ORIGINAL ARTICLE

Should we still doubt the success of emergency oncologic colorectal surgery?: A retrospective study

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ABSTRACT

BACKGROUND: In recent years, the importance of oncologic principles in colorectal cancer (CRC) surgery has been emphasized in many studies. Although emergency surgery is related to high morbidity and mortality rates, their adequacy and prognosis in maintaining oncologic principles are still controversial. This study aims to compare the clinicopathological features of CRC patients who underwent emergency and elective surgical resection and also to evaluate their compatibility with oncologic principles and to evaluate their short/long term results.

METHODS: Of the patients who underwent surgery for CRC, 564 were included in this study. The patients were divided into two groups according to their surgical conditions as an emergency (Group 1) and elective (Group 2). Demographics, clinicopathological features, prognostic factors and survival rates of the patients were evaluated retrospectively.

RESULTS: There were 104 (18.4%) patients in group 1 and 460 (81.6%) patients in group 2. 61.2% of the patients were male and the mean age was 64.27. There were statistically significant differences between the groups in age distribution, tumor localization, surgical procedures, T- N classification, AJCC stage, presence of mucinous subtype, lymphovascular and perineural invasion. The mean tumor diameter was 5.23±3.48 cm. There was no difference between the groups concerning the adequacy of lymph node harvest, except in patients who underwent low anterior resection. The mean survival time was 475.212 days, and the median survival time was 376 days. The disease-free and overall survival rates were higher in group 2.

CONCLUSION: Despite the appropriate oncologic resection, CRC patients operated under emergency conditions had worse short-term and long-term results than the CRC patients operated under elective conditions. Thus, we believe that the prevalence of colorectal cancer screening programs should be increased to reduce the rate of emergency surgery.

Keywords: Colorectal cancer; emergency; lymph node; morbidity; mortality; prognosis.

INTRODUCTION

Colorectal cancer (CRC) is the third common cancer and the most common malignancy of the gastrointestinal tract.[1] Many countries have been conducting screening programs for the early diagnosis of CRC.[2] These programs also reduce the rate of emergency operation for CRC by detecting the disease without reaching an advanced stage.

Many of the patients who undergo emergency surgery present with obstruction, perforation, bleeding and/or peritonitis, which increase the risk of short-term mortality.[3] These acute complications are considered as life-threatening conditions and require swift interventions.

The goal of CRC treatment consists of the removal of the primary tumor, together with its lymphovascular structures with clean surgical margins.[4] The total number of removed lymph nodes indicates the oncologic adequacy of the procedure and this number is set at a minimum of 12.[5,6] There are many factors affecting this number, which are related to the patient, physicians (both surgeon and pathologist) and the center.

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The numbers of dissected lymph nodes have increased over the years since the definition of "complete mesocolic/total mesorectal excision" was introduced.[7] Nevertheless, emergency surgical conditions were considered as insufficient to provide these principles.[8] In addition, in the emergency cases, features, such as advanced age, advanced stage, mucinous subtype, lymphovascular and perineural invasion, are encountered at a higher rate.[9,10] Tumor localization also affects the number of lymph node yield and the conditions of emergency surgery. Mortality and morbidity rates are higher in patients who underwent emergency CRC surgery, and the duration of hospitalization is longer in this group.[11]

The answers to the questions of whether this substantial amount of patients have different clinicopathological features and whether these patients lack oncologic principles in their treatment when compared to elective cases were sought in various studies.

This study aims to compare the clinicopathological features of CRC patients who underwent elective and emergency surgery, to evaluate their adequacy for oncologic principles, the factors affecting this adequacy and short/long-term outcomes. Our prior hypothesis was that emergency surgery could be adequate as elective surgery, although they have higher rates of mortality and morbidity.

MATERIALS AND METHODS

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethics committee approval was obtained from our University Medical School Ethics Committee (Number: 31829978-050.01.04-E.1700049773 Date: 25/07/2017).

Patients

Five hundred sixty-four patients with American Joint Committee on Cancer (AJCC) stage I-III adenocarcinoma of the colon who had undergone colorectal resection in our department of General Surgery between January 2011-March 2017 were reviewed retrospectively. The patients were divided into two groups according to their surgical conditions: Emergency (Group 1) and elective (Group 2).

