



A CLINICAL STUDY ON OBSTRUCTIVE JAUNDICE DUE TO PERIAMPULLARY CARCINOMA WITH SPECIAL REFERENCE TO ITS MANAGEMENT

Medicine

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ABSTRACT

Background Periampullary carcinoma includes a group of malignant neoplasm arising in the pancreas or in or near the ampulla of Vater. Main modalities of treatment in patients with obstructive jaundice due to periampullary carcinoma: resection of the tumor with bilioenteric anastomosis, palliative surgical bypass and stent insertion. **Aims and objectives** To find out results, morbidity and mortality to various modalities of treatment to all operable and non operable case of obstructive jaundice due to periampullary carcinoma following proper diagnosis by clinical, radiological and other investigation procedures **Materials and methods** This is a prospective study on patients presented with obstructive jaundice due to periampullary carcinoma with special reference to its management, admitted in different surgical units of Nootan Medical College & Research Centre, Visnagar from the month of August 2019 to July 2022 suspected due to peri-ampullary carcinoma. **Results and discussion** Twenty eight cases studied in regard to their incidence of age, sex, religion, occupation, their clinical features, investigations different etiological factors of obstructive jaundice due to periampullary carcinoma and their management. Maximum numbers of obstructive jaundice due to periampullary carcinoma were found to be due to carcinoma head of pancreas, Most of the patients present late and curative resection was not possible in them 24 out of 30 patients were operated out of which 10 had definitive surgery and in 14 palliative surgeries were done. **Conclusions** Most of the patients' present late and curative resection was not possible in them. Surgical palliation is a better alternative in those patients when nonsurgical palliation is not available.

KEYWORDS

Peri-ampullary carcinoma, Obstructive jaundice

INTRODUCTION

Obstructive jaundice is defined as failure of normal amount of the bile to reach the intestine in the presence of normal amount of synthesis of the bile constituents resulting from mechanical obstruction of the biliary tree outside the liver or within the porta hepatis.

Periampullary carcinoma includes a group of malignant neoplasm arising in the pancreas or in or near the ampulla of Vater. It includes carcinomas of head, neck and uncinate process of pancreas, ampulla, distal common bile duct, and ampullary duodenum.

The hallmark clinical presentation for periampullary carcinoma is jaundice, resulting from obstruction of the common bile duct. The gradual onset of painless jaundice with associated weight loss is suggestive of malignancy. In contrast to benign cases, gall bladder may be palpable in periampullary carcinoma as in benign cases gall bladder gets shrunken because of recurrent attacks of cholecystitis. Death from cholangitis, septicemia or liver failure ensues if obstruction is not relieved in periampullary carcinoma.

There are three modalities of treatment in patients with obstructive jaundice due to periampullary carcinoma: resection of the tumor with bilioenteric anastomosis, palliative surgical bypass and stent insertion. Resection of tumor should be offered to patients with no objective proof of inoperability on preoperative investigations. Curative resection offers the only hope of cure and long term relief from jaundice may be achieved if the tumor is slow growing. If the tumor is found to be irresectable than biliary enteric bypass will give much better palliation than biliary stenting. In cholecystojejunostomy, there is chance of early recurrence of jaundice due to involvement of cystic duct junction by the tumor. Biliary stenting through the tumor provides relief of jaundice and cholangitis. It is indicated in patients who fail to undergo surgical bypass.

Stent insertion can be achieved nonoperatively through either the transhepatic or the endoscopic retrograde route. The endoscopic retrograde route is preferred because it is less traumatic. If endoscopic drainage is not successful a percutaneous transhepatic cholangiogram is performed. A guidewire can be passed through the percutaneous

transhepatic cholangiogram (PTC) catheter and manipulated through the stricture into the duodenum. The endoscopist retrieves the wire through the biopsy channel of the endoscope and endoscopic stent can be inserted through the tumor, over the guide wire.

The present work is an attempt to study and evaluate clinical aspects of obstructive jaundice due to periampullary carcinoma with special reference to its management in the light of review of literatures. Efforts are made to find out different etiological aspects, incidence, manifestations, and their basic principles of management. Ours is an effort to study the various cases of obstructive jaundice due to periampullary carcinoma with special reference to its management.

