Sphincter-saving proctectomy for rectal cancer in the elderly

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AIM: Rectal cancer shows a high incidence in older patients, however, only few reports focused exclusively on rectal cancer with the exclusion of the surgery of the colon. This retrospective study aims to compare short-term and long-term outcomes for rectal cancer in patients more than 75 years old with that observed in younger patients.

MATERIAL OF STUDY: Four hundred consecutive patients operated on for primary rectal adenocarcinoma were collected in a prospective institutional database and divided into two groups: group 1 (≥ 75 years, n = 98); group 2 (<75 years, n = 302). Sphincter-saving restorative proctectomy was the only procedure considered. Main clinical and pathological data, morbidity, clinical anastomotic leakage, reoperation rate, 30-day mortality, overall survival, and cancer-related survival were assessed and compared.

RESULTS: In our experience, advanced age itself is not a contraindication for surgical sphincter-saving proctectomy in rectal cancer patients, although it is associated with higher morbidity and mortality. Overall survival is lower in patients over 75 age, but cancer-related survival is not different between the two groups.

CONCLUSIONS: In our experience, advanced age itself is not a contraindication for surgical sphincter-saving proctectomy in rectal cancer patients, although it is associated with higher morbidity and mortality. Overall survival is lower in patients over 75 age, but cancer-related survival is not different between the two groups.

KEY WORDS: Outcomes, Rectal Cancer, Elderly, Sphincter-saving, Surgery

Introduction

Elderly people represent almost all patients diagnosed with and treated for rectal cancer. Surgical management and treatment decisions for this disease are becoming increasingly complex, but only few data are in literature with older patients. Incidence of rectal cancer increases with age, with an age-specific incidence of 135 new cases per 100 000 people per year between 80 and 84 years of age 1-2. Surgical resection of the primary tumour site and its lymph node tributaries, when technically possible, is the unique treatment which avoids complications that compromise the quality of life, such as obstruction or bleeding. For these reasons, surgery is a necessary curative therapy for patients with rectal cancer but there are many points of view about the optimum surgical management of elderly patients who are a heterogeneous group, ranging from fit to frail people. The percentage of patients that need surgery decreases with age and the curative surgery rate is substantially lower in older patients. Elderly people need more emergency surgery than do younger patients 3-6. Usually, non restorative procedures are performed, such as Hartmann’s procedure, abdomino-perineal resection or local excision 7,8. Transanal Endoscopic Microsurgery (TEM), is also useful for elderly and unfit patients 9-12.
Generally, elderly patients are recruited to clinical trials less often than younger patients, neoadjuvant radiotherapy or chemoradiotherapy is less used and in most colorectal cancer guidelines, routine screening is not offered to patients older than 75 years.

The resection of rectal cancer is one of the physiologic status and high rate of complications and its risks and benefits in the elderly have not been clearly defined. In literature, no data shows surgical sphincter-saving proctectomy outcomes for rectal cancer in the elderly. Our retrospective study aims to compare short-term and long-term outcomes for rectal cancer in patients more than 75 years old with that observed in younger patients.

Methods

STUDY POPULATIONS

A series of 400 rectal cancer patients observed at National Cancer Centre “G. Paolo II” and at University of “Magna Graecia” were collected in a prospective institutional database and divided into two groups: group 1 (≥ 75 years, n = 98); group 2 (<75 years, n = 302). In the global series, there were 400 primary rectal adenocarcinomas with stage T1-4N0-2M0-1 (according to the American Joint Committee on Cancer 7th Edition, TNM Staging for Colo-Rectal Cancer).

Helical computed tomography of the thorax, abdomen and pelvis revealed that patients had distant metastases. Before surgery, each patient was classified by the American Society of Anesthesiologist physiological status scoring system (ASA). Mechanical and antibiotic prophylaxis was administered as well as heparin to prevent infections, venous thrombosis and pulmonary embolism. In elective as in emergency, sphincter-saving restorative proctectomy was the only procedure performed and only in the post-operative time stoma were fashioned to treat complications. Except for 24 patients, in all other, silicone transanal tube NO COIL®, 60-80 mm long, 2 mm thick with a calibre of up to 2 cm, was applied and secured to the perineal skin by two stitches, then removed on the seventh postoperative day if no signs of leakage occurred.

All elective patients with T3-4 underwent short course neoadjuvant radiotherapy (RT) or chemoradiotherapy (CHT). The clinico-pathological features of patients are summarized in Table I and Table 3. Main clinical and pathological data, morbidity, clinical anastomotic leakage, reoperation rate, 30-day mortality, overall survival, and cancer-related survival were assessed and compared (Table II). The follow-up interval was calculated in months and defined as the time between the date of surgery and the date of the event. Signed consent from individual patients were obtained to conduct the study.

STATISTICAL ANALYSIS

Overall and cancer specific survival were estimated by the Kaplan-Meier product limit method. T-test was used to statistically compare means. Correlations among the all analyzed parameters and the main clinico-pathological features were performed by Chi-square test (χ²). p<0.05 was considered significant. With absolute frequencies less then 5 units, test of Fisher was used. All statistical analyses were performed with the SPSS statistical software package (SPSS, Inc., Chicago, IL).

