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Original Research Paper

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"A CLINICO-RADIOLOGICAL PRESENTATION IN PATIENTS WITH OBSTRUCTIVE JAUNDICE: A PROSPECTIVE OBSERVATIONAL STUDY"

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ABSTRACT

Introduction: Obstructive jaundice is a common surgical problem. Occurs due to both benign and malignant conditions. Evaluation in patients with obstructive jaundice was a challenging problem. Presentation of obstructive jaundice patients is late and mostly present after the disease becomes advanced or uncurable. **Aims And Objectives:** To assess age and sex pattern, clinical presentation and radiological and biochemical pattern in obstructive jaundice patients. **Material And Methods:** 100 patients with obstructive jaundice were studied. Proformas form was filled and assessment of demographic and clinical patterns in benign and malignant obstructive were observed and radiological findings in benign and malignant obstructive were carried out to assess the operability. **Result:** we enrolled 100 patients, 18 were male and 82 female having mean age was 52.58 yr. All patients have icterus, 60% having a lump in abdomen, 31% have pruritus. Gallbladder was palpable in 40% patients at which most were due to pancreatic and Periampullary malignancy. Our study reveals the most common overall and benign cause of biliary tract obstruction was CBD stone(33%) and most common in malignant is gall bladder carcinoma(31%) followed by Periampullary carcinoma(17%). CBD stone treated by CBD exploration(85%) and palliative treatment by ERCP(15%) and rest of benign conditions are completely treatable. Among malignant causes gallbladder carcinoma treated by radical cholecystectomy (16%), cholangiocarcinoma were mostly inoperable, Periampullary carcinoma by Whipple's procedure(25%). **Conclusion:** Malignant causes of obstructive jaundice outnumbered the benign causes. Most common overall and benign cause was Choleldocholithiasis and malignant was gallbladder carcinoma followed by Periampullary carcinoma. Benign causes were prevalent in younger age groups (31-40 yr) and malignant in older age groups(61-70 yr).Common presentation of obstructive jaundice was icterus and palpable gallbladder was indicative of malignant etiology. Ultrasound followed by MRCP/ERCP and CT scan was the investigation of choice. Benign conditions have better outcome and cure rate while malignant conditions were inoperable (83%).

KEYWORDS : Obstructive jaundice, Choleldocholithiasis, gallbladder carcinoma, cholangiocarcinoma, Periampullary carcinoma

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. Jaundice due to biliary obstruction may be caused by a heterogeneous group of diseases that include both benign and malignant conditions.

A study conducted on 71 patients of obstructive jaundice from July 2005 to June 2007 and it is found that obstructive jaundice was more common among females and malignant causes outnumbered benign causes.

The benign causes are prevalent in younger age group and malignant causes in the older age group. Carcinoma head of the pancreas the most common malignant cause and stones in the bile duct is the most common benign cause.[1]

A study published in July 2005 on 49 patients who underwent surgery for obstructive jaundice found that ultrasonography should be the first and best initial imaging procedure in patients who have obstructive jaundice and shows reasonable sensitivity and specificity to identify causes of obstruction in obstructive jaundice.[2]

Cancer head of pancreas is the commonest malignant cause while Choledocholithiasis is the commonest benign cause. Ultrasonography, MRI and Computerized Tomography Scan are important diagnostic modalities for evaluation of patient with obstructive jaundice.[3]

The most common cause of biliary obstruction was malignancy and gall bladder carcinoma was the commonest cause in north India.[4] The morbidity and mortality of biliary obstruction are dependent on the cause of the obstruction, and the assessment of factors which influence the morbidity and mortality in patients with obstructive jaundice in society is necessary.

We study demography, clinical features, biochemical and radiological findings in obstructive jaundice patients admitting in the department of General Surgery, J.A. group of hospitals.

MATERIAL AND METHODS

This prospective observational study diagnosed with jaundice attending Department of General Surgery, J.A. Group of Hospitals & G.R. Medical College, Gwalior during a period for one and half year after taking well informed and written consent from the patient.

All patient present with obstructive jaundice diagnosed by clinical history, biochemical investigation and radiological investigation including CT\MRI scan of abdomen and MRCP including in the study and patient with Eastern cooperative group of oncology (ECOG) score 3 and 4 and All patients with bleeding diathesis excluded from the study.

ECOG Score is a performance score to assess the functional status of a patient and describe a patient's level of functioning in terms of their ability to care for themselves, daily activity, and physical ability.

ECOG Classify a patient according to their functional impairment, compare the effectiveness of therapies, and asses the prognosis of a patient.

METHODOLOGY

On admission and on outpatient basis, informed consent was taken from all participants. Demographical and clinical data was collected by taking clinical history in detail. Liver function test and coagulation profile were done in all the patients followed by real time ultrasonography. Followed by appropriate investigation.

In patient of choledochal cyst, stricture and CBD Stone MRCP were carried out and patient having malignant cause CECT abdomen done.

