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A Clinical Study on Presentation of Obstructive Jaundice in Inflammation, Stone Disease and Malignancy in a Tertiary Care Hospital at Rural Area

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Abstract
Biliary tract disorders can be significantly found in worldwide population, and the quite majority of cases are attributable to choledocholithiasis. Patients with obstructive jaundice usually present with complain of yellow skin and eyes, pale stools, dark colored urine, jaundice, and pruritus. Abdominal pain often misleading for diagnosis-some patients with choledocholithiasis have painless jaundice, whereas some patients with hepatitis have distressing pain in the right upper quadrant. This study was conducted in Sree mookambika institute of medical sciences Medical College Hospital, Department of General Surgery, Kanyakumari. From September 2023 to August 2024.Inclusion criteria are All patients admitted in surgical ward sree mookambikai Medical College Hospital, Department of Surgery during the period were included. Exclusion criteria are Non obstructive jaundice, H/o previous biliary surgery, Age <12 years. Accuracy of radiological investigations like USG and CT abdomen are evaluated and complications of treatment in our hospital were analyzed among 50 cases admitted and treated for obstructive jaundice in the hospital for a period of one and a half year. Most common complication was wound gaping and wound infection and the organism were E.coli, Klebsiella and proteus. Obstructive jaundice is a common surgical problem in our setting and poses diagnostic and therapeutic challenges. It is more common among females. Benign etiology is common in females and malignant etiology is common in males Careful clinical examination and correlation with radaiological investigations played a major role in diagnosis and treatment

INTRODUCTION

The word "Jaundice" arises from French word "Jaune" which means yellow. Jaundice is defined as yellowish discolouration of the skin, sclera and mucus membrane by bilirubin-yellow orange bile pigment. Obstructive jaundice (Surgical Jaundice) in simple terms means the outflow of bile has been obstructed anywhere from the liver to the duodenum. A correct pre-operative diagnosis is almost always possible today because of advances in imaging techniques over the decades. Removal of block relieves the symptoms and often results in cure. 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. Other causes like, malignancies such as cholangiocarcinoma, periampullary and pancreatic cancers and benign stricture including chronic pancreatitis have become Increasingly prevalent. 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. Biliary tract disorders can be significantly found in worldwide population, and the quite majority of cases are attributable to choledocholithiasis. Patients with obstructive jaundice usually present with complain of yellow skin and eyes, pale stools, dark colored urine, jaundice and pruritus. Abdominal pain often misleading for diagnosis-some patients with choledocholithiasis have painless jaundice, whereas some patients with hepatitis have distressing pain in the right upper quadrant. Malignancy often associated with the absence of pain and tenderness during the physical examination. 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. An accurate diagnosis can usually be made with combination of different approaches like, history, physical examination and biochemical tests and when appropriate cholangiography and liver biopsy and observation of the patient's course. 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 among the patients with malignant pathology. Hence, present study was undertaken to study the clinical profile of patients with obstructive jaundice.

Aims and Objectives of the Study: The aim of the study is to.

- To estimate the correlation of clinical, biochemical and radiological features in obstructive jaundice patients.
- To analyze the efficacy different modalities of treatment and other complications. To assess the morbidity and mortality of the disease.

MATERIALS AND METHODS

This study was conducted in Sree mookambika institute of medical sciences Medical College Hospital, Department of General Surgery, Kanyakumari. From September 2023 to August 2024. Inclusion criteria are All patients admitted in surgical ward sree mookambikai Medical College Hospital, Department of Surgery during the period were included. Exclusion criteria are Non obstructive jaundice, H/o previous biliary surgery, Age <12 years. Proper history and clinical examination of the patients, Routine basic investigations, Liver Function Test, Prothrombin time, Urine test like Fouchet test for bile pigment, Hays test for bile salt, USG abdomen pelvis, CECT abdomen pelvis and MRCP, Surgery as per the diagnosis made, Histopathology of resected specimen. Statistical analysis was done using the statistical package for social sciences (SPSS). Different statistical methods were used as appropriate. Mean±SD was determined for quantitative data and frequency for categorical variables. The independent t-test was performed on all continuous variables. The normal distribution data was checked before any t-test. The Chi-Square test was used to analyze group difference for categorical variables. A p-value<0.05 was considered significant.