Results

Significant differences between the two groups were detected with regard to the American Society of Anesthesiologists classification, comorbidities and the emergency presentation. Overall morbidity rate was significantly lower in the group of patients aged ≥ 75 years. No significant differences were detected with regard to the overall survival and cancer-specific survival. The 5-year overall survival rate was 76% in group 1, 84% in group 2 (P = 0.0223). The 5-year cancer-specific survival rate was 86% in group 1, 91% in group 2 (P = 0.0179).

![Graph](image-url)
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30.4% and 20.2% in group 1 and group 2, respectively. Clinical anastomotic leakage rate was 6.1% in group 1 while 10.9% in group 2. The reoperation rate was 7.1% and 9.9% respectively in group 1 and group 2, mainly related to anastomotic leakage. The operative mortality rate was 6.1% in group 1 and 1.3% in group 2 (Table II). The Kaplan-Meier overall survival showed a significant difference between the two groups of patients with overall 5-year survival rate of 76 % in group 1, 84 % in group 2 ($P = 0.0223$), and cancer-specific 5-year survival rate of 86 % in group 1 while 91 % in group 2 ($P =0.0179$) (Fig. 1 A-B).

**Discussion**

Rectal cancer is one of the most representative diseases whose incidence correlates directly with increased age. In literature, there are few evidence-based data for surgical rectal cancer management in elderly patients. Most studies, are single-centre series from specialized surgical centres, with inherent selection biases. They include mainly elderly people experiencing successful ageing with no serious comorbidity. Most frail elderly patients with rectal cancer also are not referred to surgeons or are spontaneously excluded from some surgical indications $^{22-24}$. Advantage age should not rule out patients from undergoing curative rectal resection. Elderly patients had significantly more comorbidities than did younger patients. Comorbidity, rather than age, increases mortality and the occurrence of complications after curative surgery for rectal cancer in elderly patients. However, despite higher risk of post-operative mortality and reduced overall survival, selected elderly patients benefit from radical surgery for rectal cancer $^{25-29}$. Age alone should not be a contraindication to restorative rectal resection. Older adults are known to have a deterioration of the pelvic diaphragm muscles and exter-

### Table I - Clinical features of patients

<table>
<thead>
<tr>
<th></th>
<th>Overall population</th>
<th>&lt;75 AA</th>
<th>%</th>
<th>≥75 AA</th>
<th>%</th>
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<td>M</td>
<td>248</td>
<td>188 M</td>
<td>62.2%</td>
<td>60 M</td>
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<td>F</td>
<td>152</td>
<td>114 F</td>
<td>37.8%</td>
<td>38 F</td>
<td>38.8%</td>
<td>0.8556***</td>
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<td></td>
<td>239</td>
<td>158</td>
<td>52%</td>
<td>81</td>
<td>83%</td>
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<td>RT-CHT</td>
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<td>64</td>
<td>21.2%</td>
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<td>NO RT-CHT</td>
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<td>78.8%</td>
<td>82</td>
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<td>HIGH</td>
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<td>45.03%</td>
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<td>LOW</td>
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<td>I-II</td>
<td>204</td>
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<td>1</td>
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<td>R0</td>
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<td>76.5%</td>
<td>78</td>
<td>79.5%</td>
<td>0.524***</td>
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<tr>
<td>R1-R2</td>
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<td>71</td>
<td>23.5%</td>
<td>20</td>
<td>20.4%</td>
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**statistically not significant**
nal anal sphincter, leading to a greater incidence of continence and defecation disorders. Sphincter function, assessed clinically and if necessary after manometry, is an essential element to consider in the pre-operative assessment and the decision-making procedure. If sphincter function assessment is found acceptable, low colorectal anastomosis, coloanal anastomosis and intersphincteric resection are possible in selected elderly patients and are associated with a good functional results and quality of life.

Results of studies of rectal surgery by laparotomy in the elderly patients, have drawn attentions to the increased risk of cardiac and pulmonary post-operative complications. These patients, seem to benefit more from a laparoscopic approach than do younger patients. For these reasons, we think that, a multidisciplinary cooperation, involving oncologists, gastroenterologists, radiotherapists, anaesthetists, radiologist, pathologists and surgeons, is essential in elderly patients. In these patients, after oncogeriatric assessment taking into account physi-
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Riassunto

Il tumore del retto ha un’alta incidenza nei pazienti anziani ma pochi dati sono presenti in letteratura rispetto al tumore del colon. L’obiettivo del nostro studio è quello di comparare i risultati in termini di dati clinici e patologici post-operatori, di sopravvivenza e di sopravvivenza cancro-correlata, tra due gruppi di pazienti (gruppo 1: ≥ 75 anni, n = 98; gruppo 2: <75 anni, n = 302) affetti da tumore del retto sottoposti ad intervento di proctectomia restaurativa con rispetto dell’integrità anatomo-funzionale dello sfintere anale. I nostri risultati non mostrano nessuna differenza statisticamente significativa tra i due gruppi, in particolar modo per il dato della sopravvivenza cancro-correlata. La sopravvivenza globale risulta essere inferiore nel gruppo dei pazienti anziani rispetto ai pazienti con età minore dei 75 anni.

References


Published online 10 May 2016 - Ann. Ital. Chir., 87, 3, 2016 261


