

Case Series

Study of cases of obstructive jaundice due to biliary and pancreatic tumors

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ABSTRACT

Obstructive jaundice has recently become more common, particularly among malignant cases. The aim was to study, evaluate and compare various operative managements for obstructive jaundice due to biliary and pancreatic tumors. This prospective study was conducted by random selection of 20 cases presenting with obstructive jaundice due to biliary and pancreatic tumors at a tertiary care hospital affiliated with Smt. N.H.L. Municipal Medical College. Majority of patients were in age group 51-60 years (35%) and 61-70 years (20%). Males (70%) were found to be in higher proportion compared to females (30%). Most common presenting symptom was jaundice (90%). Most common cause was periampullary carcinoma (60%). It was found that the most common complication following Whipple's procedure and Triple Bypass Surgery was pancreatic fistula.

Keywords: Malignancy, Obstructive jaundice, Pancreatic tumors

INTRODUCTION

Obstructive jaundice is one of the most important complications in cases of biliary and pancreatic tumors, not just in terms of overall prognosis but also in terms of the effect it has on the quality of life of the patients. Therefore, it is of great importance to study such cases in a holistic manner. obstructive jaundice in cases of biliary and pancreatic tumors can be described as blockage of the flow of bile along its normal course due to the presence of such tumors. Such blockage can result in a diverse set of symptoms like progressive discoloration of sclera, urine and skin, pruritus, abdominal pain, and disorientation among others. Hence, surgical intervention is of great value in such cases. The prevalence of biliary and pancreatic tumors is an important statistic to begin the study with. pancreatic cancer is ranked 12th in incidence worldwide with incidence rate of 8.2 per 100,000 among males and 5.4 per 100,000 among

females. The incidence of pancreatic cancer in India is on the lower side compared this data with incidence rate being 0.5-2.4 per 100,000 among females and 0.2 to 1.8 per 100,000 among males by Shrikhande et al.¹

Malignant obstructive jaundice is a common condition seen by both Surgeons and Physicians. There is scant data from South Asia about demography, clinical, laboratory, imaging & endoscopy features of patients with malignant obstructive jaundice. Pancreaticoduodenectomy (PD) or Whipple's procedure, with a considerable rate of postoperative complications and death, is considered a formidable surgical procedure and the primary treatment for patients with various benign and malignant diseases in pancreatic head, duodenum, and periampullary region. Palliative surgery may be done if tests show that the malignancy is too widespread to be removed completely. This surgery is done to relieve symptoms or to prevent certain complications like a blocked bile duct or intestine, but the goal is not to cure the malignancy.

The fundamental problem a surgeon faces in dealing with a case of prolonged jaundice is the accurate diagnosis of its cause whether it is obstructive in origin or not and if obstructive what exactly is the cause- malignant or not. In this study we will analyze both the surgeries along with how statistically significant or insignificant variations can be seen in many variables like age, gender, type of procedure performed, primary etiology etc., and how these factors affect the patients in both immediate post operative phase and long-term survival. In the immediate post operative phase, we have analyzed many complications like pancreatic fistula, anastomotic leak, pulmonary complications, and surgical site infection. For the long-term survival, we have looked at the mortality and discharge data of the data of the subject patients. This study aims to better understand obstructive jaundice in cases of biliary and pancreatic tumors by looking at its incidence then understanding it causes. The study then focuses on the various available surgical interventions and the various post operative complications. Finally, there is the data about survival and mortality. Thus, this study is an attempt to further enhance the treatment modalities available to patients of obstructive jaundice in cases of biliary and pancreatic tumors and lead to better patient care and outcomes.

CASE SERIES

This prospective study was conducted by random selection of 20 cases presenting with obstructive jaundice due to biliary and pancreatic tumors at a tertiary care hospital affiliated with Smt. N.H.L. Municipal Medical College. This is a prospective study of 20 cases of patients presenting with obstructive jaundice to study their causes, various operative managements, and their complications. The method of study consisted of taking a good clinical history in chronological order as soon as patient was examined. A thorough clinical examination was carried out to find out and establish clinically first the cause leading to obstructive jaundice. A detailed local examination was done as per proforma.

Inclusion criteria

Inclusion criteria all patients aged > 40 years; patients with histo-pathologically proven biliary and pancreatic tumors causing obstructive jaundice.