The inclusion criteria were (1) pathologically confirmed diagnosis of CRC and (2) history of curative surgical colorectal resection. We excluded the patients who had (1) undergone preoperative chemotherapy or radiotherapy, (2) underwent only palliative procedures without resection, such as intestinal decompression or by-pass, (3) had carcinoma in situ (CIS) tumors and/or (4) stage IV disease.

Age, sex, place of birth, tumor localization, T classification, N classification, AJCC stage, adequate lymph node yield (≥12 lymph nodes examined), presence of mucinous subtype-lymphovascular- perineural invasion, type of the surgical procedure, ostomy status, condition of the surgery, surgical complications, duration of hospitalization and survival status from 15th of May 2017 were assessed.

The primary explanatory variable was tumor location: Right colon cancer (RCC), left colon cancer (LCC), and rectal cancer (RECC). RCCs included tumors in the caecum, ascending colon, hepatic flexure and transverse colon. LCCs included tumors in the splenic flexure, descending colon and sigmoid colon.

Investigations

Assessment of the specimens and lymph node count was performed and reported by the Department of Pathology. Metastatic disease was determined with postoperative CT, MRI and/or PET-CT reports in the patients who did not have any evidence of metastasis on preoperative images and surgical exploration. Tumor diameter, total number of dissected lymph nodes, number of metastatic lymph nodes, T stage, N stage, presence of mucinous subtype, lymphovascular and perineural invasion status were obtained from pathology reports and recorded. Information about concomitant complications related to the surgery was obtained from the operative reports, epicrisis reports, postoperative imaging and/ or consultation request reports.

Surgical Procedures

Right hemicolectomy, left hemicolectomy, anterior resection, low anterior resection, abdominoperineal resection or total colectomy procedures were performed open or laparoscopically according to localization of the tumor. Loop ileostomy, end ileostomy, end colostomy and/or mucosal fistula procedures were also added if it was necessary.

Follow-up

Follow-up data were collected from our hospital's database. Overall survival (OS) was defined as the time from the initial surgical resection until death for any reason. Disease-free survival (DFS) was defined as the time from the initial surgical resection to recurrence or metastasis of CRC. The median duration of follow-up for all cases was 31.3 months (range: 0.1–85.7 months).

Statistical Analysis

For discrete and continuous variables, descriptive statistics (mean, Standard deviation, n and percentile) were given. In addition, the homogeneity of the variances, which is one of the prerequisites of parametric tests, was checked through Levene's test. The assumption of normality was tested using the Shapiro-Wilk test.

To compare the differences between three and more groups, one-way analysis of variance was used when the paramet-

ric test prerequisites were fulfilled, and the Kruskal Wallis test was used when such prerequisites were not fulfilled. The Bonferroni correction method, which is a multiple comparison test, was used to evaluate the significant results concerning three and more groups.

Chi-square test was used for determining the relationships between two discrete variables. When the expected sources were less than 20%, values were determined through the Monte Carlo Simulation Method to include such sources in the analysis. Survival analysis for using the Kaplan-Meier method, the comparison of the variables of the survival times of the factors between the categories was evaluated by the Log Rank Mantel-Cox test.

The data were evaluated using SPPS 20 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.). $p<0.05$ were taken as significance levels.

RESULTS

There were 104 (18.4%) patients in group 1 and 460 (81.6%) patients in group 2. Of all patients, 61.2% of the patients were male, and the mean age was 64.27 years. The mean age was 65.8 years in group 1 and 63.9 years in group 2. The distribution of the number of patients according to the years is given in Figure 1.

Demographics and clinicopathological features of the patients with CRC are given in Table 1.

