

Clinical Profile, Diagnosis and Management of Surgical Obstructive Jaundice Srimannarayana Y¹, Sudheer M²

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Abstract

Background: There are numerous causes of obstructive jaundice, choledocholithiasis is the commonest. Patients with obstructive jaundice typically present with complain of yellow skin and eyes, pale stools, dark coloured urine, jaundice, and pruritus. A precise pre-operative diagnosis is almost continuously possible today because of advances in imaging techniques over the decades. **Objectives:** To study the clinical profile and management of patients with obstructive jaundice. **Methods:** This was institution based, interventional, prospective, randomized study. Study was conducted at Malla Reddy Institute of Medical Sciences Suraram, Hyderabad, Telangana from September 2020 to August 2021 including 80 patients. Thorough history and clinical examination was done. Patients endured for various laboratory investigations, and radiological evaluation. Analysis was done on SPSS software. **Results:** Among 80 Obstructive Jaundice patients, 35 (43.75%) were male and 45 (56.25%) were female. The majority of patients (53.75%) were 31-50 yrs of age. Jaundice as per history in benign conditions was in 50 patients (62.5%) and in malignant condition 30 patients (37.5%). **Conclusion:** In the present study the occurrence of obstructive jaundice was maximum in the 31-50 year age group. Open exploration of CBD under experienced hands was a good treatment modality in the management of obstructive jaundice.

Keywords: Obstructive jaundice, common bile duct stone, pain abdomen, pruritus, cholecystectomy, Whipple procedure.

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Introduction

Jaundice is a yellow discoloration of skin and mucous membranes due to increased serum bilirubin level caused by the obstruction to the normal outflow of the bile (normal serum bilirubin level is 17 µmol/litre or 0.2-0.8 mg/dl). It is also called as surgical jaundice. [1] Obstructive jaundice is strictly defined as due to block in the pathway between the site of conjugation of the bile in the liver cells and the entry of bile into the duodenum through the ampulla. An accurate diagnosis can usually be made with standard diagnostic techniques such as history, physical examination and biochemical tests and when appropriate cholangiography and liver biopsy and observation of the patients course. [2] Transabdominal ultrasound is a sensitive in expensive reliable and reproducible test to evaluate most of the biliary tree being able to separate patients with medical jaundice from those with surgical jaundice. Surgical treatment ranges from definite surgical procedures to palliative procedures. There are varied causes of obstructive jaundice, but it is most commonly due to choledocholithiasis (also called bile duct stones or gallstones in the bile duct) – presence of a gallstone in the common bile duct. [3,4] Other causes like, malignancies such as cholangiocarcinoma, periampullary and pancreatic cancers, and benign stricture including chronic pancreatitis have become increasingly prevalent. [5] There is also rise in iatrogenic causes of obstructive jaundice, like injury of biliary tract and cholangitis with the increase of invasive procedures performed on the biliary tract. [6]

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Patients with obstructive jaundice usually present with complain of yellow skin and eyes, pale stools, dark coloured urine, jaundice, and pruritus. [7] Patients with obstructive jaundice have tendency to develop nutritional deficits, infectious complications, acute renal failure, and impairment of cardiovascular function. Other adverse events such as coagulopathy, hypovolemia, and endotoxemia can be insidious and significantly increase mortality and morbidity. Hence, the rationale behind the present study was to study the clinical profile of patients with obstructive jaundice and management for the same.

Materials and Methods

This was an Institution based, interventional, prospective, randomized, analytical study done at Malla Reddy Institute of Medical Sciences Suraram, Hyderabad, Telangana between September 2020 to August 2021. Patients admitted in the department of general surgery emergency and outpatients department. 80 cases of obstructive jaundice were enrolled during the study period. A random selection of 80 patients admitted in surgical wards has been done.

Inclusion Criteria

- Age: More than 12 years.
- Patients proved to have obstructive jaundice by any investigation modality during the study period.

Exclusion Criteria

- Age less than 12 years.
- Medical jaundice.
- Cases of obstructive jaundice who are unfit for interventional treatment.