Hepatobiliary system consists of the following:

- (I) Liver
- (II) Hepatic Duct
- (III) Gall bladder with Cystic Duct
- (IV) Common Bile Duct
- (V) Ampulla of Vater

Pancreas has got relation with the system of having common opening (through its duct) through ampulla of Vater into the duodenum. Jaundice is a common clinical sign that results from yellow pigmentation of skin, mucous membrane or sclera because of impaired excretion or production of bile. Any mechanical obstruction extra hepatic or intra hepatic, which prevents excretion of normally produced bile to reach into the intestine, causes obstructive jaundice. Therefore obstructive jaundice is broadly classified into two:

- (1) Intra hepatic cholestasis and
- (2) Extra hepatic cholestasis.

There are various factors, which are responsible for obstructive jaundice, in cases of Intrahepatic Cholestasis defect lies in the hepatocytes (hepatocellular) or within canaliculi (obstructive). In both forms clinical presentation, biochemical changes and pathological changes are quite similar and both causes conjugated hyperbilirubinaemia. But as extrahepatic variety is more amenable to surgical or endoscopic correction it carries better prognosis.

AIMS AND OBJECTIVES

To find out results, morbidity and mortality to various modalities of treatment to all operable and non operable case of obstructive jaundice due to periampullary carcinoma following proper diagnosis by clinical, radiological and other investigation procedures

MATERIALS & METHODS

This present prospective study on “A CLINICAL STUDY ON OBSTRUCTIVE JAUNDICE DUE TO PERIAMPULLARY CARCINOMA WITH SPECIAL REFERENCE TO ITS MANAGEMENT” was carried in the Department of Surgery, Nootan Medical College & Research Centre, Visnagar for a period of three years extending from August 2019 to July 2022.

SELECTION OF CASES:

The cases were selected from the patients of obstructive jaundice admitted in different surgical units of Nootan Medical College & Research Centre, Visnagar from the month of August 2019 to July 2022 suspected due to peri-ampullary carcinoma.

SELECTION CRITERIA:

Inclusion: All cases of obstructive jaundice due to periampullary carcinoma.

Exclusion: Patient presenting with obstructive jaundice due to other causes

SCHEME OF STUDY:

- Particulars of the patient regarding the name, age, sex, religion, address, MRD nos. was recorded in a semi-structured proforma. History, general examination, systemic examination was carried out.
- Required blood investigation & radiological investigations like ultrasonography abdomen, CT scan of abdomen, MRCP, etc was done for diagnosis.
- Management of the cases and outcome was recorded.
- Follow up during the limited period.
- Intraoperative staging
- Operative procedure – Definitive/Palliative
- Time taken
- Intra operative blood loss
- Intra operative blood transfusion
- Intra operative complication

MANAGEMENT:**Pre-operative Management**

Pre-operative management included proper hydration of the patients, correction of electrolyte imbalance, anaemia, pulmonary infection and treatment of other associated ailments. Laparotomy in patients with extra hepatic biliary obstruction carries three special risks- hypocoagulability, renal failure postoperatively and sepsis.

Anaesthesia: All patients were operated under general anaesthesia with relaxant technique.

Operative Procedure:

- Cholecystojejunostomy
- Choledochojejunostomy
- Whipples procedure
- Triple bypass (Cholecystojejunostomy/ Choledochojejunostomy + gastrojejunostomy + jejuno-jejunostomy)

The patients were usually discharged 1-3 days after removal of stitches. The patients were advised to attend Surgery OPD for their first check up after 15 days after discharge and thereafter after 1 month 3 months, 6 months and 9 months.

RESULTS & DISCUSSIONS

Twenty eight cases of obstructive jaundice due to periampullary carcinoma admitted in different units in the Department of Surgery of Nootan Medical College & Research Centre, Visnagar from August 2019 to July 2022, were studied. They were studied in regard to their incidence of age, sex, religion, occupation, their clinical features, investigations different etiological factors of obstructive jaundice due to periampullary carcinoma and their management.

