Section: Surgery

Original Research Article

A CROSS-SECTIONAL OBSERVATIONAL STUDY OF ETIOLOGICAL AND CLINICAL PROFILE OF CASES OF SURGICAL JAUNDICE IN TERTIARY CARE CENTRE IN TELANGANA

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Abstract

Background: Jaundice is a frequent manifestation of biliary tract disorders which is commonly encountered by the general surgeon. Surgical jaundice is due to structural or mechanical obstruction of the outflow of bile; obstructed anywhere from the hepatocytes to the ampulla at the duodenum. Important for the management of these patients is a comprehensive study of the etiology, clinical presentation and management of surgical jaundice. **Materials and Methods:** The study is a cross-sectional observational study. All the patients presenting to the General Surgery Department during the study period were considered for the study, which eventually made up to a sample size of 30. Patients with predetermined inclusion and exclusion criteria were selected accordingly. The study was conducted over a duration of 24 months. **Result:** The study established that the most common age group affected was 51-60 years, with a slight male predominance. Most common cause was established to be Choledocholithiasis followed by malignancy. MRCP is a more sensitive investigation for diagnosis of obstructive jaundice. Early diagnosis and treatment reduce mortality. **Conclusion:** Surgical Jaundice is most common in the 6th decade of life, with slight male preponderance. Abdominal pain and jaundice are the common symptoms. Common causes are Choledocholithiasis and Malignancy. MRCP has the highest sensitivity for diagnosis.

INTRODUCTION

Evaluation and management of surgical jaundice is a challenge to the general surgeon and it is a frequent and common manifestation of biliary tract involvement. Surgical jaundice is a condition occurring due to an obstruction in the conjugated bile flowing from hepatocytes through the hepatic ducts, common bile ducts and ampulla of vater, into the duodenum. Obstruction may be intra hepatic or extra hepatic.[1,2]

A significant improvement in the thorough understanding of etiology, pathogenesis, clinical diagnosis, evaluation and management of obstructive jaundice have been made in the last decade. Despite the technical advances, the operative management of obstructive jaundice are known to have very high morbidity and mortality.[3,4]

Diagnosing the cause, site of obstruction and management of surgical jaundice is indeed a challenging task for the surgeon. Therefore, a comprehensive study of the etiology, clinical presentation and management of obstructive jaundice is of important for the appropriate management of these patients.[5,6]

MATERIALS AND METHODS

Study Design: Cross sectional observational study.
Objectives: To study in cases of Surgical Jaundice:

- Demographic data
- Etiology
- Clinical Presentation

Sample Size: 30

Inclusion Criteria

- Age: 18 years and above.
- All consenting adult patients admitted and positively diagnosed as surgical jaundice by ultrasonography and liver function tests

Exclusion Criteria

- Age <18 years.
- Patients with jaundice other than extrahepatic obstructive pathology like hemolytic jaundice,

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hepatocellular jaundice and intrahepatic obstructive jaundice.

Duration of Study: 24 months (December 2020-November 2022)

Study population: The patients presenting to the Department of General Surgery, Osmania General Hospital, during the study period of 2 years, and fulfilling the inclusion and exclusion criteria.

Method of collection of data: On admission a detailed history was taken and clinical examination done. Routine biochemical investigations including liver function test were done in all the patients; followed by real-time ultrasonography of the abdomen. In patients with stone disease, stricture and choledochal cyst MRCP was carried out to assess the biliary ductal anatomy. In all patients with malignant obstructive jaundice CECT scan of abdomen was carried out.

Statistical analysis: Results are presented as mean and proportion. The various causes for the obstructive jaundice in our hospital were analyzed. A comparison was made with other studies regarding incidence, sex distribution and Mode of presentation. The results were graphically represented and conclusion derived from it.

RESULTS

In our study, the age group varied from 23 years to 75 years; most common age group being 51-60 years old.

Of the 30 patients, 17 were male and 13 were female, thus indicating a slight male preponderance.

In benign surgical jaundice commonest symptom was pain abdomen.

In malignant jaundice, the most common symptoms were jaundice, loss of weight and appetite.

Mean bilirubin was 8.59 and 18.49mg/dl in benign and malignant Jaundice respectively.