Proformas form was filled and assessment of demographic and Clinical patterns in benign and malignant obstructive jaundice were observed and radiological findings in benign and malignant obstructive jaundice were carried out to assess the operability.

Statistical Analysis

It was done by calculating the percentage of age presentation, cure rate of benign and malignant conditions and observation of various clinical presentation, biochemical and radiological presentations.

OBSERVATION AND RESULTS

We enrolled 100 patients, all of whom had obstructive jaundice. These patients were prospectively enrolled between January 2021 and June 2022 at our institute. We selected 100 patients based on exclusion as well as inclusion criteria.

Table 1: Age group distribution

Age-group	Percentage
20-30	6
31-40	15
41-50	24
51-60	26
61-70	25
>70	4
Total	100

Out of 100 patients, 26% were obstructive jaundice patients who had an age group of 51-60.25%, 24%, 15%, 6% and 4% were observed respectively in the age group as 61-70 years, 41-50 years,31-40 years,20-30 years, and >70 years. Figure 1& 2 shows a graphical representation of the observation.

Table 2: Gender distribution

Sex	Percentage
Female	82
Male	18
Total	100

Among 100 patients, 82% were females whereas 18% were males in our study.

Table 3: Distribution of major associated complaints

Associated complains	Percentage
Abdominal lump palpable	21
Abdominal lump with palpable gall bladder	35
Gall bladder palpable	3
Lump palpable at right subcostal region	1
Pruritus	31
Asymptomatic	9
Total	100

Abdominal lump with palpable gallbladder (35%), Pruritus (31%) and Abdominal lump palpable (21%) were major associated complaints observed with presenting complaints.

Table 4: Association with cholelithiasis

Cholelithiasis	Percentage
No	95
Yes	5
Total	100

95% patients did not history with cholelithiasis whereas 5% patients having history with cholelithiasis.

Table 5: Association with cholecystectomy

Cholecystectomy	Frequency
H/o cholecystectomy	1
No	99
Total	100

99% patients did not history with cholecystectomy whereas 1% patients having history with cholecystectomy.

Table 6: Etiological distribution on the basis of USG findings

Conditions	Percentage
Gall bladder carcinoma	32
Cholelithiasis with dilated common bile duct	19
Dilated biliary radicals	15
choledocholithiasis	14
Periampullary carcinoma	8
Cholelithiasis	6
Gall bladder polyp	5
Common bile duct stricture	1
Total	100

According to USG findings, we observed following hepato biliary pathologies as follows: GB Carcinoma (32%), Cholelithiasis with dilated CBD (19%), Dilated Biliary Radicle (15%), Choledocholithiasis (14%), Periampullary carcinoma (8%), Cholelithiasis (6%), GB Polyp (5%) and CBD stricture (1%).

Table 7: Etiological distribution on the basis of CT/MRI/ MRCP

Conditions	Percentage
Choledocholithiasis	33
Gall bladder carcinoma	31
Periampullary carcinoma	17
Cholangiocarcinoma	5
Gall bladder polyp	3
Common bile duct stricture	3
Choledochal cyst	3
None	5
Total	100

According to CT/MRI/MRCP findings, we observed following hepato biliary pathologies found as follows: GB Carcinoma (31%), cholangiocarcinoma (5%), choledochal cyst (3%), Choledocholithiasis (33%), Periampullary carcinoma (17%), GB Polyp (3%) and CBD stricture (3%).

Table 8: Benign Conditions

Conditions	Opearable	Type of Surgery
Choledocholithiasis	32	Cholecystetomy with CBD exploration
Gall bladder polyp	3	Cholecystectomy
Choledochal cyst	3	Hepatojejuostomy
Common bile duct structure	3	Hepatojejuostomy

Table 9: Malignant Conditions

Conditions	Opearable	Non operable	Type of Surgery
Gall Bladder Mass	26	5	Radical cholecystectomy
Cholangiocarcinoma	5	0	-

Periampullary Carcinoma	13	4	Whipple's Surgery

Table 10: Percentage of different procedures

Conditions	Percentage of Paliative Procedure	Percentage of definitive procedure
Choledocholithiasis	15.62%	84.37%
Gall Bladder Mass	-	16.1%
Cholangiocarcinoma	80%	0
Periampullary Carcinoma	52.94%	23.5%

Table 11: Outcome of patients

Mode of follow-up	Percentage
Discharged	52
Expired	6
Loss to follow-up	1
Chemotherapy	1
Refer to higher centre	40
Total	100

Among 99 patients, 52% patients were discharged, 40% patients were refer to higher centre, 6% patient were expired, 1% patients were Loss to follow-up and 1% patients were Oncology refer for chemotherapy.

Table 12: Distribution of bilirubin concentration

Bilirubin concentration	Percentage
<1	2
1-10	18
11-20	70
21-30	8
>30	2

Bilirubin were categorised into five groups: 1) <1 : 2 (2%), 2) 1-10: 18 (18%), 3) 11-20 : 70 (70%), 4) 21-30 : 8 (8%) and 5) >30 : 2(2%).

