Optimal management of asymptomatic generalized rectal cancer is still the matter of debate. The aim of the study was to review stage IV rectal cancer patients who were treated in our clinic since 2000 till 2008 in order to evaluate the effectiveness of surgery. 

Material and methods. Fifty-two generalized rectal cancer patients treated with elective resection of primary tumor were identified. Patients’ age, sex, duration of hospital stay, modality of surgery, complications, postoperative mortality rate and survival rate were assessed.

Results. Median survival was 16.3 months. Postoperative complications occurred in 29% patients. Postoperative mortality rate was 1.9%.

Conclusions. In properly selected group of patients elective resection of primary tumor may cause low mortality rate and acceptable morbidity rate. This surgical modality allows to avoid potential complications of tumor local growth.

Key words: surgery, stage IV, rectal cancer

Rectal cancer constitutes a significant health problem in the modern world. It is estimated that there are approx. million new cases each year worldwide, and half a million deaths due to it (1). In Poland, in 2008, 14,441 new colorectal cancer cases and 9,915 deaths were reported (2). Despite the undertaken efforts aimed at early disease detection, the introduced screening tests, educational activities and increasing awareness in the society, in approx. 20% of patients colorectal cancer is diagnosed at stage IV of disease advancement. In this group, 80-90% of patients have nonresectable lesions, and the recorded 5-year survival stands at approx. 8% (3).

The aim of the study was the evaluation of the results of surgical treatment of patients with rectal cancer at stage IV of clinical advancement, performed at the Department of Surgical Oncology, Pomeranian Medical University in Szczecin, in the years 2000-2008.

MATERIAL AND METHODS

In the years 2000-2004, at the Clinical Department of Surgical Oncology, and since 2005 at the Department of Surgical Oncology, Pomeranian Medical University in Szczecin, there were treated 440 patients with rectal cancer. The study group of 52 was selected based on the available medical documentation, and the selection criteria included the stage IV of clinical advancement and undergone planned rectal resection.

The analysed parameters include the patient gender, period of hospitalisation, type of performed procedure, complications and early mortality. The data concerning long-term survival were obtained from questionnaires sent by the patients and their families, the registry offices and the cemetery administration records. Long-term survival was analysed with use of Kaplan-Meier method.

RESULTS

The retrospective study enrolled 52 patients with disseminated rectal cancer who had undergone planned resection of this organ. The mean age of patients was 62 (range: 25-84). Males constituted 71% (n = 37) and females – 29% (n = 15) of the study group. Stage IV of
clinical advancement was determined by imaging techniques in 40 patients, and by laparotomy in 12 of them. 3 patients had been subject to pre-operative radiation therapy.

Metastatic lesions in liver only were found in 42 (80.7%) of treated patients, while in 7 (13.4%) metastases affected more than one organ and in 5 peritoneal canceration was seen.

The majority, i.e. 37 of patients had multiple metastases to the liver, while single metastases were found in 12 patients. The characteristics of liver metastases were presented in tab. 1.

Table 1. Characteristics of liver metastases

<table>
<thead>
<tr>
<th>Liver metastases</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single metastasis</td>
<td>49 (94%)</td>
</tr>
<tr>
<td>multiple metastases</td>
<td></td>
</tr>
<tr>
<td>single lobe</td>
<td>12 (23%)</td>
</tr>
<tr>
<td>both lobes</td>
<td>25 (48%)</td>
</tr>
</tbody>
</table>

The patients had undergone planned surgery. Typical resection procedures had been performed, as employed in the treatment of rectal cancer, in combination with adequate mesorectal resection. In two patients, due to familial polyposis, restorative proctocolectomy was performed.

Figure 1 presents the share of individual types of surgical procedures employed in the treatment of the study group.

In 9 (17.3%) of patients, synchronous hepatectomy was performed. The analysis of further patients’ fate revealed that 6 more patients (11.5%) were subject to subsequent metachronic hepatectomy. The characteristics of performed hepatectomies were presented in tab. 2.

The mean hospitalisation period was 15 days (range: 6-37).

Perioperative mortality in the study group was 1.9% – 1 patient who died on day 23 post hospital discharge, yet no information on the cause of death could be obtained. Early post-op-

DISCUSSION

In the era of evidence-based medicine and increasingly more stringent guidelines for
treatment methods of cancer patients, the
surgeon still faces a dilemma of selecting the
approach for patients at stage IV of clinical
advancement of colorectal cancer. The role of
surgery in patients with complications associ-
ated with the tumour (haemorrhage, perfora-
tion, obstruction) is unquestionable, while the
application of surgery in asymptomatic pa-
tients or those exhibiting mild symptoms at
stage IV of colorectal cancer remains a subject
of discussion (4).