Parameters Noted

- History & physical examination.
- Routine blood investigation like Hb%, TLC, DLC, Random blood, sugar, urea, creatine, serum Na+, K+, LFT, PT, INR, Serum Amylase, Lipase.

• Post operative monitoring of vital pulse, blood pressure, etc. intake output charts, wound site infections and other complications. The study was approved by institutional ethics committee. Informed consent was taken from all the patients..

Methodology

After admission to the hospital, data was collected from the patient's records regarding the clinical features and investigations based on the results they were diagnosed to have either surgical jaundice or medical jaundice. Those patients diagnosed to have surgical jaundice were assessed preoperatively and later subjected to or palliative procedure depending on the need. Postoperatively, patient's conditions assessed and complications were documented. Patients

were followed up for mean period of 4 months where patients underwent surgical intervention/ERCP. Any tissue removed was subjected for histopathological examination.

Statistical Analysis

The statistical operations were done through SPSS (Statistical Presentation System Software) for Windows, version 20.00 (SPSS, 2011. SPSS Inc: New York) to find out the descriptive parameters.). Chi-Square test was used for analysis. P-value of less than 0.05 is considered statistically significant.

Results

Table 1: Age and Gender wise distribution of Study Participants (N=80)

Age (years)	Males (35) (%)	Females (45) (%)
<30	4 (11.4)	5 (11)
31-50	20 (57.1)	25 (56)
51-70	8 (22.8)	10 (22)
>70	3 (8.5)	5 (11)

As per table 1 the study was female preponderance which suggest that obstructive jaundice was more common in females. The peak age was 31 to 70 years (85%). The age varied from 21 years to 80

years. The number of male patients were 35 (43.75%) and number of female patients 45(56.25). The age pattern suggest that younger age groups and elderly are less prone for obstructive jaundice.

Table 2: Association of Symptoms and Signs with Diagnosis

Clinical Feature	Benign (50)	Malignant (30)	P-value
Jaundice	38	20	0.03*
Pain abdomen	42	24	0.02*
Itching	26	18	0.21
Dark colored urine	20	16	0.05*
Clay-color stools	22	14	0.001*
Vomiting	18	18	0.34
Fever	8	4	0.04*
Loss of appetite	12	22	0.01*
Weight loss	10	20	0.001*
Malena	2	11	0.01*
Pallor	28	22	0.71
Icterus	42	25	0.22
Abdominal tenderness	18	11	0.71

As per table 2 Jaundice as per history in benign conditions was in 38 patients (73.08%) and in malignant condition 20 patients (92.87%) with significant difference of p value of 0.034945. Also pain abdomen was significant. High-coloured urine and clay-coloured stools also were present significantly in malignant conditions. Loss of appetite was present in 34 patients. In benign condition, it was 30.77%, and in malignant condition, it was 85.71% showing

significant p value of 0.01. Loss of weight was present in 30 patients. In benign condition, it was 38.46%, and in malignant condition, it was 92.86% showing significant p value of 0.001. Pallor was present in 50 (65%) patients with benign condition (30.77%), and in malignant condition, it was 85.71% but was not significant. Icterus was present in maximum patients i.e. 67 (95%) who were diagnosed as surgical jaundice.

Table 3: Comparison of Laboratory Investigation among groups (N=80)

Lab parameters	Benign (50) (Mean±SD)	Malignant(30) (Mean±SD)	P-value
Haemoglobin (gm %)	10.56±1.29	8.47±1.59	0.03*
Total bilirubin (mg/dL)	9.5±2.5	10.2±2.59	0.21
Direct bilirubin (mg/dL)	5.12±1.41	5.86±1.8	0.02*
Alkaline phosphatase IU	521.26±124.18	540±137.29	0.41
Albumin (mg/dL)	3.49±0.59	3.69±0.81	0.84
Blood urea (mg/dL)	24.99±5.69	25.01±6.11	0.34
Serum Creatinine (mg/dL)	1.39±0.49	26.29±0.46	0.04*

As per table 3 Mean haemoglobin in Benign was 10.56 mg/dl with SD 1.29 and 8.47 mg/dL with 1.59 in malignant condition with p-value of <0.03 with significant difference. Mean total bilirubin in benign condition is 9.5mg/dL with SD 2.5 and 10.2 ng/dL with 2.59

in malignant condition with no significant difference of p-value(0.21). Mean total Serum creatinine in benign conditions is 1.39 mg/dL with D 0.49 and 26.29 mg/dL with 0.46 in malignant conditions with significant difference of p-value(<0.04).