When two groups were compared, there was a significant difference in age distribution, tumor localization, surgical procedures, AJCC stage, presence of mucinous subtype, lymphovascular and perineural invasion ($p<0.05$). There was no statistically significant difference between the groups concerning gender distribution and place of birth. The number

Table 1. Demographic and clinicopathological features of patients with colorectal cancer

	Group 1 (n=104) (18.4%)	Group 2 (n=460) (81.6%)	p		Group 1 (n=104) (18.4%)	Group 2 (n=460) (81.6%)	p
Age, n (%)				N classification, n (%)			
<50	11 (10.6)	51 (11.1)	0.039*	N0	47 (45.2)	285 (62)	0.010*
50–59	20 (19.2)	103 (22.4)		N1a	9 (8.7)	29 (6.3)	
60–69	31 (29.8)	148 (32.2)		N1b	8 (7.7)	18 (3.9)	
70–79	23 (22.1)	121 (26.3)		N1c	16 (15.4)	68 (14.8)	
≥80	19 (18.3)	37 (8)		N2a	13 (12.5)	24 (5.2)	
Gender, n (%)				N2b	11 (10.6)	36 (7.8)	
Female	33 (31.7)	186 (40.4)	0.119	AJCC stage, n (%)			
Male	71 (68.3)	274 (59.6)		I	3 (2.9)	72 (15.6)	0.001**
ASA grade	2±1	2±0.9	0.2	2A	30 (28.8)	168 (36.5)	
Tumor location, n (%)				2B	10 (9.6)	22 (4.8)	
RCC	26 (25)	155 (33.7)	0.001**	2C	0	3 (0.7)	
LCC	61 (58.7)	137 (29.8)		3A	0	12 (2.6)	
RECC	15 (14.4)	162 (35.2)		3B	33 (31.7)	127 (27.6)	
Synchronous tumors	2 (1.9)	6 (1.3)		3C	28 (26.9)	56 (12.2)	
Surgical procedures, n (%)				Mucinous subtype, n (%)			
Right hemicolectomy	25 (24)	147 (31.9)	0.001**	Yes	26 (25)	79 (17.2)	0.049*
Left hemicolectomy	33 (31.7)	67 (14.6)		No	92 (75)	367 (82.8)	
Anterior resection	29 (27.9)	77 (16.7)		Lymphatic-vascular invasion, n (%)			
Low anterior resection	10 (9.6)	121 (26.3)		Positive	43 (41.3)	128 (27.8)	0.009**
Abdominoperineal resection	1 (1)	34 (7.4)		Negative	61 (58.7)	332 (72.2)	
Total colectomy	6 (5.7)	14 (3.1)		Perineural invasion, n (%)			
T classification, n (%)				Positive	27 (26)	61 (13.3)	0.002**
T1	1 (1)	41 (8.9)	0.001**	Negative	77 (74)	399 (86.7)	
T2	3 (2.9)	45 (9.8)					
T3	57 (54.8)	296 (64.3)					
T4	43 (41.3)	78 (17)					

RCC: Right colon cancer; LCC: left colon cancer; RECC: Rectal cancer; AJCC: American Joint Committee on Cancer; ASA: American Society of Anesthesiologists.

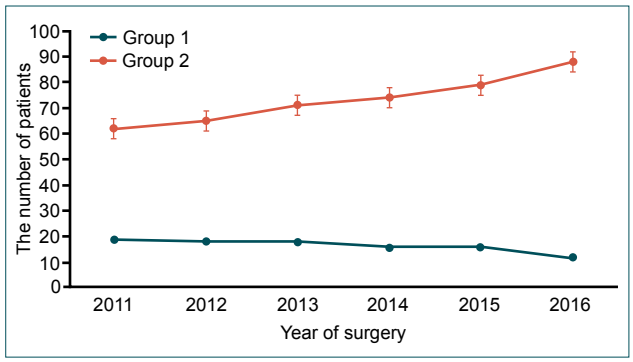

Figure 1. he bleeding amount during the operation was significantly less in the open drainage group (105±45 mL vs 315±112 mL, p<0.001).

of patients above 80 years of age was found to be higher in group 1. This difference was also statistically significant.

The findings showed that 31.4% of the patients had rectal cancer. Rectum localization was significantly more common in group 2 (p<0.05). In parallel to the tumor localization, there was a significant difference between the groups concerning surgical procedure distribution (p<0.05).

Mean tumor diameter was 5.23±3.48 cm, which was 5.47±4.94 cm in group 1 and 4.16±2.64 cm in group 2. Besides, lymph node size is related to the presence of lymph node metastasis. The mean size of positive nodes was 5.6±1.7 mm in group 1, compared with 3.8±0.9 mm group 2. The reason for the statistically significant difference in the T classification, N classification, and AJCC stage between the groups was that the advanced tumors were more frequent among emergency cases.

