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Original Article

A Study on Surgical Management of Carcinoma Stomach

A Vasan[1], R Seenivasagan[2], Heber Anandan[3]

[1]Associate Professor, Department of General Surgery, Thoothukudi Medical College and Hospital, Thoothukudi, Tamil Nadu, India, [2]Senior Assistant Professor, Department of General Surgery, Thoothukudi Medical College and Hospital, Thoothukudi, Tamil Nadu, India, [3]Senior Clinical Scientist, Department of Clinical Research, Dr. Agarwal's Healthcare Limited, Tirunelveli, Tamil Nadu, India

Abstract

Introduction: Cancer is known as one of the major causes leading to many disorders, death, and disabilities worldwide. Among all organ cancers, gastrointestinal tract cancers present an interesting pattern in distribution worldwide.

Aim: The aim was to study the surgical management of carcinoma stomach.

Materials and Methods: The observational cross-sectional study in patients with carcinoma stomach. Clinical examination and other relevant investigation were done.

Results: Total radical gastrectomy was performed for three cases of carcinoma stomach, two involving the body and one involving the fundus. Distal radical gastrectomy was performed for 11 patients with carcinoma of antrum. In 15 of our patients where antral growth become adherent to adjacent structures, only palliative partial gastrectomy was performed for these patients. About eight patients present with the irresectable growth of antrum causing gastric outlet obstruction, where only a palliative anterior gastrojejunostomy was done as a bypass procedure.

Conclusion: Surgery, in the form of a complete surgical resection, remains the cornerstone of management of resectable gastric adenocarcinoma. There is high level of evidence to support the role for perioperative chemotherapy as well as adjuvant chemoradiotherapy to improve the overall and recurrence-free survival in these patients.

Key words: Gastrectomy, Gastric cancer, Management

INTRODUCTION

Gastric cancer (GC) is the second most common cause of cancer-related deaths causing about 800,000 deaths worldwide/year.[1] Although its incidence is on the decline in the developed nation, it continues to be the "captain of the men of death" in developing countries. It carries bad prognosis despite the available conservative treatments and new surgical techniques. Although surgical resection with clear margins is considered the definitive treatment, rates of locoregional, or distant recurrences are still high.[2] The intent of treatment is "curative" for patients with Stage I-IIIC and "palliative" for patients with Stage IV disease. In patients with locally advanced disease, surgical resection should be undertaken following neoadjuvant chemotherapy only if a complete/R0 (microscopically negative margins) resection is feasible (based on the assessment of response to chemotherapy).[3] A combination of chemotherapy and radiotherapy has been very effective in certain malignancies such as head and neck cancers and anorectal cancers. The chemotherapy potentiates the effect of radiation therapy and helps in controlling distant metastasis. Pre-operative chemoradiotherapy looks attractive as it has the potential to downsize tumors and make unresectable GC resectable.[4] While surgery is not indicated in the presence of distant metastatic disease, palliative resections may need to be undertaken in patients who have uncontrolled bleeding or gastric outlet obstruction who are otherwise well preserved with a projected longer life expectancy.[5] A gastrojejunostomy may be helpful in patients with distally obstructing tumors with features of gastric outlet obstruction but distant metastases. In those patients with short-life expectancy, endoscopic stenting, or an endoscopically placed nasojejunal tube for feeding may be useful in patients with obstructing tumors.

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Corresponding Author: Dr. R Sreenivasagan, Department of General Surgery, Thoothukudi Medical College Hospital, Thoothukudi, Tamil Nadu, India. Phone: +91-9486115337. E-mail: seenivasagan@rocketmail.com

Aim

The aim was to study the surgical management of carcinoma stomach.

MATERIALS AND METHODS

The observational cross-sectional study was conducted in Department of General Surgery, Government Rajaji Hospital, Madurai. Histopathologically proven cases of carcinoma stomach were screened. Institutional Ethics Committee approval and informed consent from the patients were obtained. Thorough evaluation of these patients was done clinically, endoscopically, and radiologically, and other relevant investigations were done to arrive at a confirmatory diagnosis. Most of these patients were treated surgically with varied results. The incidence of carcinoma stomach in relation to age, sex, and site were studied. The various available investigations, the treatment modalities, and their outcomes were analyzed. All patients were followed up in the immediate post-operative period, and some were followed up thereafter, for a period ranging from 1 month to 2 years.

RESULTS

The youngest patient in our study was a 35-year-old woman with an undifferentiated carcinoma of antrum of the stomach and the oldest was on 81-year-old man with carcinoma of antrum. In our series, GC was found to be common in the fourth decade of life (38%). In our series of 50 cases, antrum forms the most common site of carcinoma stomach (68%). The next common site was body of stomach (20%). The least common site is fundus (6%). In our study, protruding type is the most common (52%) out of three types of lesions, protruding has a better prognosis than other two types. Infiltrative type carries the worst prognosis. Most of our cases with infiltrative type lesions were inoperable. Infiltrative type is least common in our series about 22% (Table 1). In our series of 50 cases, all cases were reported as adenocarcinoma (Table 2). Adenocarcinoma of stomach has been histologically subclassified as papillary, tubular, mucinous, and signet ring type. Four of our cases with diffusively infiltrative lesions were reported as signet ring type. In our study, dyspepsia is the most common clinical presentation (36%) followed by loss of weight (18%) and pain abdomen (14%).

