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A study on management of gastric carcinoma cases at a tertiary care hospital

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Abstract
The diagnosis of carcinoma stomach is mainly based on upper gastrointestinal endoscopy with biopsy. It allows visualization of the tumour and provides tissue for pathologic examination. Other modality used is Computed Tomography (CT) scan, which plays an important role in evaluation of metastatic disease. Preparation of the patient was done by improving the general condition by supplementary foods like eggs, milk, and protein rich diet. Anaemia was corrected by oral/parental iron supplements and by blood transfusion. In case of gastric outlet obstruction, Stomach wash was carried out with normal saline to remove the undigested food materials one day prior to surgery.
Distal Gastrectomy with Billroth II reconstruction was the most commonly performed curative procedure. It accounted for 61.54% of the cases. Total Gastrectomy with Roux-En-Y reconstruction was performed in 13.46% of the patients. Palliative surgery was performed in 25% of the patients with gastro-jejenostomy being the common procedure.

Keywords: Gastric carcinoma, distal gastrectom, billroth ii reconstruction

Introduction
Carcinoma stomach is defined as a malignant epithelial tumour of the stomach mucosa with glandular differentiation. Gastric cancer is a relatively common and serious disease. It is fatal and effective treatment has remained unresolved. It is a disease of the elderly, with peak incidence in seventh decade of life. Worldwide, gastric cancer is the fourth most common cancer and second leading cause of cancer death. Carcinoma stomach accounts for 7, 34, 000 deaths annually [1]. It has an increasing trend in the developing countries and is especially prevalent in Asia. Factors associated with increased risk of gastric carcinoma include nutritional (salted food. high nitrate/complex carbohydrate consumption), environmental (contaminated water, smoking, lack of refrigeration), social (low social class), medical (prior gastric surgery, adenomatous polyps, gastric atrophy). However, early infection with Helicobacter pylori is a predominant risk factor which predisposes to subsequent development of gastric carcinoma.
The diagnosis of carcinoma stomach is mainly based on upper gastrointestinal endoscopy with biopsy. It allows visualization of the tumour and provides tissue for pathologic examination. Other modality used is Computed Tomography (CT) scan, which plays an important role in evaluation of metastatic disease.
Surgical resection is the only curative treatment for gastric cancer [2]. A complete margin negative (Ro) resection is the only potentially curative treatment for gastric adenocarcinoma [3]. A recently published study from the Japan Clinical Oncology Group showed a 69% overall 5-year survival rate in patients with clinically curable T2b, T3, and T4 gastric cancer, treated with D2 gastrectorny alone Unfortunately, the existing data suggest that the incremental survival benefit attendant to adjuvant treatment is marginal, particularly in those patients who have had an adequate resection. In patients with gross unresectable, metastatic, or recurrent disease, palliative chemotherapy has not been demonstrated to conclusively prolong survival, but occasionally, a patient has a dramatic response.
Surgery is the main modality of treatment practiced m this country. Curative surgery is done in about 20% of the cases and palliative surgery in one-third of the cases. The prognosis of gastric cancer remains relatively unchanged despite major improvements in diagnosis and therapy. Reports from different parts of the country show 5-year overall survival rate ranging from 5% to 18% [4].

Methodology

The patients were planned for surgery following the investigations. The stage of the tumour was determined by the investigations. The operative procedures performed were broadly divided into curative and palliative procedures based on the stage. The operative procedure selected for a patient was based on the stage of the tumour, the presenting symptoms, the general condition and nutrition of the patient.

Preparation of the patient was done by improving the general condition by supplementary foods like eggs, milk, and protein rich diet. Anaemia was corrected by oral/parental iron supplements and by blood transfusion. In case of gastric outlet obstruction, Stomach wash was carried out with normal saline to remove the undigested food materials one day prior to surgery.