TABLE-1 AETIOLOGICAL INCIDENCE OF OBSTRUCTIVE JAUNDICE DUE TO PERIAMPULLARY CARCINOMA:

CAUSES	NUMBER OF PATIENTS	PERCENTAGE (%)
Carcinoma head of Pancreas	18	64.29
Lower end Cholangiocarcinoma	5	17.86
Ampullary Carcinoma	4	14.28
Ampullary duodenum Carcinoma	1	3.57

In the present series of obstructive jaundice due to periampullary carcinoma, the maximum number of disease was due carcinoma head of pancreas, i.e, 18 followed by lower end of cholangiocarcinoma (5), ampullary carcinoma (4) and Ampullary duodenum Carcinoma (1)

Table-2 DEMOGRAPHIC VARIABLES

AGE GROUP (in years)	NUMBER OF PATIENTS	PERCENTAGE (%)
0—20	0	0.00
21—30	0	0.00
31—40	2	7.14
41—50	4	14.28
51—60	11	39.29
61—70	10	35.72
71—80	1	3.57
TOTAL	28	100.00
SEX		
Male	15	53.5
Female	13	46.5
RELIGION		
Hindu	26	92.8
Muslim	02	7.2
SE STATUS		
Grade I	0	0.00
Grade II	3	10.71
Grade III	8	28.57
Grade IV	17	60.72
Grade V	0	0.00
OCCUPATION		
Housewife	13	46.43
Labourers	6	21.43
Cultivators	5	17.86
Teachers	1	3.57
Businessman	2	7.14
None	1	3.57
PERSONAL HABITS		
Betal nut	22	78.5
Cigarrretes	14	50
Alcohol	2 occasional	0.7

Table – 3 clinical features

SYMPTOMS	NUMBER OF PATIENTS	PERCENTAGE (%)
Jaundice	28	100.00
Pain Abdomen	16	57.14
Lump Abdomen	13	46.43
Pruritus	16	57.14
Weight Loss	23	82.14
Anorexia	23	82.14
Pale or Clay Stool	18	64.28
Flatulent	7	25.00
Dyspepsia		
Fever	5	17.86
Symptoms of Gastric Outlet Obstruction	1	3.57

Table-4 causes

CAUSES	Number of Patients	PRESENTING SYMPTOMS (n)								
		Pain Abdomen	Lump Abdomen	Pruritus	Weight Loss	Anorexia	Clay Stool	Flatulence Dyspepsia	Fever	Symptom of GOO
Carcinoma head Pancreas	18	11	9	11	16	16	11	3	3	0
Lower end cholangiocarcinoma	5	2	2	3	3	3	4	2	1	0
Ampullary Carcinoma	4	2	2	2	3	3	2	2	1	0
Ampullary duodenal carcinoma	1	1	0	0	1	1	1	0	0	1
TOTAL	28	16	13	16	23	23	18	7	5	1

Table-5 clinical examinations

CAUSES	Number of Patients	CLINICAL EXAMINATION FINDINGS (n)							
		Poor Nutrition	Pallor	Palpable Liver	Ascites	Tender RHC	Palpable Gallbladder	Succussion Splashes	
Carcinoma head Pancreas	18	16	16	13	4	4	14	0	
Lower end cholangiocarcinoma	5	3	3	3	2	2	4	0	
Ampullary Carcinoma	4	3	4	2	1	1	3	0	
Ampullary duodenal carcinoma	1	1	1	0	0	0	0	1	
TOTAL		23	24	18	7	7	21	1	

Table – 6 radiological investigations

Number of Patients	USG Abdomen	CECT Abdomen	MRCP	Final Diagnosis*
10	Ca. head of pancreas			Carcinoma head of pancreas
6	Peri-ampullary carcinoma	Carcinoma head of pancreas		Carcinoma head of pancreas
1	Choledocholithiasis		Ca head of pancreas	Carcinoma head of pancreas
1	No definite cause	Ca head of pancreas		Carcinoma head of pancreas
3	Peri-ampullary carcinoma	Ampullary carcinoma		Ampullary carcinoma
1	Peri-ampullary carcinoma			Ampullary carcinoma
4	Peri-ampullary carcinoma		Lower end Cholangiocarcinoma	Lower end Cholangiocarcinoma
1	Peri-ampullary carcinoma	Peri-ampullary carcinoma		Lower end Cholangiocarcinoma
1	Peri-ampullary carcinoma			Ampullary duodenum Carcinoma

Table-7 laboratory findings

LABORATORY INVESTIGATIONS	NUMBER OF PATIENTS	PERCENTAGE (%)
HAEMOGLOBIN <10 mg%	25	89.28
SERUM BILIRUBIN > 10 mg%	26	92.86
SERUM ALKALINE PHOSPHATASE LEVEL BEYOND 300 IU/L	24	85.71

