Local recurrence and five year survival after abdominoperineal resection of the rectum due to rectal carcinoma

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In the period 01.01.1991 - 12.31.1996, 523 operations due to rectal carcinoma were performed on the First Surgical Clinic, the Third Department for Colorectal Surgery. Most common localization of tumor was in the distal third of the rectum 65.2%. In the middle third, there were 28.9% and in the upper, intraperitoneal third 5.9%. We performed 286 low anterior stapled resections, 93 anterior resections with hand-sewn anastomosis and 144 abdominoperineal excisions of rectum (Miles procedure). Pathohistological examination revealed adenocarcinoma in all cases. In this study we analyzed local recurrence and five-year survival after long-term follow-up in the group where Miles procedure was carried out as a potentially curative procedure (except 4.9% cased with Dukes D stage). There were 74.3% males and 23.7% females median age 52.2 years. According to Dukes classification there were 4.9% in stage A, 47.2% in stage B, 43.1% stage C, and 4.9% stage D. There were 4 (2.7%) postoperative deaths. Recurrence of the disease was registered in 44 (30.5%) patients. Local recurrence alone was found in 14 (9.7%) patients, while distant spread was registered in 30 (20.8%) patients. At present, the median follow-up is at 72.9 months. Analysis by the Kaplan-Meier’s test shows cumulative survival of 61%, and disease-free survival of 63.4% at 60 months of the follow-up. Dukes C is associated with a very poor prognosis; survival after 60 months of follow-up shows cumulative Survival of 0.35 while Dukes B has far better prognosis (0.86). Analysis of disease-free survival by Dukes stage shows that Dukes C has the worst prognosis (disease-free survival 0.36 after 60 months), while stage B has much better prognosis (0.84). Local recurrence analysis by the Kaplan-Meier’s test shows disease-free survival of 84.9% at 60 months of follow-up. Analysis of local recurrence by Dukes stage shows 1.00% disease-free survival for cases in stage A, 0.94 for Dukes B and 0.66 for Dukes C, while overall comparison between groups regarding local recurrence using the Wilcoxon (Gehan) statistic shows statistically significant difference (p<0.005). There is no statistical difference between Dukes A and Dukes B cases in distribution of local recurrence.

Key words: local recurrence, survival, rectal carcinoma

INTRODUCTION

In this study, we analyzed local recurrence and five-year survival after long-term follow-up in the group where Miles procedure was carried out as a potentially curative procedure (except 4.9% cased with Dukes D stage). The goal of this study was to analyze the late results of abdominoperineal excision due to rectal carcinoma after a longer period of follow up (ten years).

PATIENTS AND METHODS

During a six-year period, 144 patients with low rectal carcinoma were operated on in our department with abdominoperineal excision of rectum (Miles procedure). There were 74.3% males and 23.7% females, median age 59.2 years (27-83 years). Pathohistological examination of biopsy specimens revealed adenocarcinomas in all cases. Preoperative radio or chemotherapy was not used in this study. The same surgical team performed all of the operations and after operation all patients were regularly followed-up up to ten years. Curative resection was attempted in all cases except in those where liver metastases were confirmed intra or preoperatively (7 patients). The operation was defined as curative in all subjects where all macroscopic tumor tissue was removed at operation. High ligation of the mesenteric vessels was performed in all cases. The splenic flexure was not mobilized in those cases were the colon was sufficient long to allow creation of a stoma without tension. Visceral lymphadenectomy with preservation of hypogastric nerves was a standard part of the procedure. The pelvic plexus and sacral nerves were preserved in all but a few cases where it was
impossible because of tumor spread. Three weeks after discharge from hospital all patients had their first outpatient visit and were included in follow-up according to the pathological stage. All Dukes A and B were examined every three months during the first postoperative year, every six months in the second year and annually thereafter. Patients in Dukes C and D stage were followed every three months in the first two postoperative years, then every six months for three years and after that once a year if there were no signs of recurrence. On every visit, blood tests, CEA and Ca 19-9 antigen levels were measured; abdominal ultrasound was performed every three months. Colonoscopy and chest radiography were performed once a year. Pursuant to these findings, especially if signs of recurrence were suspected, CT and other investigations were conducted. All data were recorded and statistically analyzed in the Statistical Institute, University of Belgrade. Statistical analyses were performed using SPSS version 10.0 (SPSS, Chicago, IL) for Microsoft Windows. Survival and cancer outcome were calculated using the Kaplan-Meier survival estimations, and differences between groups were analysed with the Wilcoxon (Gehan) statistic Survival Variable. Statistical significance was accepted at P 0.005.

RESULTS

Postoperative mortality

There were 4 (2.7%) postoperative deaths, one because of massive myocardial infarction, two due to pulmonary embolism and one because of septic complications as a consequence of partial ischemic necrosis and perforation of colon.

