

# A Clinical Study of Malignant Causes of Obstructive Jaundice in a Tertiary Care Hospital in Odisha.

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## ABSTRACT

**Background & Aim:** Recently there has been an increase in the incidence of obstructive jaundice due to malignant causes. Our aim was to diagnose and compare the surgical procedures to palliative procedures. **Methods:** This study was conducted on 250 patients at S.C.B Medical College & hospital, Cuttack, Odisha. The diagnosis of mechanical obstruction to the biliary tree is often difficult as the clinical features and biochemical investigation results may vary. **Results:** Non operative management with endoscopic stenting and interventional radiological procedures (PTBD) was 1st choice in certain group of patients. **Conclusion:** Most common site of the tumors are in the head of the pancreas (56.8%). The maximum incidence of malignant obstructive jaundice is between age 51 years and 60 years (28.8%).

**Keywords:** obstructive, jaundice, malignancy, biliary.

## INTRODUCTION

In obstructive jaundice cases, the obstruction in the biliary tree should be treated surgically. The accurate diagnosis of mechanical obstruction to the biliary tree becomes often difficult as the clinical features and the biochemical investigation results may vary.<sup>[1]</sup> Many a times, hepatocellular damage and mechanical obstruction coexist, making the diagnosis together.<sup>[2]</sup>

Treatment of malignant obstructive jaundice is challenging. Surgical treatment varies from definitive surgical procedures to palliative procedures. Non-operative management available includes endoscopic stenting, balloon dilatation and interventional radiological procedures (like PTBD).<sup>[3]</sup>

## MATERIALS AND METHODS

The study was done at S.C.B Medical College Hospital, Cuttack, Odisha on 250 patients from October 2012 to June 2016. Detail history taken and thorough clinical examination was done in the patients with obstructive jaundice.

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### Inclusion Criteria

1. Patients with malignancies of hepatobiliary system or pancreas producing obstructive jaundice.
2. Patients with malignancy outside the hepatobiliary system or pancreas producing infiltration of biliary tree or secondaries in portahepatis.

### Exclusion Criteria

1. Patients with benign causes of obstructive jaundice.
2. Patients with hemolytic and hepatocellular jaundice.

The investigations included, liver function Tests, illhasoundsean, CT Scan, CRCP/PTC. MRAP

## RESULTS

**Table 1: Age distribution of cases in study population**

Age Group	Number	Percentage
20-30	8	3.2%
31-40	28	11.2%
41-50	48	19.2%
51-60	72	28.8%
61-70	64	25.6%
71-80	28	11.2%
More than 80	2	0.8%

The maximum number of patients (72 out of 250) were in the age 51 to 60 years.

**Table 2: Sex distribution of cases in study population**

Sex	Number	Percentage
Male	152	61%
Female	148	39%

Out of the 250 patients studied in detail, there are 152 males and 148 females. Age analysis of these

cases shows that the maximum incidence is between 51 years and 60 years. 32 patients complained of a past history of jaundice. [Table 1,2]

**Table 3: Types of tumor**

Tumor Types	Number	Percentage
Carcinoma of head of the pancreas	42	56.8%
Periampullary carcinoma	44	17.6%

Among the malignancies causing obstructive jaundice carcinoma of head of the pancreas is the commonest cause, followed by periampullary carcinoma, cholangiocarcinoma, carcinoma of the gall bladder and miscellaneous causes. Miscellaneous causes include secondaries to portahepatis from the stomach or the gastrointestinal tract and malignancies producing an extrinsic compression of the bile duct.[Table 3]

**Table 4: Presenting symptoms**

Symptom	Number	Percentage
Jaundice	250	100%
Dark colored urine	250	100%
Anorexia	244	97.6%
Weight loss	220	88%
Pruritus	112	84.8%
Abdominal pain	172	68.8%
Weakness	166	66.4%
Nausea	140	56%
Vomiting	62	24.8%