On the evening before the operative day, Patient's abdomen is prepared from nipple to mid thigh. Soap water enema given in the evening and in the morning on the day of surgery. The consent for operation is taken from the patient.

The planned operative procedure was carried out under general anaesthesia. During the operation, few of the patients required blood transfusion. Post-operatively all the patients received a course of antibiotics and intravenous fluids comprising of dextrose and normal saline, amount of which was adjusted to the need of the patient according to the hydration status. Ryles tube aspiration is carried out at regular intervals. A fluid intake and output chart was maintained. Depending on the return of the bowel sounds, Ryles tube was removed on 2°d _3rc1 post-operative day and oral fluids are started. The patients were counseled to consume about 6 small meals per day once normal diet is started. The skin sutures were normally removed on 10th_ 12thday. The patients are discharged following the suture removal.

The follow up is planned one month after the surgery followed by 3 months and 6 months. On the follow up patients are examined thoroughly and the issues were addressed.

Results

Table 1: Endoscopic Appearance of Lesion

Type of lesion	Number of patients	Percentage
Ulcerative	33	63.46
Polypoid	17	32.69
Irregular mucosa	02	03.85

Under endoscopic appearance Polypoid lesion was found to be higher at 63.46% and Ulcerative type of lesion was found at 36.54%. The irregular mucosa along with thickened gastric wall was seen in linitis plastica. The stomach was poorly distensible. This diagnosis was confirmed by CT abdomen.

Table 2: Site of Lesion

Site of Lesion	Number Patients	%
Pylorus	38	73.08
Lesser curative	8	15.38
Greater curative	3	5.77
Linitis plastica	2	3.85

The study found highest 73.08% of lesion in the Pylorus site and at 15.38% in the lesser Curative region. 3 patients presented with tumour in the greater curvature and 2 patients had Linitis plastica confirmed by CT abdomen.

Table 3: Staging of Gastric carcinoma

Staging	Number oatients	%
Tl early gastric cancer	2	3.85
T2 stage	16	30.77
T3 stage	29	55.77
T4 infiltrating neighbouring Organs	4	7.69 19.23
Ml metastasis (liver, ascites) Table 25 : Staging of Gastric C	10 arcinoma	19.23

55.77% of the patients presented in the T3 stage and 30.77% of the patients presented in T2 stage. Only 2 patients were diagnosed in the Tl stage with Early Gastric cancer. T4 stage accounted for 7.60% of the patients. Metastasic disease in the form on liver metastasis and ascites were seen in l0 patients.

Table 4: Nodal status of staging

Staging Staging	Number oatients	%
N0	02	3.85
N1	22	42.31
N2	18	34.62
N3	10	19.23

Most of the patients were positive for lymphnodes with only 2 patients being negative. The most common lymph node presentation was Nl in 42.85% followed by N2 in 34.62%. N3 accounted for 19.23 percent of the patients.

Table 5: Operative Procedure

Operative Procedure	Number of patients	Percentage
Distal Gastrectomy + Billroth II	32	61.54
Total Gastrectomy + Roux-En-Y Reconstruction	07	13.46
Gastro-jejenostomy bypass	09	17.31
Feeding jejenostomy	04	07.69

Distal Gastrectomy with Billroth II reconstruction was the most commonly performed curative procedure. It accounted for 61.54% of the cases. Total Gastrectomy with Roux-En-Y reconstruction was performed in 13.46% of the patients. Palliative surgery was performed in 25% of the patients with gastro-jejenostomy being the common procedure.

Table 6: Curative Vs Palliative Surgery

Surgery	Number Patients	%
Curative	39	75
Palliative	13	25

Curative surgery was performed for 75% patients while Palliative surgery was performed for 25% of patients.