Mean alkaline phosphatase level was 203.1 IU/L in benign &185.75 IU/L in malignant jaundice.

In our study dilated CBD in benign and malignant jaundice were 88.8% and 91.6% respectively.

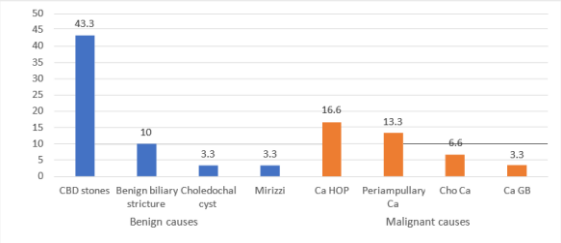

Figure 1: causes of surgical jaundice

Interpretation: Out of 30 cases 18 patients presented with benign causes and 12 cases presented with malignant causes; overall commonest cause being choledocholithiasis.

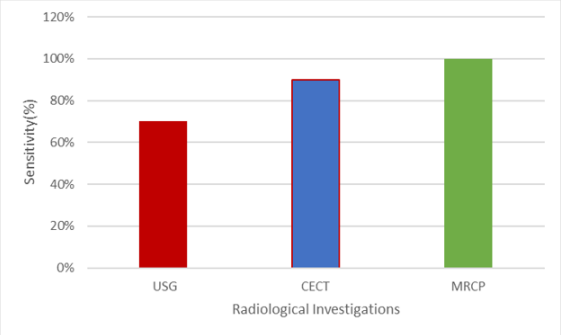

Figure 2: diagnostic accuracy by radiological investigations

Interpretation: MRCP was found to have the highest sensitivity (100%)

Table 1: causes of surgical jaundice in our study.

Causes	Number of patients	Percentage
Benign causes	(18)	(60%)
• Choledocholithiasis	13	43.3%
• Benign biliary stricture	3	10%
• Choledochal cyst	1	3.3%
• Mirizzi syndrome	1	3.3%
Malignant Causes	(12)	(40%)
• Ca head of pancreas	5	16.6%
• Periampullary Ca	4	13.3%
• Cholangiocarcinoma	2	6.6%
• Ca gall bladder	1	3.3%
Total	30	100%

Table 2: details of investigations done

Diagnosis	USG abdomen /pelvis			CECT abdomen /pelvis			MRCP		
	Total no of cases done	Diagnosed	Not diagnosed	Total no of cases done	Diagnosed	Not diagnosed	Total no of cases done	Diagnosed	Not diagnosed
Choledocholithiasis	13	12	1	5	4	1	13	13	0
CBD stricture	3	0	3	3	2	1	3	3	0
Choledochal cyst	1	0	1	1	1	0	1	1	0
Mirizzi	1	0	1	1	1	0	1	1	0
Ca head of pancreas	5	5	0	5	5	0	5	5	0

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Periampullary carcinoma	4	2	2	4	4	0	4	4	0
Cholangiocarcinoma	2	1	1	2	2	0	2	2	0
CA Gb	1	1	0	1	1	0	1	1	0

Table 3: Diagnostic Accuracy by Radiological Investigations

Radiological investigations	Diagnosed	Undiagnosed	Total number of Cases scanned	Sensitivity
USG	21	9	30	70%
CECT	20	2	22	90%
MRCP	30	0	30	100%

Table 4: Sex ratio -surgical jaundice cases

	Total cases	M	F	M: F
a) Pellegrini et al (1982)	178	86	92	1 : 1.07
b) Pain JA (1987)	30	17	13	1 : 0.76
C Parks RW (1997)	121	61	60	1:0.98
d) Present study (2021)	30	17	13	1: 0.76

DISCUSSION

The purpose of study was to evaluate patients with surgical jaundice clinically, biochemically and radiologically to determine the most common cause, age incidence, sex incidence, presenting complaints in current scenario. 30 Patients with surgical jaundice admitted and treated in our hospital are evaluated.[7]

Various studies observed that jaundice is a major health problem in India in which specific symptoms will not arise until the disease becomes locally advanced or includes surrounding vital structures.[8]