Presence of mucinous subtype, lymphovascular and perineural invasions was detected in 18.6%, 30.3% and 15.6% of the patients, respectively. These components were found to be statistically significant when the groups were compared (p<0.05). Lymphovascular, neural invasion and mucinous subtype were more common in emergency cases.

The mean numbers of resected lymph nodes and adequate lymph node yield are shown in Table 2.

There was a statistically significant difference between the mean number of the lymph nodes and adequate lymph node yield only in the group of patients who underwent low anterior resection, while no statistically significant difference was found in other surgical procedures. The reason for this higher ratio of group 2 can be explained with the higher number of patients in group 2 and difficulties of rectal surgery.

Comparison of demographics and surgical procedures of the patients with adequate lymph node yield are given in Table 3. In 76% of the emergency cases, adequate lymph node yield was performed according to oncological principles, while this ratio was 72.6% in the elective group.

According to the tumor localization, there is a significant difference concerning adequate lymph node yield in LCCs of group 1 and RECCs of group 2. It has been observed that there is no effect of age or gender on adequate lymph node yield.

The mean duration of hospitalization of all patients was 11.03 days, which was 13.1 in group 1 and 10.5 days in group 2.

The presence of ostomy, postoperative complications and advanced-stage disease were found to be the main reasons for this longer duration of hospital stay in the emergency group. Major causes of postoperative complications were anastomotic leak/GIS complication, abdominal abscess, surgical site infection, pneumonia, sepsis, pulmonary failure, venous thromboembolism, gastrointestinal bleeding and hemorrhage.

Table 2. Mean and sufficiency of lymph node yield

Surgical procedures	Group 1 (mean lymph node)	Group 2 (mean lymph node)	p
Right hemicolectomy	18.58	19.74	0.666
Left hemicolectomy	15.12	15.61	0.815
Anterior resection	15	15.17	0.899
Low anterior resection	14.96	22.10	0.008**
Abdominoperineal resection	16.15	18.63	0.346
Total colectomy	24.75	17.36	0.052
	Group 1 (n=104)	**Group 2 (n=460)**	**p**
Sufficiency of lymph node, n (%)			
Sufficient (≥12 lymph node yield)	79 (76)	334 (73)	0.576
Deficient (<12 lymph node yield)	25 (24)	126 (27)	0.259

Table 3. Compare patients with the sufficiency of lymph node

	Patients with the sufficiency of lymph node		
	Group 1 (n=79) (76%)	**Group 2 (n=334) (72.6%)**	**p**
Age, n (%)			
<50	8 (10.1)	45 (13.5)	0.12
50–59	17 (21.5)	74 (22.2)	0.26
60–69	26 (32.9)	102 (30.5)	0.88
70–79	15 (19)	87 (26)	0.16
≥80	13 (16.5)	26 (7.8)	0.35
Gender, n (%)			
Female	26 (32.9)	134 (40.1)	0.21
Male	53 (67.1)	200 (59.9)	0.69
Tumor location, n (%)			
RCC	25 (31.6)	118 (35.4)	0.88
LCC	45 (57)	92 (27.5)	0.015*
RECC	7 (8.9)	98 (29.3)	0.022*
Synchronous tumors	2 (2.5)	6 (1.8)	0.55
AJCC stage, n (%)			
I	2 (2.5)	43 (12.9)	–
2A	25 (31.6)	130 (39)	0.75
2B	7 (8.8)	14 (4.2)	0.64
2C	0	2 (0.6)	–
3A	0	9 (2.7)	–
3B	22 (27.9)	88 (26.6)	0.29
3C	23 (29.2)	47 (14.1)	0.042*

RCC: Right colon cancer; LCC: left colon cancer; RECC: Rectal cancer; AJCC: American Joint Committee on Cancer.

The median duration of follow-up for all participants was 31.3 months (range: 0.1–85.7 months). The recurrence and/or metastasis rate of 11% (n=62) was observed during the patient follow-up and the majority (n=38) of these recurrent cases were in group 1.