In our study, the most common presenting complaints are jaundice, dark colored urine, anorexia and weight loss. 144 patients gave a history of a palpable mass in the right upper abdomen, probably gall bladder. A presentation with abdominal mass and ascites was common when compared to western studies, suggesting that patients were to seek treatment.[Table 4]

**Table 5: Clinical signs elicited**

Sign	Number	Percentage
Scleral icterus	250	100%
Hepatomegaly	124	89.6%
Palpable gall bladder	144	57.6%
Abdominal mass	82	32.8%
Ascites	56	22.4%
Pelvic deposit	8	3.2%
Virchow's node	4	1.6%

Various operative procedures were done for the patients with malignant obstructive jaundice. Cholecystojejunostomy + gastrojejunostomy + entero-enterostomy led the list, with 116 patients undergoing this procedure. Classical Whipple's resection was done in 24 patients. Segment III bypass + hepaticojejunostomy was done in 2 patients, no palliative surgeries were possible and only stenting was done. No surgical intervention was done in 70 patients, as they either refused to consent for surgery or had a poor general condition. [Table 5]

**Table 6: Operative procedures performed**

Procedure	Number	Percentage
Cholecystojejunostomy + gastrojejunostomy + entero-enterostomy	116	46.4
Whipple's pancreaticojejunostomy	24	09.6
Segment III bypass + hepaticojejunostomy	4	01.6
Bile duct stenting	36	14.4
No procedures done	70	28.0

When laparotomy was performed, it was found that the regional lymph nodes were affected in a majority of patients (76.5%), followed by liver metastasis and peritoneal deposits. Very few had metastases to the pelvic region, the lungs and the brain. [Table 6,7]

**Table 7: Pattern of Metastasis**

Pattern of Metastasis	Number	Percentage
Regional lymph nodes	192	76.8%
Liver deposits	166	66.4%
Peritoneal deposits	82	32.8%
Others	36	14.4%

**Table 8: Complications following surgical procedure**

Complication	Number	Percentage
Wound infection	36	14.47%
Cholangitis	24	9.6%
Delayed gastric emptying	24	9.6%
Seroma	4	1.6%
Ascitic fluid leak	16	6.4%
Bile leak	4	1.6%
Renal failure	8	3.2%
Death	30	12%

Complications after Whipple's procedure are common. There were 16 cases of enterocutaneous fistula, 8 cases of pancreatitis, 8 cases of wound infection and one case of myocardial infarction. 8 patients died in the postoperative period (mortality within 30 days of surgery). 2 patient died due to myocardial infarction and the other patient died due to cholangitis.

Four cases of obstructive jaundice was caused by an extension of a growth from the stomach into the region of the terminal common bile duct, for which cholecystojejunostomy with gastrojejunostomy was done for palliation of jaundice and duodenal obstruction, The remaining two cases had infiltration from the growth up to the portahepatis, where decompression was not attempted. Common hepatic duct or common bile duct growths were not resectable, due to local infiltration to the vital vasculature around the portahepatis. Out of 16 cases having growth, 6 patients were treated with the placement of a stent through the growth into the dilated intrahepatic biliary tree. Wound infection was reported in 36 patients, followed by cholangitis in 24 patients, which were treated by antibiotics, removal of the collection and proper dressing. There were 24 cases of delayed gastric emptying, which was treated with nasogastric suction. Most of the patients died due to life threatening cholangitis and renal failure.

Histopathology reports of the patients subjected to a Whipple's resection shows that most of the growths are either moderately differentiated or poorly differentiated adenocarcinomas.

The average hospital stay in the patients undergoing a curative surgery depended on whether they underwent a pre-operative endoscopic biliary stenting or not. Patients who underwent a pre-operative biliary stenting had an average hospital stay of 27 days, compared to the patients who did not (35 days).