Table 4: Comparison of USG with Final Diagnosis in terms of Cause of Obstruction with Management

Cause of Obstruction	USG (%)	Final Diagnosis (%)	Sensitivity
CBD stones	48 (64.8)	54 (67.5)	92.46
CBD benign stricture	4 (5.4)	4 (5)	100
Mirizzi's syndrome	1 (1.3)	1 (1.25)	100
Malignancy	21(28.3)	21 (26.2)	100
Total	74	80	94

As per table 4 the role of ultrasound to know the cause of obstruction, which was used as the main diagnostic procedure. 64.8 % of patients had common bile duct calculi, 28.3 % of patients were diagnosed as malignant, 5.4 % of patients with common bile duct benign stricture, and 1.31% of patients with Mirizzi's syndrome. In the final diagnosis, CBD calculi was present in 67.5% patients, benign stricture in 5% malignancy in 26.2 %, and Mirizzi's syndrome in 1.25% of patients with USG showing no significant difference to the final diagnosis. With sensitivity with almost 100% (overall 94%) for both USG and final diagnosis except CBD stones. Out of patients with obstructive jaundice due to CBD calculi, most underwent cholecystectomy with CBD exploration with T-tube drainage or choledochoduodenostomy. Three patients had residual calculi postoperatively and underwent reexploration of CBD calculi. For obstructive jaundice due to malignancy, 25 underwent palliative procedure and three patients underwent definitive procedure (Whipple's procedure). The outcome of palliative procedures was good. Patients were free from jaundice

Discussion

In this study, the peak incidence of surgical jaundice was seen in age group of 31 to 70 years. In Sharma MP et al mean age was 62.5. In this study, the mean age of patients was 48.34, which corresponds to studies like Siddique et al and Talpur et al with mean age of 49.5 and 47.15. In Lawal D et al, mean age was 42.[8,9,10,11]

In this study, common bile duct stone was the main aetiology for jaundice when compared to Nadkarni et al[12], Kar et al[13] in which malignancies were more common. This study is comparable with Siddique et al and Talpur et al and where benign cause of obstruction were more common. In the present study malignancy was 26% with other categories being benign stricture and Mirizzi's syndrome. As per the above foregoing, jaundice was the main presenting symptom/ sign in the study of Nadkarni et al which is comparable to our present study.¹² In the present study, it is pain abdomen followed by loss of weight, itching, and clay coloured stools. There were significantly higher values of haemoglobin, direct bilirubin, and serum creatinine in malignant conditions. This is comparable to Pellegrini et al who reported that average bilirubin values are higher in patient with biliary obstruction caused by malignant disease. Ultrasonography was successfully used as the cheapest noninvasive tool to know the cause and level of obstruction in nearly 94% of the patients.[14] Admassie D et al[15] in a study of 49 patients of obstructive jaundice found that ultrasonography should be the first and best initial imaging procedure in patients who have obstructive jaundice and show reasonable sensitivity. In the present study For obstructive jaundice due to malignancy, 25 underwent palliative procedure and three patients underwent definitive procedure (Whipple's procedure). The outcome of palliative procedures was good. Patients were free from jaundice.

Conclusion

The occurrence of obstructive jaundice was maximum in the 21-70 year age group. Common presentation of obstructive jaundice is jaundice. Ultrasonography was the cheapest and also non-invasive investigation used for the diagnosis of surgical jaundice. Most

common cause of obstruction was CBD calculi followed by malignancy most common of which was carcinoma head of pancreas. Early and precise detection of etiology of obstructive jaundice can help surgeons to accurately manage such patients and thus will improve quality of life of patient and improving the survival rates. Better understanding of the clinical profile in these patients will facilitate appropriate management and lead to improved survival.

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