Surgical Treatment of Gastric Cancer in Albania

Xheladin Dracini, MD1, Etmont Celiku, MD1, Arvin Dibra, MD1, Genc Burazeri, MD2, Suela Kellici, MD³

1First Clinic of General Surgery, University Hospital Centre “Mother Theresa”, Department of Surgery, Faculty of Medicine, Tirana University, Tirana, Albania; 2 Department of Public Health, Faculty of Medicine, Tirana University, Tirana, Albania; ³ Pharmaceutical Department, Faculty of Medicine, Tirana University, Tirana, Albania

Abstract

Objective: Gastric cancer is a major health problem, although its incidence has somewhat declined during the last years. The study aims to give a complete overview of the surgical treatment of gastric cancer in the First Service of General Surgery UHC “Mother Theresa” in Tirana, Albania.

Methods: Our study presents extensive evidence of 624 patients, operated in the First Service of General Surgery UHC “Mother Theresa” in Tirana, Albania with the diagnosis of gastric cancer in the last eleven years. The study analyses demographic, clinic, operative and pathologic data of the patients obtained from clinical, operative and pathologic records.

Results: M : F ratio was 2:1. The average age of all patients was 59.5 +/- 11.6 (18 – 90) years: in the age-group 51 – 70 years were 61.2% of all patients. The patients were divided in three groups according to the localization of the tumor: gastric cardia and fundus tumors were found in 105 (17%) patients, gastric corpus tumors were found in 279 (44.7%) patients and gastric antrum and pylorus tumors were found in 240 (38.3%) patients. The UICC/AJCC (TNM) classification was as follows: stage 1 were 49 (8%) patients; stage 2 were 174 (28%) patients; stage 3 were 213 (34%) patients and stage 4 were 188 (30%) patients. Overall operability index was 70%; 188 (30%) patients resulted inoperable at the time of intervention. In gastric cardia and fundus tumors, the most performed operation was total gastrectomy (70.5% of operable patients). In gastric corpus tumors, the most performed operation was distal gastrectomy (54%), followed by total gastrectomy (42% of operable patients). In gastric antrum and pylorus tumors, all operable patients (100%) were treated with distal gastrectomy. In the histopathologic aspect, most of the tumors were adenocarcinoma (74.7%). Overall postoperative morbidity and mortality were respectively 26.8% and 1.8%. The most common postoperative complications were cardiopulmonary complications in 44 (7%) patients and wound infection in 37 (6%) patients.

Conclusions: In the curative surgical treatment of advanced gastric cancer, the procedure of choice is closely associated with the stage and localization of tumor. In the gastric antrum and pylorus tumors the procedure of choice is distal gastrectomy; otherwise in the gastric cardia and corpus tumors the most performed operation is total gastrectomy.
in the First Clinic of General Surgery UHC “Mother Theresa”, Tirana, Albania in the last eleven years.

Patients and Methods

The medical, patologic and operative records of 624 patients who underwent elective surgery in the First Clinic of General Surgery UHC “Mother Theresa” in Tirana for the diagnosis of gastric cancer from January 1, 2000 till December 31, 2010 were reviewed and analysed in every detail.

The diagnosis of gastric cancer was made according to the diagnostic protocol of our institution, consisting in upper GI endoscopy and biopsy and chest/abdominal CT with oral and iv contrast.

Patients were divided in three groups according to the localization of the tumor in: gastric cardia and fundus, gastric corpus and gastric antrum and pylorus.

TNM staging of gastric cancer was made according to the UICC/AJCC classification for gastric cancer [3-5].

Inoperability factors were Diffuse Peritoneal Carcinomatosis (DPC) and hepatic metastases, diagnosed during laparotomy.

Surgical procedures included distal gastrectomy, total gastrectomy, distal esophagectomy + proximal gastrectomy (superior polar gastrectomy) and subtotal esophagectomy + proximal gastrectomy (Lewis – Santy operation). All anastomoses performed in the above mentioned procedures were hand sewn.

Postoperative complications were defined as those occurring during hospitalization or within 30 days of surgery. Mortality was defined as deaths occurring in hospital [6].

Data were shown as means +/- (SD) (ranges). The statistical analysis consisted of Student’s “t” test. Significance level was set at P < 0.05.

Results

From 2000 to 2010 (11 years), 624 patients underwent surgery in the First Clinic of General Surgery UHC “Mother Theresa”, in Tirana for the diagnosis of gastric cancer. Demographic data of all patients are given in Table 1.

Table 1: Demographic data of all patients (624).

<table>
<thead>
<tr>
<th>Sex</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>419 (67%)</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>205 (33%)</td>
<td></td>
</tr>
<tr>
<td>M : F ratio</td>
<td>2 : 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (years)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>60 +/- 11 (22 – 90)*</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>59 +/- 12.5 (18 – 87)*</td>
<td></td>
</tr>
<tr>
<td>All patients</td>
<td>59.5 +/- 11.6 (18 – 90)</td>
<td></td>
</tr>
</tbody>
</table>

*) P = NS.

382 (61.2%) patients were of the age group 51 – 70 years.

The patients were divided in three groups according to the localization of the tumor: gastric cardia and fundus tumors were found in 105 (17%) patients, gastric corpus tumors were found in 279 (44.7%) patients and gastric antrum and pylorus tumors were found in 240 (38.3%) patients. The percentage of male patients was higher than that of the female patients, but there were no evident gender differences between the three groups. The mean age of the patients was similar in each group.