Table 7: Post-Op Complications

Post-Op Complications	Number of patients	Percentage
Respiratory complication (lung collapse *i* pneumonia)	24	46.15
Wound infection	10	19.23
Anastomotic leak	5	15.38
Post-op hematemesis	3	5.77
Post-op - mi	5	9.62
Post-op mortality	2	3.85

In the Post-Op observation, Respiratory complications like pneumonia and lung collapse were found at 46.15%, wound infection at 19.23% and Anastomotic leak at 15.38%. Post-operative Myocadial Infarction was observed in 5 patients out of which 3 patients survived and 2 patients expired. Post-operative hematemesis was observed in 3 patients.

Discussion

Sixty three (63)% of the patients had Ulcerative lesion in the stomach and 32% of the patients had polypoid lesion. Hence Ulcerative type of carcinoma stomach is more common than the polypoid type in our study. %. The irregular mucosa along with thickened gastric wall was seen in linitis plastica. The stomach was poorly distensible. This diagnosis was confirmed by CT abdomen.

The most common site of lesion in our study was the pylorus-antrum accounting for 73% of the patients. The lesion was present in the body of the stomach in 11 patients accounting for 21 percent in our study. Out of the 11 patients, 8 patients had the tumour in lesser curvature and 3 patients in the greater curvature. Linitis plastica was suspected in 2 patients and was confirmed with CT scan abdomen. In the study by Chaudhary SMSA *et al*. [5], 79% of patients had the lesion in the pylorus-antrum, 14% of the patients had the tumour in the body of stomach. In the Plummer JM *et al*. [6] study, 56 percent of the patients had the tumour in the antrum and 18 percent of the patients had the tumour in the body of stomach.

The Staging of Gastric cancer was pre-operatively based on Computed tomography (CT) in our study. The findings were confirmed intra-operatively and by histopathology examination. In our study 2 patients were diagnosed with early gastric cancer in Tl stage. Majority of the patients presented in the T3 stage accounting for 55.7%. The T2 stage was seen in 30.7% of the patients. T4 stage, infiltrating neighbouring organs was served in 11.5% of patients. The tumour was found infiltrating spleen in 2 patients. The patients underwent splenectomy along with the resection. Metastatic disease was seen in 19.2 percent of the patients. The metastatic disease in three patients was not detected in CT abdomen and was found intra- operatively. Hence the resection was abandoned and the patients were subjected to palliative surgery. In the Chaudhury SMSA *et al*. study, most common stage was T4 (52%) followed by T3 (32%). No patients were found in Tl stage [7].

The nodal status was pre-operatively evaluated by Computed tomography (CT). It was confirmed intra-operatively and by histopathology examination. In our study, 2 patients were NO i.e., nodes negative. 96% of the patients had nodal positivity with Nl in 42% of the patients, N2 in 35% of the patients and N3 in 19% of the patients. In the Chaudury SMSA *et al*. study, 11% patients were NO, 52% of the patients were N2 and 37% of the patients were N3. In the Zhang *et al* [8] study, 10.5% of the patients were NO, 17.4% were Nl, 47.4% of the patients were N2, 24.7% were N3.

Curative resection was possible in 75% of the patients, palliative procedure was performed in 25% of the patients. The most common procedure performed was Distal Gastrectomy with Billroth II reconstruction accounting for 61% of the patients. Total Gastrectomy with Roux-en-Y reconstruction was performed in 7 patients (13.4%). Palliative surgery was performed in 25% of the patients. It included predominantly Gastro-jejenostomy bypass and feeding jejenostomy in a few patients.

Conclusion

Majority of the patients present in the advanced stage owing to the non-specific symptoms and delay in diagnosis. Upper Gastro-intestinal endoscopy forms the most important diagnostic tool. Surgery is the only potentially curative form treatment. Curative surgery is not possible in a substantial number of patients. There is a need for early diagnosis so that the disease can be treated adequately which translates into an improved survival. The prognosis for Curative surgery of early gastric cancer has been excellent. Hence there must be a liberal use of Upper Gastro-intestinal endoscopy in the elderly population to facilitate early detection of the tumour.

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