The mean survival time was 475.212 days, and the median survival time was 376 days. Kaplan-Meier survival analyses of all patients are shown in Figure 2.

Kaplan-Meier survival curves revealed that there was a significant difference between groups (Fig. 3). Poor general condition and electrolyte imbalance of emergency patients are considered to be the reasons for this difference.

DISCUSSION

Rectal cancer has the highest-increasing incidence among the digestive tract cancers according to the data of the American Cancer Society (ACS).[12] At present, despite the available colorectal cancer screening programs, many patients must undergo emergency surgery due to colorectal tumors. Smothers et al.[13] mentioned emergency colorectal resection for cancer as the clearest evidence of the failure of screening. We found this bold expression very appropriate since the literature also supports this with the results from the various studies.

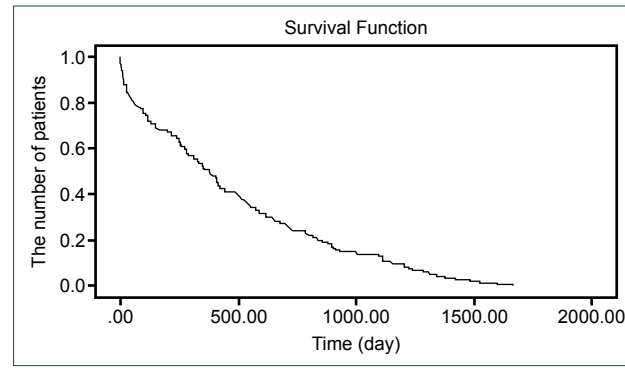

Figure 2. Kaplan-Meier survival analyses of all patients.

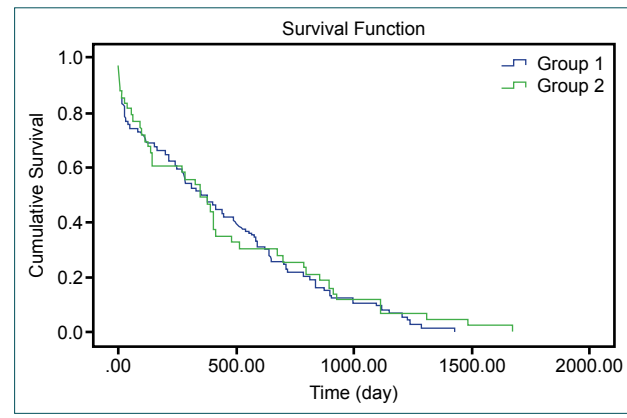

Figure 3. Kaplan-Meier survival curves of group 1 and group 2.

The rate of emergency CRC surgery is between 6–19% in the countries, such as Germany and Italy, which conduct national screening programs, while it is 22–34% in the countries, such as Spain and Ireland, which do not.[14–16] Our rate of emergency surgery in Turkey for CRC was 18.4%, which was also compatible with the literature since screening programs have been carried out in Turkey for ten years. However, the desired levels have not been reached yet because of the lack of endoscopists and special centers for cancer screening. Thus, colorectal tumors are frequently encountered in the emergency department with bowel obstruction, perforation and bleeding.[10]

In their community-based study, Rabeneck et al.[17] reported that factors, such as elder age, low socioeconomic level and difficulty of access to the family physicians, are associated with emergency presentations of CRC. In a study of 3,200 cases by McArdle et al.,[18] it has been shown that non-elec-

tive patients tend to be at older age and female. Also, Diggs et al.[19] tested whether neighborhood poverty has an effect on emergency surgery in their study, which concluded that zip code and median income were not related to emergency resection.

In our study, there was no significant difference concerning gender distribution among the groups, while patients with advanced age were more common in the emergency group. Additionally, there was no significant difference in socioeconomic status (place of birth) among the groups, which may be associated with that each individual in Turkey has equal rights to access health care and opportunity to benefit from the state-supported health services. However, since the evaluation of socioeconomic and intellectual differences is complicated, further studies and surveys should be conducted to understand their impact on CRCs' onset.