Total radical gastrectomy was performed for three cases of carcinoma stomach, two involving the body and one involving the fundus. Distal radical gastrectomy was performed for 11 patients with carcinoma of antrum. In 15 of our patients where antral growth become adherent to adjacent structures, only palliative partial gastrectomy was performed for these patients. About eight patients present with irresectable growth of antrum causing gastric outlet obstruction, where only a palliative anterior gastrojejunostomy was done as a bypass procedure (Table 3). Feeding gastrostomy done for five cases of advanced carcinoma of fundus extending on to cardia causing obstruction. Four of our cases present with huge growth involving entire body of stomach and become fixed to adjacent structures, where even a palliative surgery could not be possible, biopsy alone was done and closed. About four patients presented with terminal cachectic stage with secondary liver and ascites for whom a palliative chemotherapy alone given.

The shock was the cause of death in four cases. Two of our patients developed post-operative hemorrhage indicated by bloody aspirates in nasogastric tube resolves within 48 h in all cases. Two of the patients developed duodenal stump blowout which are promptly recognized and controlled with drain, which resolves with time. In our series, two patients developed dumping syndrome, which subsides within 3 months in all cases. Six of our patients developed wound infection, which subsided with antibiotics and drainage. Prophylactic antibiotics are indicated if extensive dissection or thoracotomy is done. Other complications are anastomotic leak pancreatitis, afferent and efferent loop obstruction, blind loop syndromes, malabsorption, and nutritional disturbances (Table 4). Post-operative adjuvant chemotherapy reduces the recurrence rates and prolongs survival to a certain extent. Most commonly used chemotherapeutic regimen of carcinoma stomach is 5-FAM regimen which includes 5-fluorouracil, adriamycin, and mitomycin. All patients in our series were started on post-operative chemotherapy, but only twenty patients completed the course of six cycles, and others fell out in the middle. Out of 29 cases who underwent curative resection, twenty patients were followed up to 1 year, out of which four developed local recurrence who were referred to Oncology Department for Radiotherapy and Chemotherapy. Out of seven cases who were given palliative chemotherapy alone, none has turned up for follow-up after 6 months.

DISCUSSION

The first laparoscopic gastrectomy with a Billroth II construction for cancer was performed by Kitano and published in 1994.[6] Since then, several authors have reported successful laparoscopic subtotal or total gastrectomy, demonstrating the important post-operative advantages of this procedure. However, the role of laparoscopic surgery in the treatment of GC has not yet been defined, and doubts remain about its ability to satisfy all the oncological criteria that are met with during conventional open surgery.[7-10]

In prospective-randomized studies of open versus laparoscopy-assisted distal gastrectomy (LADG) for early GC,

Table 1: Distribution of macroscopic types

Macroscopic types	Antrum	Body	Fundus	Total (%)
Protruding	16	6	4	26 (52)
Ulcerative	10	2	1	13 (26)
Infiltrating	8	2	1	11 (22)
Total	34	10	6	50 (100)

Table 2: Distribution of stages of cancer

Stages	Antrum	Body	Fundus	Total (%)
I	16	4	2	22 (44)
II	6	3	2	11 (22)
III	5	2	1	8 (16)
IV	7	1	1	9 (18)
Total	34	10	6	50 (100)

Table 3: Distribution of types of cancer

Type of surgery	Number of cases (%)
Total radical gastrectomy	3 (6)
Distal radical gastrectomy	11 (22)
Palliative partial gastrectomy	15 (30)
Anterior gastrojejunostomy	8 (16)
Feeding gastrostomy	5 (10)
Laparotomy and biopsy	8 (16)

Table 4: Distribution of complications

Complication	Number of patients (%)
Wound infection	6 (12)
Partial dehiscence	2 (4)
Duodenal blowout	2 (4)
Hemorrhage	2 (4)
Dumping syndrome	2 (4)
Shock	4 (8)
Total	18 (36)

interim results showed that LADG had several advantages over open surgery. These included early recoveries, less post-operative pain, and better post-operative pulmonary functions, while yet maintaining the radicality of surgery.[11]

In Japan, early-stage GC (T1/T2, N0) is considered the only indication for laparoscopic gastrectomy.[12] There is an evidence in the literature that the procedure is technically safe, recovery is faster, hospital stay is shorter, and there is less pain, as compared to the open procedure. However, data on the oncological outcome of the laparoscopic gastrectomy is limited, and high-level evidence is lacking. Good-quality multicenter-randomized controlled trials (RCTs), comparing the outcomes after laparoscopic surgery versus open surgery is necessary to establish the role of laparoscopy in GC surgery. Laparoscopic gastrectomy has a steep learning curve, and credentialing for such procedures remains an unresolved issue.[13] With this background, new data, even from RCTs, will have to be interpreted with caution before laparoscopic gastrectomy can be firmly established as a procedure of choice.

CONCLUSION

Complete removal of the tumor with microscopically negative margins (R0 resection) offers the best chance of survival in patients with GC. Removal of the tumor may be achieved by endoscopy or surgery, the choice depending on the extent of the tumor and nodal involvement. Chemotherapy, radiotherapy, and novel targeted therapies serve as adjunctive tools to surgery in improving survival and/or delaying recurrence of disease, whenever they are indicated.

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