## DISCUSSION

There were so many causes of obstructive jaundice. In cases of pancreatic malignancies producing obstructive jaundice, choice of radical surgical procedure (Whipple's resection or to choose a simple bypass procedure) is still debatable.

In 1993, Geer and Brennan studied 130 patients who underwent a standard pancreaticoduodenectomy, with an actuarial 5-year survival rate of 21%. In John Hopkins hospital, study of 201 patients undergoing a pancreaticoduodenectomy had shown 5-year survival rate of 37%. This study also demonstrates that the survival has improved from decade to decade (14% in 1970, 21% in 1980 and 36% in 1990). In sharp contrast, the Mayo clinic group (1995) reports a hospital mortality of 3% and a 5-year actuarial survival rate of 6.8%.<sup>[4]</sup>

The factors, which influence the survival, include negative resection margins, tumor diameter more than 5 mm and a DNA content measured by image cytometry. In patients in the Hopkins series (1995), 5-year survival was 39% when the DNA content of the malignancy was diploid, but was only 8% when the DNA content was aneuploid. Lymph node status is an important factor which has a role on the prognosis. In the study from Hopkins, 144 patients with positive nodes had a 5-year survival of 14%. Thus, positive lymph nodes are clearly indicate poor prognosis.<sup>[5]</sup>

For palliative procedures, recent reports from John Hopkins (in 118 patients) showed a mortality of 1.5% and an overall complication rate of 37%. The median hospital stay was 14 days. In our study, the hospital mortality is 9.32% and a complication rate of 34.5% is noted. The median hospital stay is 21 days.<sup>[6]</sup> The single most important factor in the surgical treatment of carcinoma pancreas is the experience of the surgeon. Pancreaticoduodenectomy is an operation to be performed by the experienced surgeon. In the study of literature by Dowsatt, Whipple's resection was associated with a 1-year survival rate of 31 %, whereas bypass surgery is associated with a survival rate of 6%.<sup>[7]</sup> From these records, it was evident that a Whipple's resection is a better form of surgical treatment, at least in cases of periampullary carcinoma in experienced hands.

While treating tumors at the confluence of the bile duct, Longmire was able to resect only 6 out of 33 lesions. Similarly, Smith<sup>8</sup> treated 33 such cases in 13 years, and excised only five. Longmire, in anatomical and clinical studies, recognized that the involvement of vessels was the limiting factor to resection in many instances.

Bettschart et al,<sup>[9]</sup> in a series of 53 patients, subjected 40 patients to some form of biliary drainage, majority of them undergoing a percutaneous transhepatic technique. The median survival was only 2.5 months. It is clear that the results of non-operative techniques for biliary decompression in biliary cancer have yet to show improvement over a surgical approach. However, with the liberal use of round ligament approach, 28 patients were operated on with a mortality of 21%. Recent experiences in France by Bismuth reveal a good quality palliation, with an operable mortality of only 7%. The results are better than those achieved by non-surgical methods.<sup>[10]</sup>

In our study, pre-operative endoscopic biliary stenting had a comparatively shorter average hospital stay of 27 days, compared to an average hospital stay of 35 days for patients who did not undergo the same. This was also correlated with a decrease in the frequency of post-operative complications. This may be explained by the fact that the decrease in the bilirubin load reduces all other comorbidities associated with surgery in a jaundiced patient.

## CONCLUSION

Majority of the tumors are in the head of the pancreas (56.8%). The maximum age incidence of malignant obstructive jaundice is between 51 years and 60 years (28.8%). The resectability rate of the lesions is 9.6%, with 12 patients having undergone a Whipple's resection. A palpable gall bladder was noted in 57.6% of our cases, compared to a reported rate of 30-35% in western literature. A palliative cholecystojejunostomy with gastrojejunostomy tops the list of operative procedures. The mortality rate due to palliative procedures is 93%. The observed morbidity patterns are wound infection (10.46%), cholangitis (6.9%) and delayed gastric emptying (6.9%).

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