In this study of 30 surgical jaundice cases age distribution ranged between 23-75 years. The youngest patient was 23 years old with choledochal cyst. The most common age group affected with surgical jaundice was between 51-60 years accounting to about 33.33% with 16.6% The 41-50 yrs is the second most common age group. There were 17 male patients and 13 female patients with slight male predominance with sex ratio 1:0.76. The previously conducted studies results are compared to this study.[9,10]

Interpretation: The study's results by Pain JA (1987) 1:0.76 and ParksRW (1997) at 1: 0.98 are comparable with our study with a male predominance of surgical jaundice cases. In Maingot's Abdominal Operations, has stated that there was slight male predilection in malignant jaundice.[11]

Steer ML in Sabiston textbook of surgery reported that malignant jaundice was common in men than women.[12]

Male and female are affected to the same degree reported in bailey and love's short practice of surgery and Russel RCG AND Yoe CJ, CameroJL. In Oxford textbook of surgery reported that the sex ratio is equalizing in malignant jaundice.[13]

The most common chief complaint was pain abdomen (100%) in benign cases, jaundice and Loss weight and appetite (91.6%) in malignant cases. This correlates with Siddique et al (2008) study. %. Warren et al (1983) study results in which studied 191 patients comparable with this study and who reported that the presenting symptoms in malignant jaundice as follows loss of weight 90%, abdominal pain 83%, hepatomegaly 64%. pruritus 41%, fever 5%, Van Wagensveld BA et al (1997) who studied 126 patient and reported jaundice as a presenting symptom in 90%, loss of weight in 82%.[14]

In our study mean value of total bilirubin was 18.49 in malignant and 8.59 in benign cases. The mean values of alkaline phosphatase and SGOT in malignant jaundice were 185.75 and 102.9 respectively.[15]

In malignant obstruction highest level of serum bilirubin are reported by Steer ML in Sabiston textbook of surgery.

CBD stone is associated with moderate increase in serum bilirubin at 10-12mg/dl reported by Ahrendt SA, Pitt HA in Sabiston Textbook of Surgery.

CBD stones not cause severe jaundice which is serum bilirubin value>14mg/dl

In our study ultrasound examination was done in all patients and dilated CBD was found in 91.6% of malignant disease ad 88.8% of benign disease. Distended gall bladder was found in 58.3% of malignant cause and 27.7% of benign cause. Pancreatic mass was found in 41.6% and ascites in 50% of malignant cases.

Galati P et al concluded that sonographic finding characteristic of periampullary tumor are intrahepatic ductal dilatation, dilated CBD and hypoechoic mass in ampullary region and in > 50 % of cases distended gall bladder seen.

Amongst the radiological investigations ultrasonography was the initial imaging investigation for all cases of obstructive jaundice to diagnose the cause of obstruction. Ultrasonography of abdomen and MRCP was done in all cases. CECT was done in 22 cases. The sensitivity of MRCP was higher than the other two radiological investigations.

Among the 30 cases studied only 12 have malignant etiology accounting to about 40%, about 60% have benign etiology.

The most common benign etiology in this study was choledocholithiasis. Three cases Presented with benign stricture. Choledocholithiasis was the

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commonest benign cause observed in study done by B Roy et al (2015)

The most common malignant etiology in this study was carcinoma head of pancreas followed by periampullary carcinoma.

CONCLUSION

30 cases of surgical jaundice admitted and treated in Osmania General Hospital during the study period were evaluated.

A brief introduction and a historical review of biliary tract has been presented with a detailed discussion on physiology, etiopathogenesis, clinical features, investigations and management of surgical jaundice. The findings are compared with those available in literature. The results have been presented with tables and graphs for better understanding. The study findings are:

- In the 51–60-year age group most commonly presented with obstructive jaundice.
- 17 patients were males and 13 patients were female with slight male predominance.
- In our study pain abdomen and jaundice were common presenting symptoms.
- In malignancy high values of serum bilirubin and alkaline phosphatase are noted.
- Ultrasonography was cheapest and non-invasive investigation used for diagnosis of surgical jaundice. MRCP has most (100%) sensitivity.

Choledocholithiasis (1st) and Malignancy(2nd) are the most common causes for obstructive jaundice.

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