CRCs present differently according to their locations. Since LCCs are more likely to obstruct, emergency surgery is more frequent among them.[20,21] In a multi-center study by Ghazi et al.,[21] only tumor localization was found to be significant when the impacts of sex, age, tumor localization and family history on an emergency or elective surgery were investigated and LCCs were more frequent in the emergency group. Similar to the previous data, the majority of our emergency cases were LCC (especially sigmoid colon), whereas in elective cases, RCC was more common. This resulted in a statistically significant difference in tumor localization among the groups.

Non-elective CRCs have been reported to have a more advanced T and N stage according to the AJCC classification.[22] Also, the ability to comply with the oncologic principles under emergency conditions is still controversial today.[8,23,24] The time that passes while trying to keep the resection margins safe and wide, maintaining appropriate lymph node yield and mobilizing the colon may cause physiological deterioration in critical patients, and severe contamination/inflammation in perforated cases affects the clinician's choice on practicing the oncologic principles.[25] Mc Ardle et al.[18] showed that oncologic outcomes for CRC could be followed in emergency conditions, and it is associated with long-term survival when it is successful. Likewise, Patel et al.[26] did not find any significant difference between the rates of adequate lymph node yield in elective and non-elective cases, which are reported as 83% and 83.9%, respectively. Our rates of sufficient lymph node yield in elective (73%) and non-elective (76%) groups were also consistent with the literature, and no statistical significance was found.

Today, TME is a routine for the treatment of CRC.[27] The quality of the resection in TME is determined with the adequate specimen provided by the surgeon that contains the segment of bowel with disease and its mesentery to the level of the origin of the draining vessels.[8] There are also some other components of a successful TME. These are closely related to the quality of the surgical resection and the pathologic evaluation, tumor features and patient characteristics. Additionally, Panageas et al.[28] revealed that prognostic indicators, such as long-term survival and local failure rates, had been associated with the surgeon and hospital volume.[8] More complete resections for fulfilling oncologic principles may be performed by high-volume surgeons.[29,30] On the other hand, hospital volume also affects the lymph node yield as the results showed that low-volume hospitals were more likely to have fewer than seven lymph nodes evaluated.[31]

In our study, a significant difference was only found in RECCs when the mean number of the removed lymph nodes was compared with LCCs. When the age, sex, and AJCC stage were evaluated, there was no significant difference concerning adequate lymph node yield (the difference in stage 3C is thought to be due to the higher number of patients in the emergency group).

Lymphovascular invasion, neural invasion and mucinous subtype are poor prognostic factors for CRC.[32] Emergent cases may have these poor histologic characteristics, which are considered to be related with poor disease-free survival (DFS) and overall survival (OS). Therefore, previous evidence suggested that a more aggressive treatment strategy is required for patients with these features.[33,34] Additionally, tumors with mucinous subtype have less sticky and less tight structure since they contain mucinous ponds filled with large cytoplasmic mucin vacuoles, which make these tumors more prone to perforation.[35] Our data are consistent with the literature displaying that lymphovascular- neural invasion and mucinous subtype are more common in the emergency group and related to poor prognosis. Also, perforation was the indication for surgery in 15.4% of the emergency group, and the mucinous subtype was detected in 56.2% of these patients.

Emergency resection was independently associated with greater odds of short-term adverse outcomes, including short-term mortality, temporary or permanent colostomy, postoperative complications, intensive care unit requirement, hospitalization time and poorer long-term outcomes.[4,22,36] Preoperative systemic inflammation, which is relatively more severe in emergency cases, may have an impact on the residual tumor cells after the resection leading to an increase in the risk of hospitalization time, recurrence and metastasis.[37] Paulson et al.[10] revealed that almost half of the emergency cases did not undergo a colonoscopy, which is the gold standard for the early detection of anastomotic recurrence and/or synchronous tumors in two years after surgery. Kim et al.[38] found a significant difference in complication rates between elective and emergency colectomies, which were 38.1% and 13.3%, respectively. Additionally, in a study of 118 cases, Ascanelli et al.[24] reported the rates of morbidity and mortality as 27% and 12%, respectively. Manning et al.[39] reported similar outcomes presenting that the emergency

group had a median survival of 59 months while the elective group had 82 months.

