

THE STOMA REVERSAL AFTER HARTMANN PROCEDURE IN PATIENTS WITH COLORECTAL CANCER OPERATED IN EMERGENCY

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Abstract

The Hartmann procedure still has an important place in the surgical therapy of complicated colorectal cancers. The morbidity rate can be very high and many patients never undergo the stoma reversal. We conducted a retrospective study on 431 patients with colorectal cancer operated in the second clinic of General Surgery of the Clinical Emergency County Hospital Galati between 2008-2017. 42,53 % of the patients with Hartmann operation had a stoma reversal after a medium period of 5,7 months. The 5-years survival rate in patients with stoma reversal was 4,9 %. The reversal rate in our study is similar to those found in the literature in recent studies, that report percentages of 23,3 %-55,17 %. In our study, the medium period between the emergency Hartmann procedure and the reversal of the stoma was 5,7 months, which is also similar to the data in the literature. We found a 5-years survival rate of 4,9 % in patients with Hartmann reversal, much lower than others' results. Many stomas initially intended to be temporary, may not be reversed. It is important to optimize the timing of stoma closure. A period of approximately 6 months between the initial operation and the reversal seem to be adequate.

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Introduction

Despite the screening possibilities, a lot of patients with colorectal cancer are still admitted in emergency, with complicated tumors, when the outcomes are poor. The Hartmann operation still has its place in the current surgical therapy and it is frequently used in the emergency management of complicated colorectal cancer, especially in

patients with obstructed and/or perforated tumors.

The restoration of colonic continuity after emergency Hartmann procedure in patients with colorectal cancer can be technically challenging [1] and the timing of Hartmann's reversal is also debated. Stoma reversal can be associated with complications: wound infection, anastomotic leak, postoperative ileus, bowel obstruction,

enterocutaneous fistula [2]. The morbidity rate can be very high (up to 50 %) and many patients never undergo the stoma reversal after Hartmann's procedure [3].

Regarding the timing, many authors suggest delaying the reversal by 3 months [4, 5] and others recommend waiting 6 months to allow the pelvic inflammation to resolve and the adhesions to decrease [6, 7]. The risk factors for the stoma's non-closure are: advanced age, anastomotic leak, metastatic disease, adjuvant chemotherapy, significant comorbidities [8, 9, 10].

The reversal technical procedure can be difficult, concerning the adhesiolysis, the identification of the rectal stump and the anastomosis itself [2]. The aim of this study is to evaluate the survival rate of the patients with stoma reversal after Hartmann procedure practiced in emergency conditions.

Material and Method

We made a retrospective observational study on 431 patients with complicated colorectal cancer, admitted and operated in the second clinic of General Surgery of the Clinical Emergency County Hospital Galati between 2008-2017. We studied the medical records, the histopathological reports and the surgery protocols.

Our working hypothesis was: the survival rate of the patients with stoma reversal after Hartmann procedure is much better than the survival rate of those patients who don't undergo the second intervention.

The inclusion criteria were: patients with malignant colorectal tumors; patients operated in emergency. We excluded the patients with benign colorectal pathology and those operated electively.

The statistical part of the study was made using Excel and SPSS programs. The probability of error less than 5% ($p < 0.05$) was considered the significance threshold.

Results

In 60 cases (13,92 %), the tumors were located on the cecoascendant colon and right flexure, in 30 cases (6,98 %) on the transverse colon, 57 (13,22 %) on the descendant colon and left flexure, 133 (30,85 %) on the sigmoid colon and 151 (35,03 %) were rectal tumors (Figure 1).

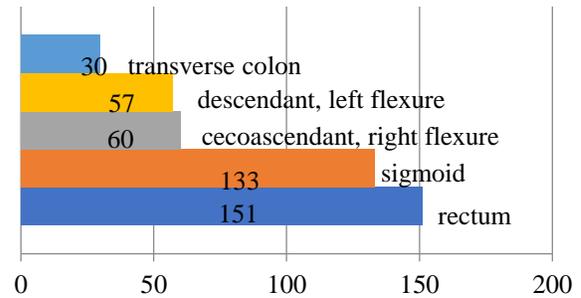


Figure 1 - The distribution of cases according to the the location of the tumors

There have been practiced: 179 (41,5 %) external derivations (158 colostomies and 21 Pezzer cecostomies), 134 (31,1 %) Hartmann operations, 89 (20,9 %) resections with anastomosis and 29 internal derivations (Figure 2).

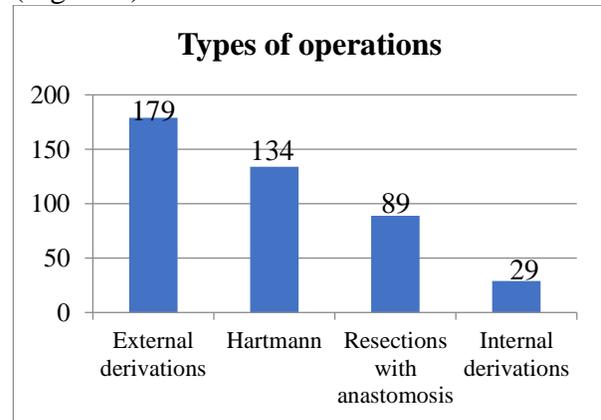


Figure 2 - The repartition of cases according to the type of surgery in emergency

Regarding the patients with Hartmann procedure, 57 (42,53 %) had a stoma reversal in order to reestablish the colon continuity. None of the patients with stoma reversal

developed postoperative complications. The reversal has been made after a medium period of 5,7 months.