DISCUSSION

Obstructive Jaundice is a challenging problem for surgeons, as people are ignorant about jaundice and ongoing severe underlying disease because of self-medication and home remedies, in case of obstructive /surgical jaundice presentation is very late and specific symptoms do not occur in the early stage of disease.

It is present only after the disease becomes locally advanced or involves adjacent vital structures that make it advance and incurable.

In this study, we have done analysis of various cases of surgical jaundice and its presentation. Investigations were carried out and different type of operative procedures were conducted. The total number of cases were 100 and were compared with other studies.

Comparing Other studies, our study reveals that malignant causes of obstructive jaundice are outnumbered the benign causes as seen

Due to availability of improved medical care and awareness of healthcare among people, benign Causes are treated early and number of complications observed less so late and complicated stages of benign Causes are reported less.

In our study, the overall incidence of obstructive jaundice was more common in females than males and the age groups of 41-70 are commonly affected. In the early age group benign causes are more common and later age group malignant cases are more.

Mean age group- add total no of age of patients in year
total number of patients
= 52.58 years.

In surgical jaundice, the main presenting signs/symptoms that were observed were Jaundice, pruritus, abdominal pain, abdominal lump with or without palpable gallbladder in reference to Courvoisier's law.

As we can see in the previous study jaundice was mainly presenting symptoms/signs followed by pruritus.

Table 13: Comparison of symptoms in various studies

	Umesh Chandra 20155	Gupta 20176	Chaturvedi 20177	Shukla 20188	Our study
Jaundice Benign Malignant	90 100	76.6 100	81	89.13	100
Pruritus	60	60.87	35.71	47	31

In our study we observed that the most common cause of overall biliary obstruction was CBD Stone (32.3%) among this most patients were female. The most common cause of malignant obstructive jaundice is G.B. Carcinoma (31%) followed by periampullary carcinoma (17%) where G.B. Carcinoma is more common in females and periampullary carcinoma is more common in males.

Other causes of obstructive jaundice are CBD stricture (3%), GB Polyps (3%), Cholangiocarcinoma (5%), Choledochal Cyst (3%) and others (5%).

Table 14: Comparison of etiological distribution in various studies

	Abdulla 20119	Umesh Chandra 20155	Gupta 20176	Our study
CBD stone	56.97	26.67	76.92	32
CBD Stricture	6.99	3.33	15.38	3
Choledochal cyst	0.41	3.33	7.69	3
GB carcinoma	-	-	32	31.3
Periampullary carcinoma	-	6.67	8.89	17.2
Cholangiocarcinoma	2.46	10	17.39	5

Evaluation of obstructive jaundice was a challenging problem. The aim was to diagnose biliary obstruction by identifying dilation of intra or extra hepatic biliary channels. Investigation that is primarily used is ultrasound abdomen, as it was widely available, non-invasive and radiation free imaging modality for detection of obstruction in biliary tree. But the second and third part of CBD is behind Duodenum and pancreatic head. So, it is difficult to delineate the level of obstruction.

In our study ultrasonography of the abdomen was done in all patients as primary radiological investigation and it only shows 30% of cases with dilated biliary radical which does not lead to conclusive diagnosis. For these patients (and for planning of surgery) we need higher imaging such as CT/MRI/MRCP etc.

On evaluation of causes of obstructive jaundice, we found benign causes are completely treatable as in case of choledocholithisis (85%) patients for CBD exploration and 15% went for ERCP (after that plane for CBD exploration). In case of GB polyp cholecystectomy done, in choledochal cyst and CBD stricture hepaticojejunostomy was done.

Among the malignant causes only 17% are found to be operable in our study and the rest of it are inoperable for which some of them went for palliative treatment. Among operable cases, Gallbladder cancer had radical cholecystectomy, periampullary carcinoma had whipple's surgery and cholangiocarcinoma were inoperable respectively. Among

inoperable cases, 30% of them went for palliative treatment like in cholangiocarcinoma PTBD was done, in periampullary carcinoma ERCP and hepaticojejunostomy was done respectively.

Cure rate in benign disease 100%,
Cure rate in Malignant disease 09/53 x 100 = 16.9%

CONCLUSION

- Malignant causes of obstructive jaundice outnumbered the benign causes.
- Most common malignant cause of obstructive jaundice was carcinoma of gallbladder followed by periampullary carcinoma and benign causes of obstructive jaundice was choledocholithiasis.
- Benign causes were prevalent in younger age groups (31-40 years) and malignant in older age groups (61-70 years).
- Common presentation of obstructive jaundice was icterus and palpable gallbladder was indicative of malignant etiology.
- Ultrasonography followed by MRCP/ERCP and CT scan was the investigation of choice.
- Benign conditions have better outcome and cure rate (100%) while malignant conditions were inoperable (83%).

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