Table-8 management

OPERATIVE PROCEDURE	NUMBER OF PATIENTS	Percentage	CAUSE OF OBSTRUCTIVE JAUNDICE DUE TO PERIAMPULLARY CARCINOMA
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			Carcinoma head of Pancreas	Ampullary carcinoma	Lower end Cholangiocarcinoma	Ampullary duodenum Carcinoma
Whipple's Operation	10	41.67	7	1	1	1
Cholecystojejunostomy	8	33.33	6	1	1	—
Triple Bypass	5	20.83	3	1	1	—
Hepaticojejunostomy + Jejunojenostomy	1	4.17	—	—	1	—

Available literature on the clinical features and management of obstructive jaundice due to periampullary carcinoma was reviewed in details including the anatomy, physiology and pathophysiology. The causes of biliary obstruction due to other causes were excluded from the study.

The following observations were made:

- The maximum numbers of obstructive jaundice due to periampullary carcinoma were found to be due to carcinoma head of pancreas (64.29%). The 35.71% cases were due to lower end Cholangiocarcinoma 17.86%; Ampullary carcinoma – 14.28% and Ampullary duodenum carcinoma -3.57%.
- Majority of the cases reported in the sixth and seventh decade of life.
- Males are commonly affected than females (1.15:1).
- The maximum number of patients were housewives (46.43%) followed by labourers (21.43%).
- Hindus were found to be affected more than Muslims.
- Pain abdomen was a common symptom— 57.14% and most of the patients reported pain the right hypochondrium.
- 82.14% of the patients had history of recent weight loss.
- Gallbladder lump was found in 75% of the patients and in all of these it was tense cystic in consistency.
- Among the investigations Hb% was found to be low in 89.28% of the cases.
- 82.14% of the patients had serum bilirubin level more than 10 mg%.
- 85.71% of the patients had serum alkaline phosphatase level more than 300 IU/L
- Among the radiological investigations, ultrasound was done as a baseline investigation in all the cases. It detected the cause of obstruction correctly in 92.86% of the patients.
- CT scan was done in 11 cases and the accuracy in diagnosing the different causes was 90.91%.
- MRCP was done in 5 cases i.e. 17.85% and diagnosis was made correctly in all the cases.
- In all cases patients was assessed pre-operatively for the resectability and extent of the tumour. In inoperable cases the patients were managed conservatively and given chemotherapy.
- 24 out of 30 patients were operated out of which 10 had definitive surgery and in 14 palliative surgeries were done.
- Whipple's operation was performed in 7 patients of carcinoma head of pancreas, 1 each of ampullary carcinoma, lower end cholangiocarcinoma and Ampullary duodenum Carcinoma.
- 8 patients underwent Cholecystojejunostomy out of which 6 had carcinoma head of pancreas, 1 had ampullary carcinoma and 1 had lower end cholangiocarcinoma.
- Triple bypass was performed in 5 patients. 3 had carcinoma head of pancreas, 1 had ampullary carcinoma and 1 lower end cholangiocarcinoma.
- Hepaticojejunostomy and jejunojenostomy was done in 1 patients of lower end cholangiocarcinoma.
- The preoperative diagnosis coincided with the post operative diagnosis in all but two patients and it was further confirmed by intraoperative finding and histopathological examination. One patient of pre-operative diagnosis of periampullary carcinoma was found to have lower end cholangiocarcinoma and the other ampullary carcinoma.
- One patients who underwent Whipples operation expired postoperatively.
- Follow up was done after 15 days, 1 month, 3 months, 6 months and 9 months after discharge. Out of the 28 patients, 27 were followed up. 10 patients who initially came for follow up till 1 month after discharge subsequently lost on follow up. 17 patients are coming regularly for chemotherapy and were doing well at their last follow up.

CONCLUSIONS

- In this series twenty eight cases of obstructive jaundice due to periampullary carcinoma were studied.
- Carcinoma head of pancreas was found to be the commonest cause of obstructive jaundice due to periampullary carcinoma
- Males were more frequently affected than females.
- Pain abdomen, weight loss, pale stool and pruritus were the other common symptoms apart from Jaundice.
- Out of 28 cases, 24 were operated — in 10 cases definite surgery was done and palliative surgical bypass was done in 14 patients.
- 17 patients are coming regularly for chemotherapy and were doing well at their last follow up.
- Most of the patients present late and curative resection was not possible in them.
- Surgical palliation is a better alternative in those patients when nonsurgical palliation is not available.
- Lastly, for a better understanding of result, we need a bigger series with a long duration of follow up for a better evaluation of results.

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