49 of these 57 patients died and only 8 survived until 01.10.2019 (the date when this study ended). None of the patients without stoma reversal survived. Comparing the survival rate in the 2 groups, we obtained statistically significant difference (p_value < 0,00001 Log Rank (Mantel-Cox)) (Figure 3).

The mean-estimate time of survival for patients with stoma reversal is 39,156 and for those without stoma reversal is 10,965. The median-estimate time of survival (the time in which the event happens in 50 % of the cases) for patients with stoma reversal is 35,000 and for those without stoma reversal 11,000 (Table 1). The 5-years survival rate in patients with stoma reversal is 4,9 % and 0 % for those who didn't undergo the reversal (Table 2).

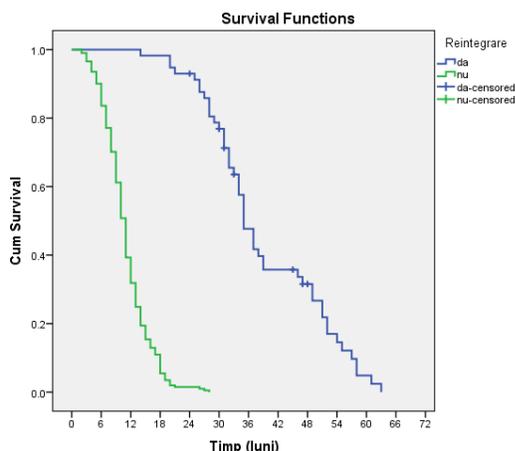


Figure 3 - Survival curves, Kaplan-Meier test according to stoma reversal

Discussions

In July 2016, the Scientific Board of the World Society of Emergency Surgery prepared a possible consensus focusing on the emergency colorectal surgery and presented their work during the congress that has been held in Campinas, Brazil in 2017. They have only agreed that the Hartmann operation should be the treatment of choice in left-sided perforations, but the emergency surgical treatment for obstructed colorectal cancer is still debated [11].

Reversal	Mean				Median			
	Estimate	Std. Error	95% Confidence Interval		Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Yes	39.156	1.686	35.852	42.461	35.000	1.303	32.446	37.554
No	10.965	.325	10.328	11.603	11.000	.315	10.383	11.617
Overall	17.191	.856	15.513	18.868	12.000	.462	11.094	12.906

Table 1 - The mean and median estimated time of survival according to stoma reversal

Survivors	6 months	12 months	18 months	24 months	36 months	60 months
Yes	100%	100%	98.2%	93.0%	47.7%	4.9%
No	83.6%	31.8%	5.5%	1.5%	0.0 (Maximum 28)	-

Table 2 - The 5-years survival rate according to stoma reversal

There are authors who consider that the emergency Hartmann procedure for left-sided colorectal cancer is an obsolete operation, often performed only with palliative intention, in elderly patients, with significant comorbidities, with a high risk of intercurrent

death [12]. Still, most authors agree that the Hartmann procedure is a very good option, not only to palliate symptoms in patients who are not candidates to a curative resection [13], but also for younger patients, when we only plan to resolve first the acute condition in emergency.

The reversal rate in our study is 42,53 %. We found in the literature a lot of studies that assessed the safety of Hartmann's procedure in terms of postoperative morbidity and mortality and long-term survival. In a study from 1981, the reversal rate after Hartmann procedure was only 9,34 % [14]. In more recent studies, the reversal rate is much higher: 23,3 %-55,17 % [15, 16, 17]. A recent Romanian study that included 590 patients operated in Cluj-Napoca between 1996-2005, report a reversal rate of 68 % [18].

In our study, the medium period between the emergency Hartmann procedure and the reversal of the stoma was 5,7 months. In other studies, the Hartmann's reversal in patients with colorectal cancer is usually delayed for 8–10 months, but not more than that. The experience from the Dutch Rectal Cancer Trial has shown that if a stoma was not closed within the first year, it would probably become permanent [10].

We found a 5-years survival rate of 4,9 % in patients with Hartmann reversal, much lower than others' results. According to the recent EURO CARE 5 analysis, colon and rectal cancer presented a minimal but significant increase in 5-year survival [19]. Kristiansen reported a 5-year survival rate of 31% and that intestinal continuity was restored in 7 (24%) of 29 patients who underwent Hartmann operations for obstructive left-sided colorectal cancers [20].

Conclusions

The Hartmann procedure is a fast and safe intervention in emergency surgery for colorectal cancers, that allows the resection of the tumor, avoiding in the same time the anastomotic fistulas. Many stomas initially intended to be temporary, may not be reversed due to different factors, such as: advanced age, postoperative complications, adjuvant therapy and prohibitive comorbidities.

It is important to optimize the timing of stoma closure. A period of approximately 6 months between the initial operation and the reversal seems to be adequate.

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