In our study, the mean duration of hospitalization of all patients was 11.03 days, who were 13.1 in the emergency group. Duration of hospital stay, short-term mortality, the incidence of temporary or permanent colostomy and postoperative complications were significantly higher in emergency cases. Also, emergency cases have higher recurrence and shorter DFS rates. This is thought to be due to the higher number of patients with elder age and more advanced stage tumors in the emergency group, presence of sepsis at the time of diagnosis and subsequent systemic inflammation. However, there was not a significant difference in the overall survival between groups.

Our study has several limitations. Its retrospective design is the drawback of this study. Furthermore, when using administrative claims data, there is always the possibility of misclassification due to miscoding.

Conclusion

We found that 18.4% of the colorectal cancer patients had to undergo emergent colectomies. Although adequate lymph node yield and proper oncologic resection are performed in these patients due to their poor prognostic factors (lymphovascular- neural invasion and mucinous subtype) and severe clinical manifestations (e.g., obstruction and perforation) they have short-term adverse outcomes and worse long-term survival. Therefore, CRC screening guidelines should be developed and disseminated to reduce the rates of emergency surgery and provide a healthier follow-up for the patients.

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Authorship Contributions: Concept: N.A., T.A.; Design: N.A., T.A., E.K.; Materials: T.A., E.K., F.C., K.A.; Data: N.A., T.A., H.K.; Analysis: N.A.; Literature search: N.A., T.A., M.H.; Writing: N.A., T.A., E.K., F.C., H.K.; Critical revision: T.A., K.A., M.H.

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ORİJİNAL ÇALIŞMA - *ÖZET*

Acil onkolojik kolorektal cerrahinin başarısından hala şüphe etmeli miyiz?: Geriye dönük çalışma

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AMAÇ: Son yıllarda birçok yayında, kolorektal kanser (KRK) cerrahisinde onkolojik prensiplerin önemi vurgulanmaktadır. Acil ameliyalatların yüksek morbidite ve mortalite oranlarına sahip olduğu bilinmekle birlikte, onkolojik prensipleri sağlamadaki yeterliliği ve prognozu hala tartışmalıdır. Bu çalışmanın amacı, acil ve elektif cerrahi rezeksiyon yapılan KRK hastalarının klinikopatolojik özelliklerini karşılaştırmak, onkolojik ilkelere uygunluğunu ve kısa/uzun dönem sonuçlarını değerlendirmektir.

GEREÇ VE YÖNTEM: Kolorektal kanser tanısıyla ameliyat edilen 564 hasta çalışmaya alındı. Hastalar ameliyat koşuluna göre acil (Grup 1) ve elektif (Grup 2) olmak üzere iki gruba ayrıldı. Hastaların demografik, klinikopatolojik özellikleri, prognostik faktörleri ve sağkalımları geriye dönük olarak değerlendirildi.

BULGULAR: Grup 1'de 104 (%18.4), grup 2'de 460 (%81.6) hasta vardı. Hastaların %61.2'si erkek ve yaş ortalaması 64.27 idi. Gruplar arası yaş dağılımı, tümör lokalizasyonu, uygulanan cerrahi prosedür, T- N sınıflaması, AJCC evresi, müsin alt tipi, lenfovasküler ve perinöral invazyonu mevcudiyeti açısından istatistiksel önemli farklılıklar mevcut idi. Ortalama tümör çapı 5.23±3.48 cm idi. Gruplar arası, low anterior rezeksiyon yapılan hastalar haricinde, disseke edilen lenf nodu yeterliliği açısından farklılık yok idi. Ortalama sağkalım süresi 475.212 gün ve ortanca sağkalım süresi 376 gündü. Hastalıksız ve genel sağkalım oranları grup 2'de daha yüksek idi.

TARTIŞMA: Acil şartlarda ameliyat edilen KRK hastaları, uygun onkolojik rezeksiyon uygulanmasına rağmen, elektif şartlara göre daha kötü kısa ve uzun dönem sonuçlara sahipti. Bu nedenle, acil cerrahi oranlarını azaltmak için kolorektal kanser tarama programlarının yaygınlığının artırılması gerektiğini düşünüyoruz.

Anahtar sözcükler: Acil; kolorektal kanser; lenf nodu; morbidite; mortalite; prognoz.

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