The proponents of surgical removal of pri-
mary lesion report that this approach provides
highest certainty of protecting patients from
the development of life-threatening complica-
tions, its is aimed at improving the quality of
life and prolonging the survival (5, 6, 7, 8).
Still, surgery is associated with a risk of com-
pliances, also fatal ones, and a significant
portion of patients at stage IV of colorectal
cancer advancement will die due to disease
progression before the complications charac-
teristic for the primary lesion can develop (9,
10). In addition, surgical intervention, by de-
laying the chemotherapy initiation, may re-
duce its efficacy (11, 12). On the other hand,
in selected patients, surgical reduction of tu-
mour mass may be associated with an im-
poved response to chemotherapy, as observed
in patients with distant metastases of ovarian
or renal cancer (13, 14, 15). One of the objec-
tives of palliative resections in disseminated
colorectal cancer is the minimisation of the
risk of life-threatening complications associ-
ated with the progression of primary lesion,
The available non-surgical methods, increas-
ingly more often used, nevertheless have their
own limitations. Radiation or laser therapy
require repeated treatment cycles and the
response remains uncertain. The implantation
of self-expandable stents is an effective meth-

Table 3. Early post-operative complications

<table>
<thead>
<tr>
<th>Complication type</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery site infection</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Eventration</td>
<td>3</td>
<td>5.7</td>
</tr>
<tr>
<td>Post-operative obstruction</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Perioperative haemorrhage</td>
<td>3</td>
<td>5.7</td>
</tr>
<tr>
<td>Ureteral damage</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Cardiorespiratory failure</td>
<td>1</td>
<td>1.9</td>
</tr>
</tbody>
</table>

of treating gastrointestinal obstruction also
enabling to avoid stomas (16, 17). However,
the stent implantation does not protect from
the occurrence of such symptoms as haemor-
rhage, pain or empty urgency, often found in
patients with advanced colorectal cancer. Sur-
gical excision of the primary lesion seems to
be the most effective method enabling local
disease control and, by definition, the elimina-
tion of the development of complications asso-
ciated with the growing tumour (18).

In patients treated only with chemotherapy,
the development of intestinal complications is
often associated with the need for emergency
surgery and thus with a higher frequency of
non-resection procedures such as bypass or
stoma opening. The results of this type of treat-
ment are poorer, and higher mortality and
perioperative prevalence rate as compared
with the planned resection procedures (19, 20).
The group at particular risk of gastrointestinal
obstruction are the patients with diagnosed
omental or peritoneal metastases (21).

The presented results of treatment of pa-
tients with disseminated rectal cancer do not
deviate from those available in literature. The
median survival was 16.3 months. Low (1.9%)
perioperative mortality was seen and complica-
tions were observed in 29% of patients, with
no defunctioning stoma. However, it should be
stated that the low early mortality and accept-
able prevalence of perioperative complications
stem not only from the properly performed
procedure but also from a highly selective
choice of patients.

The decision of performing the synchronous
hepatectomy in 17.3% of patients was influ-
enced by the determined pre- and periopera-
tively possibility of performing a rapid and safe
Elective resection of rectal cancer primary tumor in patients with stage IV disease – own experiences

R0 resection (advantageous location – convenient access to the vertical incision and small scope of resected parenchyma).

In the study published by Law and colleagues enrolling a group of 70 patients with disseminated rectal cancer treated by resection, early mortality stood at 4.3% while the median survival excluding the perioperative fatalities was 15.2 months. Perioperative complications were found in 42% of patients, while dysfunctional stoma in 7.5% (18).

In the study by Nash and colleagues, presenting the results of surgical treatment of 80 patients with rectal cancer at stage IV of advancement the perioperative mortality was 1.3% and the median survival stood at 25 months. Surgical complications were found in 15% of patients (22).

Evans and colleagues analysed the results patients with generalised colorectal cancer.

In the group of patients treated by resection, the median survival was 11 months. Early survival among the patients who had undergone planned surgery was 14%, while for emergency surgery it stood at 18%. In addition, the authors found that patients treated as emergency cases needed the stoma more often than those undergoing planned treatment: 53% and 32%, respectively (23).

Benoist and colleagues judged that the median survival of patients with colorectal cancer at stage IV of clinical advancement was 23 months, as compared with the median of 22 months in the group of patients undergoing chemotherapy. 6 patients among the 32 treated by surgery developed complications associated with the undergone procedure. The authors conclude that non-surgical approach and early chemotherapy is the treatment of choice in patients with colorectal cancer and non-resectable liver metastases (11).

On the other hand, Kaufman and colleagues, in a retrospective study evaluating the effects of palliative resection on the survival of patients with advanced colorectal cancer, found a longer median survival of patients treated by surgery and chemotherapy as compared with those receiving chemotherapy only: 30 and 15 months, respectively. In the summary, the authors suggest a beneficial impact of resection on the survival of patients with advanced colorectal cancer, yet due to the methodological imperfections the formulation of binding conclusions is not justified (15).

Patients with colorectal cancer at stage IV of disease advancement constitute a heterogeneous group in terms of the general condition, nutritional status, the number and localisation of metastases, peritoneal involvement, local advancement of the tumour and coexisting diseases. The decision on the performance of resection in asymptomatic patients is difficult in such cases and based on the analysis of all available data, optimally by a multi-specialist team of physicians, and is associated with the need for individualisation of indications.

In future, it seems necessary to conduct randomised prospective studies evaluating the role of surgical treatment in a group of asymptomatic patients with disseminated colorectal cancer, which would unambiguously determine the legitimacy of such an approach.

CONCLUSIONS

1. In a well selected group of patients with disseminated rectal cancer, elective resection may be a procedure of low mortality and acceptable number of complications.

2. This procedure enables the avoidance of potential complications stemming from the local tumour growth.

REFERENCES


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