Exclusion criteria

Exclusion criteria were all patients aged ≤ 40 years; patients undergoing conservative management for obstructive jaundice due to biliary and pancreatic tumors; patients lost to follow up. In our study 10 patients underwent pancreaticoduodenectomy (Whipple's procedure), 7 underwent triple bypass, 2 underwent double bypass procedure and one underwent radical cholecystectomy.

Table 1 shows age distribution of cases of patients who presented with obstructive jaundice due to biliary and pancreatic tumors. Majority of patients were in age group 51-60 years (35%) followed by 41-50 years (20%) and 61-70 years (20%). The median age of patients in this study was 58 years.

Table 1: Age distribution.

Age (years)	No of cases	Percentage
41-50	4	20
51-60	7	35
61-70	4	20
71-80	3	15
>80	2	10

Table 2 shows that males were found to be in higher proportion (70%) as compared to females (30%) amongst patients presenting with obstructive jaundice with biliary and pancreatic tumors.

Table 2: Sex distribution.

Gender	No of cases	Percentage
Male	14	70
Female	6	30

Table 3 shows the most common presenting symptom of patients with obstructive jaundice due to biliary and pancreatic symptoms is jaundice (90%) followed by pruritus (60%) and abdominal pain (50%).

Table 3: Symptoms frequency

Symptoms	Frequency	Percentage
Jaundice	18	90
Pruritus	12	60
Abdominal pain	10	50
Weight loss	8	40
Miscellaneous	10	50

Table 4 shows that the most common cause of malignant obstructive jaundice is periampullary carcinoma [excluding D2carcinoma of duodenum] (60%) followed by carcinoma pancreas (20%) and ampullary carcinoma (10%).

Table 4: Etiology frequency

Etiology	No of cases	Percentage
Pancreas carcinoma	4	20
Periampullary carcinoma	12	60
Ampullary carcinoma	2	10
Others	2	10

Table 5: Surgery vs complications.

Surgery Name	Pancreatic fistula	Anastomotic leak	Surgical site infection	Pulmonary complication	Miscellaneous
Whipple's procedure	7 (70%)	4 (40%)	4 (40%)	3 (30%)	2 (20%)
Triple bypass	3 (42.85%)	2 (28.57%)	2 (28.57%)	1 (14.28%)	-
Double bypass	-	1(50%)	-	-	-
Radical cholecystectomy	-	-	1(100%)	-	-

Table 6: Age vs complications.

Age (years)	Pancreatic fistula	Anastomotic leak	Surgical site infection	Pulmonary complications	Miscellaneous
41-50	4 (100%)	2 (50%)	2 (50%)	0	1 (25%)
51-60	2 (28.5%)	3 (42.8%)	1 (14.28%)	2 (28.5)	1 (14.28%)
61-70	3 (75%)	1 (25%)	1 (25%)	1 (25%)	0
71-80	1 (33.3%)	0	3 (100%)	1 (33.3%)	0
>80	0	1 (100%)	0	0	0

Table 7: Surgery vs duration of hospital stay.

Name of surgery	Duration of hospital stay			Mortality
	1-10 Days	11-20 Days	21-30 Days	
Whipple's Procedure	2	7	1	2
Triple bypass	3	2	2	1
Double bypass	1	1	-	2
Radical cholecystectomy	1	-	-	-

Table 8: Etiology vs complications.

Etiology	Pancreatic fistula	Anastomotic leak	Surgical site infection	Pulmonary complications	Miscellaneous
Carcinoma pancreas	3 (75%)	2 (50%)	1 (25%)	1 (25%)	2 (50%)
Peri-ampullary carcinoma	6 (50%)	4 (33.3%)	4 (33.33%)	2 (16.66%)	-
Ampullary carcinoma	1 (50%)	-	1 (50%)	1 (50%)	-
Carcinoma gall bladder	-	-	1 (100%)	-	-
Cholangiocarcinoma	-	1 (100%)	-	-	-

In Table 5, most common post-op complication following Whipple's procedure is pancreatic fistula (70%) followed by anastomotic leak (40%) and surgical site infection (40%).

Table 6 shows the correlation between age and post-operative complications. Pancreatic fistula manifested as the most common post-operative complication in age groups 41-50 years and 61-70 years. Anastomotic leak was found to be the most common post-operative complication in 51-60 years age group. Surgical site infection was found to be the most common post-operative complication in 71-80 years age group.

Table 7 shows the duration of hospital stay following different operative interventions.