RESULTS AND DISCUSSIONS

Table 1: Distribution of Study Subjects Based on Aetiology and Diagnosis

	Aetiolog	Frequency	Percentage
Benign	Common Bile duct stone	30	60
	Common Bileduct stricture	2	4
Malignant	Ca Gall Bladder	3	6
	Ca head of pancreas	2	4
	Ca stomach with jaundice	2	4
	Hilar cholangiocarcinoma	1	2
	Peri ampullary growth	10	20
Total		50	100

Table 2: Distribution of Study Subjects Based on Symptoms and Aetiology

Symptoms	Benign		Malignant	
	n	%	n	%
Abdominal pain	23	88.5	3	11.5
Abdominal pain and Jaundice	0	0	5	100
Jaundice	8	75	4	25
Loss of appetite and Weight loss	1	25	3	75
Loss of appetite and jaundice	0	0	1	100
Weight loss and jaundice	0	0	2	100

Table 3: Mean Bilirubin Level Before and After the Surgery

Mean Bilirubin level	Pre op Mg/dl	POD 1 Mg/dl	POD 3 Mg/dl	POD 6 Mg/dl	POD 9 Mg/dl
Total	4.54	4.09	3.06	2.16	1.49
Direct	3.36	2.77	2.02	1.44	0.96
Indirect	1.19	1.32	1.04	0.72	0.54

Table 4: Distribution of Study Subjects Based on Management

Management	Frequency	Percentage
Surgery	40	80.0
Palliative	6	12.0
Non Compliance	3	6.0
Referral	1	2.0
Total	50	100.0

Table 5: Distribution of Study Subjects Based on the Surgical Procedure Done

Diagnosis Peri-ampullary	Surgery done	Frequency (n= 40)
growth	Whipple's Procedure	8
	Triple bypass	2
Common Bile duct stone	Cholecystectomy/Common	Bile
Duct	Exploration with T-Tube insertion	6
	Cholecystectomy with choledocho duodenostomy	17
	Cholecystectomy/ choledocholithotomy/ choledocho duodenostomy	6
Ca head of pancreas	Whipple's Procedure	1

Table 6: Details of Investigations Done

diagnosis	usg abdomen/pelvis			cect abdomen/pelvis			mrcp		
	total no. of cases done	diagn osed	not dia gno sed	total no. o f cases	diag nose d	not diagn osed	total no. of cases done	diag nose d	not diagn osed done
choledocholithiasis	30	28	2	11	8	3	30	30	0
peri ampullary ca	10	6	4	10	9	1	10	10	0
ca gallbladder	3	3	0	3	3	0	3	3	0
cbd stricture	2	0	2	2	1	1	2	2	0
ca head of pancreas	2	2	0	2	2	0	2	2	0
ca stomachwith porta hepatis nodes	2	1	1	2	2	0	2	2	0
hilar cholangio carcinoma	1	1	0	1	1	0	1	1	0

Table 7: Diagnostic Accuracy by Radiological Investigations

Radiological Investigation	Diagnosed	Un-diagnosed	Total number of cases scanned	Sensitivity
USG	40	10	50	80%
CECT	18	2	20	90%
MRCP	50	0	50	100%
Fischer exact test value: 11.11		P value: 0.0039, Statistically significant		

The purpose of the study was to evaluate patients with obstructive jaundice clinically, biochemically and radiologically and to determine the most common cause, age incidence, sex incidence and chief compliant are analysed in our set up in current scenario. Accuracy of radiological investigations like USG and CT abdomen are evaluated and complications of treatment in our hospital were analyzed among 50 cases admitted and treated for obstructive jaundice in the hospital for a period of one and a half year. Various studies observed that Jaundice is a major health problem in India in which specific symptoms will not arise in initial phase of the disease. They will occur once the disease becomes locally advanced or including adjacent vital structures. The mean age of incidence of surgical jaundice was 49.68yrs in present study. Comparing with study done by Friess[1-3] in the year 2004 who did similar study in which there is more or less equal age incidence in present study. The most common age group affected with obstructive jaundice was between 41-50 years of age accounting to about 30% and youngest being 24 years and eldest being 75 years. The next most common age group was 51-60 years and >60 years with 24% and 22% respectively. Thus it was a disease of middle age group[4]. The most commonly affected sex is female. The increased incidence of obstructive jaundice amongst the females is due to the fact that gall stones are frequently found in them. In the study among the 50 cases 24 patients are male accounting to about 48%. Malignant disease appears to be most common in elderly males. About 18 cases among 50 are affected by malignant obstructive jaundice. The ratio of male: female appears to be1.08:1 in our set up. This almost correlates with the study of Verma[2] (2010) in which the male: female ratio was 1.8:1. The most common chief complaint was abdomen pain in about 52% of patients. The next most common complaint was yellowish discolouration of eye, itching i.e., jaundice accounting to about 24%. Some patients have two complaints in combination like abdominal pain and yellowish discolouration of eye (10%) followed by there was Loss of appetite and Weight loss (8%). This goes with Siddique[17] (2008) study where abdomen pain was most common presenting feature (51.66%) Among the 50 cases studied only 18 have malignant aetiology accounting to about 36%. About 64% have a benign aetiology. Malignant cases were higher in male than female and benign cases were higher in female than male. This doesn't correlates with Sidddique[17] (2008) who stated that malignancy is the most common cause (56.6%) but correlates with Bekele[5] (2000) study who reported choledocholithiasis is most common cause for obstructive jaundice. The most common benign aetiology in my study was choledocholithiasis accounting for about 60% of the overall aetiology and 93.75% of the benign aetiology. Choledocholithiasis was also found to be the commonest benign cause in others study[2]. Among the 30 cases with choledocholithiasis 17 cases were females indicating the high prevalence of stone disease in females. Choledocholithiasis was the commonest benign cause and it was observed in study done by B Roy[3]. Two cases presented with benign stricture. But unfortunately both patients are not willing for surgery even after counselling. The most common malignant aetiology was periampullary carcinoma in my study. About 55.55% of the malignant aetiology and 20% of the overall aetiology of obstructive jaundice was periampullary carcinoma. This doesn't correlates with Sharma and Ahuja[14] who reported carcinoma gallbladder as the most common cause. Among the 10 cases 8 were treated with whipple's procedure and rest 2 were treated with triple bypass. The next most common malignancy was carcinoma gall bladder. Among the 3 cases all were presented with advanced and inoperable stages and treated aiming palliation[7-8]. Liver secondaries with porta hepatis nodes was found to be the cause in 2 cases accounting to 4%. Among them both had primary in the stomach and received palliative chemotherapy[9,10]. 2 patients presented as carcinoma head of pancreas accounting 4% of obstructive jaundice and 11.11% of malignant aetiology