Recurrence

All follow-up data were recorded at regular outpatient visits. Information about those patients who were unable to come because of paramedical reasons (9 patients 6.25%) was collected by phone interview with them or their relatives. Duration of follow up was 13-177 months (mean 72.9). Recurrence of the disease was registered in 44 (30.5%) patients. Local recurrence alone was found in 14 (9.7%) patients, while distant spread was registered in 30 (20.8%) patients. Disease-free survival is shown by the cumulative survival curve (local and distant recurrence). As it is shown in Fig. 1 all recurrences occurred during the first 5 years, most of them in the first three postoperative years. Risk of recurrence decreases in time.

Local recurrence alone was found in 14 (9.7%) patients and all recurrences were registered during five years. Analysing local recurrence by Dukes stage, Dukes C cases has worse prognosis with statistically significant difference (P< 0.05). The same observation for local and distant recurrence calculated together was found (P< 0.05).

Analysis by the Kaplan-Meier's test demonstrates cumulative survival of 61%. Most of deaths were recorded in first three postoperative years. The worst prognosis was associated with Dukes C stage with statistically significant difference (P< 0.003).

FIGURE 1
DISEASE FREE SURVIVAL (LOCAL=DISTANT RECURRENCE)

FIGURE 2
DISEASE FREE SURVIVAL (LOCAL RECURRENCE)

FIGURE 3
LIVE TABLE - EFFECT OF TUMOUR STAGING ON DISEASE FREEE SURVIVAL (LOCAL RECURRENCE)

As it is shown in Fig.5, survival in stage A is 100%. In stage B, cumulative survival after 120 months is 0.86, while in stage C, cumulative survival at 120 months is
DISCUSSION

It has long been accepted that APR was the gold standard for rectal adenocarcinoma, particularly of the lower one-third of the rectum. Some claimed that APR is the gold standard to which all other operations must be compared.\(^1\) It is also well known that in the past APR was performed in cases of middle third rectal adenocarcinomas because the risk of anastomotic leakage was unacceptably high. Better surgical technique, mechanical suction devices, colonic pouch-anal anastomoses and protective ileostomy have decreased the rate of anastomotic leak to an acceptable level with good functional outcome. Regarding oncological principles of radicality, some claimed that the widest APR might be oncologically inferior to a neatly sealed TME specimen carefully dissected from above in sphincter saving procedures.\(^2\) Recognizing those facts, sphincter saving procedures are increasingly performed, even for low rectal adenocarcinomas since the quality of life is much better than the one obtained with APR. In some cases, adequate preoperative radiotherapy or chemotherapy could spare sphincter function and allow sphincter-saving procedure to be safely performed. Despite mentioned facts, APR still has its place in surgery of rectal carcinoma. There are cases when APR is indicated since only this operation fulfills all oncological criteria. Usually, APR is performed in cases of adenocarcinomas of the anal canal, very low carcinomas of the rectum with involvement of adjacent tissues, advanced and anaplastic carcinomas. In our study, criteria for APR were very high. We used conventional diagnostic tools to evaluate patients and indicate the type of operation. Sometimes, digital exam could give enough information to indicate APR (low fixed tumors, tumors of anterior rectal wall, ulcerative form of tumor) but in selected cases, CT and NMR were performed. In our study, analyzing period 1990-1996, APR was performed in 27.5% of all patients with rectal adenocarcinoma. Such, relatively high percentage of APR was a consequence of high proportion of locally advanced adenocarcinomas at the time of admission to our department. We believe that high proportion of advanced tumors in this series was the consequence of inability of patients to get adequate medical help because of tragic situation in our country that particular period of time (war, sanctions etc.). Recurrence of the disease is still the most serious and usually fatal complication in oncological colorectal surgery. Despite various operative strategies and techniques of lymphadenectomy, recurrence of the disease, be it local or distant is still the problem that every surgeon must face in practice. Improvements in surgical technique can only influence cure rates by reducing the local recurrence\(^1\). It has been questioned how much surgery can improve results since no touch technique\(^2\) and high ligation of the inferior mesenteric artery\(^4,5\) showed no significant benefit and differences in survival, except for sigmoid lesions\(^6\). The problem where the surgeon has immediate influence is the local recurrence. A local recurrence after a potentially curative resection should be considered as an inadequate operation whether it is due to poor operative technique or insuffi-
cient radicality (distal and lateral clearance). We found local recurrence in 9.7% of patients, while distant spread was noted in 20.8%. We believe that these, not spectacular results were the consequence of high proportion of advanced tumors included in this study. High proportion of recurrences (comparing to some other studies) could be the consequence of our inability (technical reasons) to give our patients preoperative radiotherapy for T3 and T4 stage adenocarcinomas. Comparing results of APR in this series and our series of sphincter saving procedures (286 patients operated in the same period) we found higher recurrence rate and lower survival in the group of patients treated with APR. Therefore, we agree with Mr. Heald concept that sphincter saving procedures should be performed whenever it is technically feasible. APR is not superior to sphincter saving procedures regarding local recurrence and survival. Higher local recurrence in cases where APR was performed is probably the consequence of more advanced tumors in this series.

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