

PROFILE OF GASTRIC MALIGNANCIES PRESENTING AS GASTRIC OUTLET OBSTRUCTION – A ONE AND A HALF YEAR PROSPECTIVE STUDY FROM KASHMIR VALLEY

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Abstract

Background: Gastric adenocarcinoma is one of the frequent cancers seen in Kashmir valley. Patients often present with advanced disease and Gastric Outlet obstruction (GOO). We studied the profile and management of patients presenting with malignant GOO due to Gastric cancer at our center.

Methods: A prospective one and half year study from May 2018 to Dec 2019 was done in the Department of Surgical Gastroenterology, Government Medical College, Srinagar. All adult patients with clinical and endoscopic evidence of malignant gastric outlet obstruction and features of gastric cancer were included.

Results: Twenty three patients with GOO due to Gastric malignancies were noted in this period with a M:F ratio of 1.9:1 and age range of 32 to 79 years. Vomiting was the most common symptom present in 83 % patients followed by early satiety which was present in 74% of cases. Though patients gave history suggestive of weight loss but only 17 % patients had a documented weight loss. Palliative gastrojejunostomy was done in 21 patients and Radical Distal gastrectomy was done in 2 patients. Surgical site infection was the most common (06 cases; 26%) complication in our group followed by delayed gastric emptying (04 cases; 17.4%) and pulmonary complications (03 cases; 13%).

Conclusion: Gastrojejunostomy offers good palliation of symptoms in patients with GOO due to GC. It can be offered with equally good results by laparoscopic access.

Keywords: Gastric Cancer, Gastric Outlet obstruction, Palliative gastrojejunostomy.

Introduction

Gastric cancer (GC) is one of the leading gastrointestinal cancer related morbidity and mortality worldwide as well as in Kashmir valley and adenocarcinoma is the most common malignancy seen in the stomach, comprising 90% of all gastric cancers.¹⁻³ Early symptoms of gastric cancer are nonspecific and are often confused and treated symptomatically as acid peptic disease or chronic gastritis. In the absence of a robust population based screening programme for early detection, patients frequently present at an advanced stage of their disease, often manifesting as Gastric Outlet obstruction (GOO).³⁻⁶ Advanced gastric cancer is one of the most common etiologies for gastric outlet obstruction in our set up. Therefore, we intended to study the profile and surgical

management of patients presenting to us with malignant GOO due to gastric cancer.

Materials and Methods

This was a prospective one and a half year observational study, conducted from May 2018 to December 2019 in the Department of Surgical Gastroenterology, Government Medical College, Srinagar. All the patients having clinical and endoscopic evidence suggestive of malignant GOO with histopathological confirmation of gastric malignancy were included in the study.

Patients with previous history of peptic ulcer disease or previous gastro duodenal surgery were excluded, so were those patients with unresectable and /or inoperable disease without gastric Outlet obstruction who underwent palliative prophylactic gastrojejunostomy at the time of their explorations. All the patients included in our study

were studied for their demographic profiles, clinical presentations, laboratory parameters, surgical intervention(s) done and the outcome.

Results

A total of 23 patients (15 males and 9 females; M: F ratio, 1.9:1) underwent surgery for GOO due to gastric cancer. The overall age range for patients was 32 to 79 years (Mean= 51.5 years), 38 to 79 years for male patients (Mean= 55.5 years) and, 32 to 55 years for female patients (Mean= 44 years).

Preoperatively, after the diagnosis was made, a nasogastric tube was inserted in all the patients and normal saline washes were given. Patients were rehydrated with intravenous fluids and serum electrolytes were checked and corrected according to the patient status. Mean Hemoglobin of the patients was 8.1g/dl (range 4.2 – 11.6g/dl) and preoperative blood transfusion was done in 14 patients. Parental nutrition was started preoperatively, selectively in 04 patients only. Preoperative endoscopic biopsy showed adenocarcinoma in 22 cases and was found inconclusive in one patient which proved out to be a gastro intestinal stromal tumor (GIST) on postoperative histopathology.

Vomiting was the most common (83%) symptom, present in 19 patients followed by early satiety (74%) which was present in 17 cases. On questioning, though 16 patients (70% cases) responded to the subjective feeling of weight loss and asthenia in affirmative but, only four patients (17% cases) had a documented weight loss.