Following Whipple's Surgery, maximum hospital stay was between 11-20 days (7 cases) followed by 1-10 days (2 cases) out of which there were 2 mortalities, one on 6th day and other on 8th day. Following Triple bypass surgery, maximum hospital stay was between 1-10 days (3 cases) followed by 21-30 days (2 cases) out of which there was one mortality which was on 5th day. Both the patients who underwent double bypass surgery were deceased, one on the 3rd day and other on 14th day.

Most common complication in patients with carcinoma pancreas is pancreatic fistula (75%) whereas in peri-ampullary carcinoma the most common complication is pancreatic fistula (58.3%). pancreatic fistula is a common post-operative complication in patients with ampullary carcinoma.

DISCUSSION

Majority of patients were in age group 51-60 years (35%) followed by 41-50 years (20%) and 61-70 years (20%). The median age of patients in this study was 58 years. In a study performed by Aziz et al majority of patients with malignant obstructive jaundice were in age group of 50-60 years (34%).² Males were found to be in higher proportion (70%) as compared to females (30%) amongst patients presenting with obstructive jaundice with biliary and pancreatic tumors. In one study conducted by Ashraf et al on “malignant obstruction jaundice” 67.2% of patients with malignant obstructive jaundice were male.⁴ In another study conducted by Vijay et al 57% patients with malignant obstructive jaundice were male.³

The most common presenting symptom of patients with obstructive jaundice due to biliary and pancreatic symptoms is jaundice (90%) followed by pruritus (60%) and abdominal pain (50%). In a study conducted by Shetty et al, “malignant obstructive jaundice: a study of investigative parameters and its outcome” most common presenting symptoms jaundice (yellowish discoloration of sclera/ urine) which is 88% followed by pruritus (76%) and abdominal pain (56%).⁵ In a study conducted by Aziz et al most common presenting symptom jaundice (95%), followed by pruritis (90%) and anorexia (80%).²

The most common cause of malignant obstructive jaundice is periampullary carcinoma [excluding D2carcinoma of duodenum] (60%) followed by carcinoma pancreas (20%) and ampullary carcinoma (10%). In a study conducted by Karim et al, most common cause for malignant obstructive jaundice is periampullary carcinoma (53.5%) followed by pancreatic carcinoma (19.9%).⁶ Most common post-op complication following Whipple's procedure is Pancreatic fistula (70%) followed by anastomotic leak (40%) and surgical site infection (40%). In a study conducted by Aoki et al, most common post-operative complication following Whipple's procedure is pancreatic fistula (76.4%) followed by sepsis (43.9%) and prolonged ventilation (42.5%).⁷ Pancreatic fistula manifested as the most common post-operative complication in age groups 41-50 years and 61-70 years. Anastomotic leak was found to be the most common post-operative complication in 51-60 years age group. Surgical site infection was found to be the most common post-operative complications in 71-80 years age group. In a study conducted on factors influencing survival after bypass procedures in patients with advanced pancreatic adenocarcinoma by Muller et al.⁸ Age was not found to be a significant risk factor for post-operative complications.

CONCLUSION

The study investigated obstructive jaundice caused by biliary and pancreatic tumors, focusing on 20 patients meeting inclusion criteria. Most patients were aged 51-70 years, with a median age of 58 years. Males constituted

70% of cases. Jaundice was the predominant presenting symptom (90%), followed by pruritus (60%) and abdominal pain (50%). Periampullary carcinoma was the leading cause (60%) of malignant obstructive jaundice, followed by carcinoma pancreas (20%) and ampullary carcinoma (10%). Among patients undergoing Whipple's procedure, pancreatic fistula was the most frequent complication (70%), followed by anastomotic leak (40%) and surgical site infection (40%). Triple bypass surgery similarly resulted in pancreatic fistula as the primary complication (42.85%), followed by anastomotic leak (28.57%) and surgical site infection (28.57%). Complications varied with age groups and etiologies. In the 41-50 age group, pancreatic fistula (100%), anastomotic leak (50%), and surgical site infection (50%) were common. In the 51-60 age group, complications included anastomotic leak (42.8%), pancreatic fistula (75%), surgical site infection (14.28%), and pulmonary complications (28.5%). For patients aged 61-80, pancreatic fistula remained a significant complication, with varying frequencies of surgical site infection and pulmonary complications based on age.

The study also detailed hospital stays post-surgery. Most patients undergoing Whipple's procedure stayed 11-20 days, while those undergoing triple bypass surgery typically stayed 1-10 days. Overall, the study underscores the prevalence of pancreatic fistula as a major complication following surgical interventions for obstructive jaundice due to biliary and pancreatic tumors, with implications for clinical management and patient outcomes.

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