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A STUDY OF OUTCOMES WITH SELF EXPANDING METAL STENTS VS PALLIATIVE SURGERY IN INOPERABLE HEPATOBILIARY AND PANCREATIC MALIGNANCY

Gastroenterology

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KEYWORDS

Introduction:

Pancreatic and Hepatobiliary malignancies are known for their late presentations as locally advanced pathologies often with distant metastases. The management of these patients is often palliative with the main aim being to maintain a patent biliary system. A number of treatment modalities have been developed for the same over the past few decades, though no clear guidelines exist on when to use which.

Endoscopic biliary stenting has become a standard palliative treatment option for inoperable obstructive jaundice resulting from malignancies. The early plastic stents are now uncommonly used due to a number of complications arising from frequent stent blockage, increased bacterial biofilm as well as sludge formation. The introduction of self-expandable metal stents (SEMS) with their larger internal diameters has led to significantly increased patency rates as well as better overall outcomes. (1-3) Especially in malignant biliary strictures metal stents have been found to be far superior to plastic stents. (4)

However SEMS are not totally free of issues, the open-mesh stents force their expansile wires into the surrounding tissue leading to tumor ingrowth and stent occlusion. Covered expandable metal stents were developed to overcome this problem of tissue ingrowth, but early data suggests that they are more prone to migration and dislocation.

Another treatment modality used is Percutaneous trans-hepatic biliary drainage (PTBD). This however is associated with significant patient discomfort, risk of catheter dislodgement, biliary leaks as well as sepsis (5,6) This is therefore predominantly used in patients unamenable to decompression by endoscopy (inaccessible location) or surgery (poor functional status).

Finally palliative surgery in metastatic, inoperable bile duct malignancy are associated with significantly prolonged hospital stays and poor outcomes.

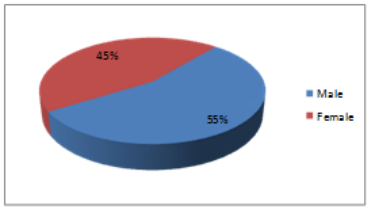
This study aims to analyze the outcomes using the aforementioned treatment modalities in inoperable hepatobiliary and pancreatic malignancies in tertiary care hospitals.

Methods:

This is a Retrospective Observational study based in a Tertiary referral center – Madras Medical College,Chennai between 2014 to 2016. A total of 80 patients with advanced pancreatic and hepatobiliary malignancies were selected among whom 36 were deemed to be inoperable. The outcomes with various treatment modalities were analysed in this inoperable subgroup.

Results:

Graph 1:



The above graph depicts sex distribution in the study group. Males accounted for - 20(55%) patients while 16(45%) were female.

Table 1:

Sl. No	Etiology	Nos	Percentage
1	Periampullary carcinoma including Pancreatic CA	15	41
2	Cholangiocarcinoma	7	19
3	GB Malignancy	6	16
4	HCC with Biliary Infiltration	4	11
5	Colonic CA with Liver Metastasis	2	5.5

6	RCC with Biliary Infiltration	1	2.7
7	Neuro-endocrine tumour with Liver metastasis	1	2.7

HCC -Hepatocellular Carcinoma, GB -Gall Bladder, RCC -Renal Cell Carcinoma

The above table shows the various subtypes of inoperable hepatobilary and pancreatic malignancy. Majority 15(41%) are contributed by peri-ampullary carcinoma, 7(19%) by cholangiocarcinoma, 6(16%) by GB malignancy, 4(11%) HCC with biliary infiltration, 2(5.5%) Colonic CA with liver metastasis, 1(2.7%) by RCC with biliary infiltration and Neuroendocrine tumor with liver metastasis.

Table 2:

Sl. No	Mode of Treatment	Nos	Percentage
1	Plastic Stent	16	44
2	Biliary SEMS	10	27
3	PTBD	6	16
4	Palliative Surgery	4	11

Above table represents the various treatment modalities used in our inoperable hepatobiliary and pancreatic malignancy group. Among thirty six patients, 16(44%) underwent palliative plastic stent alone in the view of poor performance status. Ten (27%) patients underwent Biliary self-expanding metal stents while the remaining Six(16%) patients underwent PTBD.

Table : 3 Clinical guidelines of biliary stents placements(7,8)

Malignant disease	Malignant hilar obstruction	1. CT or MRI to assess resectability 2. Endoscopic drainage is first line therapy 3. Unilateral drainage is associated with higher mortality compared with bilateral drainage 4. Drainage of >50% of the liver volume is associated with longer survival.
	Malignant non-hilar biliary obstruction	1. If expected survival is <4 months, a plastic stent (10Fr) is recommended 2. If expected survival is >4 months, SEMS is more cost-effective. 3. Preoperative drainage of resectable hilar biliary obstruction is indicated, in acute cholangitis, or in cases associated with severe pruritus.

DISCUSSION :

Biliary stents are commonly used in the management of both benign and malignant biliary obstructions. Regardless of the type or number of stents used, ensuring drainage of more than 50% of the liver volume has been found to be essential to improving patient outcomes.

In our study of inoperable hepatobiliary and pancreatic malignancies, majority of patients underwent plastic stent placements(44%) followed by SEMS (27%), PTBD (16%) and Palliative Diversion Surgery in 4(11%).

In this study, nearly half the patients who underwent plastic stent placements required a stent exchange due to the development of cholangitis or persistent hyperbilirubinemia. On the contrary, none of the patients who underwent SEMS placements required any further intervention. This is likely due to the fact that SEMS have a diameter that is almost 3 times that of plastic stents, thereby ensuring much lower occlusion rates. As a result most major centers no longer use plastic stents for patients with good functional status and longer estimated survival periods.

Of late, a new strategy is evolving where short-length (4–6 cm) SEMS are being placed in patients who undergo preoperative ERCP [10]. If resectable disease is confirmed at surgery, the stent is removed with the surgical specimen [9]. If the disease is deemed inoperable at surgery, the patient's jaundice being already palliated does not require a major biliary diversion surgery [9, 10]. Also, fully covered and removable SEMS are currently available and their use may have additional implications for patients with resectable pancreatic cancer [11].

A number of stent-related complications as well as the need for endoscopic reintervention could potentially be avoided if SEMS were deployed instead of plastic stents in inoperable hepatobiliary and pancreatic malignancy. SEMS have been shown to provide adequate and durable biliary decompression in these patients [12].

A recent meta-analysis from 2015 regarding surgical bypass versus endoscopic stenting for distal inoperable MBO demonstrated no differences for success of the procedures, but differences were observed with better outcomes for endoscopic therapy with 10% less mortality and 19% less complications associated with the procedure [13].

Limitations of this study include its retrospective design as well as the small numbers of enrolled subjects. Nevertheless, the findings are significant given the careful selection of subjects who did not have prior endoscopic interventions and considering that all procedures were performed at a single center by a dedicated operative team.

In conclusion, our study suggests that use of SEMS is associated with the best overall outcomes for patients with inoperable hepatobiliary and pancreatic malignancies.

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