause because of its limitations and operator dependence. It did show biliary duct dilatations in 87.85% cases. It gave false report in 12.14% cases.

The best results were give by CT scan and PTC with an accuracy rate of 91.66% and 90.5% respectively. Although ERCP is a very useful diagnostic and therapeutic procedure in biliary tract, having an

accuracy of 94%,⁹ in our series, the results were not up to the mark because of the inexperience with the procedure. The success rate with ERCP was 77.77%. MRI, at the time, was not available in Peshawar so MRCP could not be performed which is normally as accurate as ERCP and PTC and completely non-invasive.¹⁰

The various operative procedures adopted and their complication rate are given in table-5. Although the best way of teaming gall stones and CBD stones is with laparoscopic and endoscopic surgery, in our situation where laparoscopic and endoscopic surgery are not well developed and not easily available, our patients underwent open surgery which still has a role in spite of laparoscopic and endoscopic surgery.¹³

In cases of carcinoma gall bladder involving porta hepatis or primary or secondary growths in the area where internal drainage was not possible and only biopsy was taken, jaundice could have been managed by ultrasound or CT-guided percutaneous drainage¹⁴ if the facilities were available.

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