in our study and one patient treated by whipple's procedure and one patient is not willing for surgery. One patient presented with advanced hilar cholangio carcinoma with inoperable stage treated aiming palliation. Similar Incidence of various malignancies in patients of obstructive jaundice has been seen in various studies. These observations reflect differences inetiological spectrum from one centre to another. Majority of patients with malignant obstructive jaundice underwent palliative treatment and majority of patients with benign aetiology underwent curative surgery. Similar treatment pattern was also reported by Mohammed[11]. Mortality occurred in one case. That is a case of advanced carcinoma stomach with liver secondaries on palliative and supportive care. Abdul Ghafoor Dalwani study has showed a high mortality rate in about 11.25% of cases[19]. 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 20 cases. The sensitivity of MRCP (100%) was higher than the other two radiological investigations and this difference were found to be statistically significant by Fischer's exact test (p value=0.0039). Asma Afzal Kiani[20] study stated that- Ultrasonography should be the first and best initial imaging procedure in patients who have obstructive jaundice. CT was found to be more sensitive than USG. According to Jennifer[21] study-Traditional computed tomography (CT) scan is usually considered more accurate than US for helping determine the specific cause and level of obstruction. The study done by B Roy[3] evaluated of imaging techniques for diagnosis, sensitivity of Ultrasound was 82% and sensitivity of CT was 91%. But in our study Sensitivity of ultrasonogram was 80% but CT scan 90%[3]. CT scan has several advantages over USG. CT scan was done in patients mostly suspecting of malignancy in USG. Tumor size, its local, regional and distant spread can more accurately be determined by CT scan[17]. In my study we did surgical treatment in 80% of patients. Only two patients received bypass procedures due to the severi ty of the disease. All choledocholithiasis patients treated with surgery except one patient who is referred for ERCP. Open cholecystectomy with CBD exploration and T-Tube drainage was done for 6 patients and for 23 cases open cholecystectomy with Choledocho duodenostomy done. Among 10 cases of peri-ampullary carcinoma 8 patients were treated with whipple's procedure and 2 were with triple bypass. Among 2 cases of carcinoma head of pancreas 1 was treated with whipple's procedure and one is not willing for surgery[12-14]. All the 3 cases of carcinoma gallbladder and carcinoma stomach and hilar cholangio carcinoma were inoperable even at presentation. Another 2% were referred to higher centre and 6% were non-compliant to treatment. Biochemically Bilirubin level and Alkaline Phosphatase was monitored before and after surgery on day 1,3,6 and 9. There was reduction in mean Total bilirubin level 4.54 to 1.49mg/dl, direct bilirubin from 3.36 to 0.96 mg/dl, indirect bilirubin from 1.19-0.54 mg/dl. There was reduction inmean Alkaline Phosphatase from 427.2-325.65 IU/L. In our study also the reduction of bilirubin post operatively correlates with David O Irabor[18] results. Most common complication was wound gaping and wound infection and the organism were E.coli, Klebsiella and proteus. Similar bacterial profile was also found Leida[21] study. Post operative wound infections in biliary surgery has been reported in literature to be due to contamination by gram negative enteric aerobes like E.coli, Klebsiella by opening the biliary tract in patients with bactibilia and patients with wound infection were treated with daily twice cleaning and dressing, culture and sensitivity and appropriate antibiotics[15,16].

CONCLUSION

Obstructive jaundice is a common surgical problem in our setting and poses diagnostic and therapeutic challenges. It is more common among females. Benign etiology is common in females and malignant etiology is common in males Careful clinical examination and correlation with radaiological investigations played a major role in diagnosis and treatment. Pre operative evaluation and correction of abnormalities will reduce the morbidity and mortality. Endoscopic ultrasound is the best imaging modality for common bile duct stones. Minimal invasive surgery will play a role in surgical management of obstructive jaundice.

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