The UICC/AJCC (TNM) staging of all patients is given in Table 2. Four hundreds and one (64%) patients were stage 3 and 4 of gastric tumor.

Table 2: The UICC/AJCC staging of all patients (624).

<table>
<thead>
<tr>
<th>UICC/AJCC (TNM) stage</th>
<th>All pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>49 (8%)</td>
</tr>
<tr>
<td>2</td>
<td>174 (28%)</td>
</tr>
<tr>
<td>3</td>
<td>213 (34%)</td>
</tr>
<tr>
<td>4</td>
<td>188 (30%)</td>
</tr>
</tbody>
</table>

From 624 patients, 188 (30%) resulted inoperable at the time of laparotomy. Inoperability factors were as follows: Diffuse Peritoneal Carcinomatosis (DPC) 75 (40%) patients; hepatic metastases 66 (35%) patients and DPC + hepatic metastases 47 (25%) patients. RO gastrectomy rates were: gastric cardia and fundus tumors 81% (R0/R1 = 4 : 1); gastric corpus tumors 76% (R0/R1 = 3 : 1); gastric antrum and pylorus tumors 83% (R0/R1 = 5 : 1) and all operable patients 80% (R0/R1 = 4 : 1). Overall operability index and R0/R1 ratio are shown in Table 3.

In all 188 inoperable patients was performed a midline laparotomy; in 56 (30%) patients with gastric outlet obstruction was performed a gastroenterostomy;
in 43 (23%) patients a feeding jejunostomy; in 26 (14%) patients a palliative gastric resection and in 63 (33%) patients only biopsy.

Four hundreds and thirty six (70%) patients were treated with curative intent, as shown in Table 4.

The demographic data of our patients indicate clearly that gastric cancer is rare before the fourth decade of life, with a slight preference for the male gender.

The incidence of tumors of gastric body and distal stomach has progressively decreased and the incidence of cardia and fundus cancer has increased in the past two decades [1, 7, 10]. In our patients we found that 83% of gastric tumors were localized in corpus and antrum/pylorus.

In general, preoperative data were concordant with the operative findings, but a major drawback was the delayed diagnosis, with the consequence that 68% of all patients were stage 3 and 4 according to UICC/AJCC classification, resulting in a relatively low operability index (70%); 188 (30%) patients resulted inoperable at the time of intervention. The operability index was higher (83%) in antrum/pylorus tumors, compared with gastric cardia and corpus tumors (61% and 62% respectively). The advanced stage of tumor was perhaps a consequence of the delayed diagnosis, therefore every attempt should be made to increase early diagnosis [7, 8, 10]. This aim is particularly difficult to achieve in low- and middle- income countries, like Albania. Sometimes the diagnostic protocol has failed, because the lack of necessary equipment or insufficient technical expertise.

It is well known that the stage at which gastric cancer is diagnosed is the main determinant of efficacy of surgical therapy. To improve the early diagnosis of gastric cancer is necessary to apply routine use of upper GI endoscopy, associated with multiple biopsies, in all cases of gastric disorders [10, 15].

When performed in accordance with the principles of surgical oncology a distal gastrectomy is preferable to a total gastrectomy: nutritional status and quality of life are better with the former and survival is
In the present study were used different surgical techniques in relation with the TNM stage and localization of gastric tumor. For gastric cardia and fundus tumors group, total gastrectomy was the most performed operation in 70.5% of cases, followed by distal esophagectomy and proximal gastrectomy in 17% of patients. For gastric corpus tumors group, the majority of patients were treated with total gastrectomy (54% of patients), while was also used distal gastrectomy in 42% of patients. Gastric antrum and pylorus tumors group patients were all treated through distal gastrectomy.

Gastric cancer is a disease in which locoregional control is difficult to obtain [7]. At the majority of our patients that underwent surgical treatment with curative intent was performed a standard limited lymphadenectomy (D1), but in advanced cases also an extended lymphadenectomy (D2). A more radical lymphadenectomy, just increases the complication rates, without adding to the overall efficacy of the surgery in regard of patient survival [6, 11, 12].

In the histopathologic aspect, the tumors were adenocarcinoma (74.7%), “signet ring” carcinoma (17.9%), non-Hodgkin lymphoma (5.9%) and GIST (1.5%).

Forty six (7.4%) patients were operated under assumption of adenocarcinoma, but specimen histopathologic diagnosis resulted non-Hodgkin lymphoma and GIST. Those cases were tumors greater than 5 cm with local spread; unclear or erroneous preoperative histologic diagnosis and operations in situations of emergency (haemorrhage).

The overall morbidity and mortality rates of 26.8% and 1.8% respectively, were comparable to the rates reported by other authors [11-14].

Conclusions

Patients with advanced gastric cancer have a poor prognosis [8, 12]. In developing countries surgery alone remain the standard treatment of advanced gastric cancer, but evidence support a multimodal approach, including neoadjuvant therapy [9, 10]. In our opinion, the procedure of choice for curative surgical treatment of gastric cancer is closely associated with the TNM stage and localization of tumor, as confirmed by NCCN guidelines [15]. In our institution the overall morbidity and mortality of operated patients were low, compared with other authors [11-14]. In the gastric antrum and pylorus tumors the procedure of choice is distal gastrectomy; otherwise in the gastric cardia and corpus tumors the most performed operation is total gastrectomy [2, 7, 8, 12-14].

References