Most patients were referred from various Medical Gastroenterology Departments of the valley. Patients were operated on emergent or semi emergent basis after preoperative optimization. Seven (30%) patients were cleared with American Society of Anaesthesiology (ASA) III, and sixteen (70 %) patients with ASA II grading. Patients were given preoperative intravenous antibiotics (Piperacillin + Tazobactam 4.5 gm in seventeen patients (74%) or Ceftriaxone Sulbactam 1.5 gm in six patients (26%) at the time of induction. Abdomen was opened up by midline incision in 20 patients and bilateral subcostal incision in 03 patients. Anterior gastrojejunostomy (GJ) was performed in antecolic fashion in 21 patients and distal gastrectomy with D2 lymphadenectomy was performed in two patients. All anastomoses were hand sewn using 00-silk suture on 25mm round bodied needle (Ethicon TM). Average blood loss was 36 ml (range 20 – 110 ml). Abdominal drain was kept in two patients. Nasogastric tube was kept in all patients for stomach washes preoperatively and also, in the immediate postoperative period for drainage, and removed on first postoperative day (POD), 20 cases, among which 01 patient needed reinsertion which was later removed on

eighth POD; or when the aspirate was less than 100 ml per 24 hours (03 patients). Deep vein thrombosis/ Pulmonary thromboembolism prophylaxis with low molecular weight heparin was started on POD-1 in all patients.

All patients were kept nil by mouth (NBM) for 48 to 72 hours and allowed to have clear liquid sips after that. Solid diet was started after POD-5. Sixteen (70%) patients could tolerate a balanced soft diet by POD-7 while five patients (21%) started solid diet after day ten. However, 02 patients (9%) were discharged on liquid diet only; both of which had long standing poorly controlled diabetes. The average hospital stay of the patients was 8.7 days (range = 6 – 14 days). Surgical site infection (SSI) was the most common (06 cases; 26%) complication in our patients followed by delayed gastric emptying (DGE), 04 cases; 17.4% and pulmonary complications (03 cases; 13%). There was no immediate postoperative mortality in the group. (Tables 1-3)

Table 1: Postoperative complications of the patients in the study (N=23)

Complication	Number (n)	Percentage(%)
Morbidity		
Basal atelectasis	02	8.7%
Collapse, consolidation left lung	01	4.3%
SSI	06	26.0%
DVT	Nil	Nil
DGE	04	17.4%
Bleeding	Nil	Nil
Mortality	Nil	Nil

Table 2: Presence of co-morbidities of patients in the study (N=23)

Co-morbidity	Number (n)	Percentage (%)
Diabetes	03	13 %
Hypertension/CAD/Ischemic Heart Disease	07	30.4 %
Chronic Obstructive pulmonary disease (COPD)	06	26 %
Renal impairment	01	4.3 %
SCH	04	17.4 %

Table 3: Disease Spread at presentation of the disease of patients in the study (N=23)

Disease Spread	Number (n)	Percentage (%)
Local Invasion:	21	91 %
Pancreas	11	48 %
Duodenum	5	21 %
Hepatoduodenal ligament/ Liver	5	21 %
Root of mesocolon	3	13 %
Abdominal wall	1	4 %
Metastases:	15	65 %
Liver	6	26 %
Peritoneum	13	56 %
Lung	1	4 %
Left Supraclavicular lymph node	1	4 %

Discussion

Gastric cancer is one of the leading causes of cancer related deaths and GOO is not an uncommon presentation of this disease in our setup. Malignant GOO is a surgical emergency and if not attended immediately can lead to death due to dehydration, dyselectrolytemia and acid-base imbalance superadded by the negative effects of malnutrition and cancer cachexia.^{1,3}

Palliation of symptoms:

Gastrojejunostomy offers excellent palliation of symptoms in patients with documented GOO in GC. In our study, 70 % patients (16 cases) tolerated soft solid diet by seventh POD & 90 % (21 patients) by POD-10; only 02 patients (8% cases), who did not tolerate solid diet, were discharged on POD-09 & POD-14, on a high protein liquid diet which, they were not tolerating before surgery. Level of hydration and well being of operated patients improved significantly in 90% patients (21 cases). These findings were comparable to many studies,⁷⁻¹⁰ however, patients still complained of abdominal discomfort and occasional upper abdominal tightness post surgery for significant period of time and this was the last symptom to get relieved. The patients need to be counseled for the same before surgery.

In two patients of GOO with resectable GC, radical distal gastrectomy with D-2 lymphadenectomy offered equally effective relief from symptoms except, for the fact that hospital stay was more (9 and 14 days) and these were the ones who did not tolerate solid diet. One of these patients had underlying chronic kidney disease, the status of which significantly improved post gastrectomy (radical distal gastrectomy with D-2 Lymphadenectomy with Billroth – II reconstruction).

The role of Palliative Gastrojejunostomy in unresectable GC versus endoscopic stent placement has been researched extensively by different groups.^{7, 11-13, 15-17} Though, the efficacy of Palliative GJ in patients with GOO is well proven, the evidence^{13-14,18} does not support doing Palliative GJ preemptively in patients with advanced metastatic disease without GOO. In fact, it has been shown in various studies⁽¹³⁻¹⁴⁾ that Palliative GJ in patients with metastatic cancer, poor performance status and limited expected survival can actually worsen the patient status and is thus, not indicated.¹⁸ The criticism to GJ in such clinical scenario comes from the evidence^{12-13,18} that such patients may not develop GOO in their limited expected life time, or even if it develops, the same clinical results can be achieved with endoscopically placed gastroduodenal stents without the potential morbidity and mortality of anaesthesia, laparoscopy or laparotomy and gastrojejunal anastomosis with its own potential risks of anastomotic leaks, wound complications, and pulmonary complications.^{7, 11, 15}

However, cost of the stent, availability of expertise and infrastructure to insert the stent within the obstructed lumen effectively and without potential complications of bleeding, perforation, malposition, migration and obstruction which may ultimately need surgery should be taken into consideration when offering the therapy.^{12-13,15} However, gastro duodenal stents offer a definite advantage when dealing with patients not fit for surgery, those with limited life expectancy and offering immediate symptomatic relief.^{10, 19, 20}

Many studies have proven laparoscopic palliative GJ for unresectable GC with GOO to be superior to the open method.^{18, 21-22} Novel techniques of double scope technique,²² stomach partitioning gastrojejunostomies²³⁻²⁶ and their modifications^{27- 28} have been described in literature.

Patients which present with GOO as their index presentation should undergo contrast enhanced computed tomography (CECT) abdomen & Chest only after proper hydration and correction of dyselectrolytemia and acid base imbalance which may involve a calculated delay (till optimization) in performing cross sectional imaging to avoid contrast related nephrotoxicity in an already dehydrated patient. If the computed tomography (CT) suggests the disease to be resectable, the patient should be prepared for a definitive surgery with potentially curative resection which usually involves distal or near total gastrectomy with D2 lymphadenectomy on semiemergency basis. However if the patients performance status does not allow a level 2 lymphadenectomy; a D-1 lymphadenectomy may be considered in such situations to decrease the operating and anaesthesia time in emergency setting.

In our experience, patients of malignant GOO with metastatic disease, distant spread, malignant ascites, poorly differentiated adenocarcinoma/ signet ring cell carcinoma fair very poor with surgery and thus, surgery should be preferably avoided in this subgroup of patients. This is comparable to the findings of Jeurnink SM et al, and Kokkola A et al.^{13- 14} However, in patients without peritoneal metastases, liver metastases, no malignant ascites, well differentiated adenocarcinoma, and locally advanced GC, a bias towards a surgical bypass may be helpful and the decision must be taken on case to case basis. Consistent results were noted by Jeurnink SM et al, and Kokkola A et al in their studies.^{13-14, 19, 29} The incidence of DGE was only 4 % in our study which is in contrast to the findings of other studies, where it ranged from 29 – 59%.^{23, 27, 30} This may be explained by the fact that we aggressively do preoperative optimization in patients planned for surgery.

Improved survival & Improved Quality of Life:

Studies by Keranen, Stupart, and Okumura et al^{11, 31- 32} have shown to increase the disease free survival/overall survival (DFS/OS) in their series. However, such conclusion cannot be made in our study due to small sample size and short follow up of patients and as such; a long term follow up is needed to look for the same. However, the role of palliative GJ and/or resection, wherever indicated, (in resectable lesions) has been shown to increase the quality of life as well.^{18, 33- 35}

Conclusion

Gastric Cancer is a common gastrointestinal malignancy in Kashmir valley. Patients may present as gastric outlet obstruction due to initial missed diagnoses mostly due to over the counter use of proton pump inhibitors or anti-acids. Mass awareness against such practice of self medication and, robust population based screening programmes are needed. Patients of GC presenting with GOO often have a locally advanced disease which may not necessarily be unresectable. Potentially curative resection can still be attempted in this subgroup. Palliative GJ offers an excellent palliation in these patients however; patients with GOO should be necessarily optimized before undertaking any surgical procedure.

Though, the treatment protocols for resectable gastric cancer has been thoroughly described in guidelines set up by different International societies, the same has not been described for advanced GC including those presenting as GOO, in areas with high incidence but, with limited resources especially, when nearly half of the patients with GC present at an advanced stage. In places like India where the cost of healthcare especially surgery in government sector hospitals is largely subsidized and funded by government; the cost of surgery may prove to be lower than the endoscopically placed stents. However, a multicentric study at government funded hospitals needs to be initiated on this aspect of Palliative surgery.

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