
**SURGICAL APPROACHES IN ANASTOMOTIC INSUFFICIENCY IN DISTAL
RECTAL CANCER SURGERY**

Boyko Atanasov

Department of General surgery, Faculty of Medicine, [Medical University of Plovdiv and UMHAT](#)
“Eurohospital” Plovdiv- Surgical Unit

Chavdar Atanasov

Department of General surgery, Faculty of Medicine, [Medical University of Plovdiv](#)
UMHAT “Eurohospital” Plovdiv- Surgical Unit

Abstract: One of the most common oncological diseases is colorectal cancer. There are 1588 newly diagnosed cases of rectal cancer for Bulgaria in 2013. Age group 65-69 represents the highest risk for onset of the disease. The main methods of treatment are laparoscopic and conventional surgery. Patients in Stage II and III always receive neoadjuvant therapy. The most serious postoperative complication in this kind of surgery is anastomotic leakage.

Keywords: rectal cancer; anastomotic leakage; laparoscopic surgery.

INTRODUCTION

One of the most common malignant neoplasms associated with high lethality is colorectal carcinoma. Major methods for treating these conditions are the conventional and laparoscopic surgical procedures. Both approaches have their advantages and disadvantages and the choice of surgical intervention should be rigorously assessed for each patient. The treatment of low rectal carcinoma stage II and III is multidisciplinary. It may include a combination of surgery together with radiation therapy or chemotherapy, or both. [8][9][10]. One of the most serious and undesired complications in the surgical treatment of the rectal carcinoma is the anastomotic insufficiency, which is accompanied by severe morbidity and mortality. This frequent post-operative complication is diagnosed when leakage of feculent content and / or gas occurs. This leakage can be found around the anastomosis through the drainage tube in the abdominal cavity, the small pelvis, and the operative wound.

The approaches in the treatment of these complications are based on the severity of the clinical symptoms and the general condition of the patient. This type of conditions is divided into two main groups - clinically significant and clinically insignificant. The first group refers to the cases when clinical symptoms are present and surgical revision is required. The remaining diagnostically proven, but clinically not manifested insufficiencies are clinically insignificant.

Knowledge of the risk factors leading to these complications is key [12]. The anastomotic insufficiency can be treated in a conservative and / or operative manner. [1] In our practice, we use the Colon Leakage Score (CLS) proposed by Dekker et al. [4], which predicts the risks of anastomotic insufficiency.

We believe that surgical experience is an important factor, which has a great influence on the onset of these complications. [7][8]

MATERIALS AND METHODS

For the period 05.2013 to 03.2017 118 patients with low rectal carcinoma threatened with neoadjuvant therapy were operated on in the Surgical Unit of UMHAT Eurohospital – Plovdiv. 75 men and 43 women. Conventional operative interventions were carried out in 61 patients while the laparoscopic procedures are 55. Transanal endoscopic microsurgery was used in 2 of the patients. 77 patients (65.25%) had low and ultra-low anterior resections with total mesorectal excision (TME). All of them had protective ileostomy in the right iliac area. Abdominoperineal excisions with TME were carried out in 33 patients (27.97%). Hartmann’s procedure was carried out in 6 patients (5.15%) (table 1)

Types of operative interventions

Thirteenth International Scientific Conference
THE TEACHER OF THE FUTURE
 25-28.5.2017, Budva, Montenegro

	Conventional	Laparoscopic
Low and Ultra-low anterior resections with TME	43 (36,44 %)	34 (28,81%)
Abdominoperineal resection with TME	16 (13,56 %)	17 (14,40 %)
Hartmann's procedures	2 (1,7%)	4 (3,39%)
Transanal Endoscopic Microsurgery	2 (1,7%)	
	Total: 118 patients	

RESULTS

We found 12 complications in the early postoperative period in the conventional operations group for distal rectal cancer. In the laparoscopic group there were complications in 10 of the patients.(Figure 1) Complications were rated using the 2009 Clavien-Dindo classification. Anastomotic leakage was found in 6 cases – in 4 of the patients with conventional operations (2 men and 2 women) and in 2 of the laparoscopic group (1 man and 1 woman).(Figure 2). 3 of the patient were managed conservatively. In 3 of the patients (2 open ultra-low anterior resection with TME and 1 laparoscopic anterior resection) rebound tenderness necessitated operative treatment. Anastomotic insufficiency of 1/2 or more of the anastomotic circumference and diffuse fibrinous purulent peritonitis was found. In these cases the distal rectum was closed and sigmoidostomy was performed.

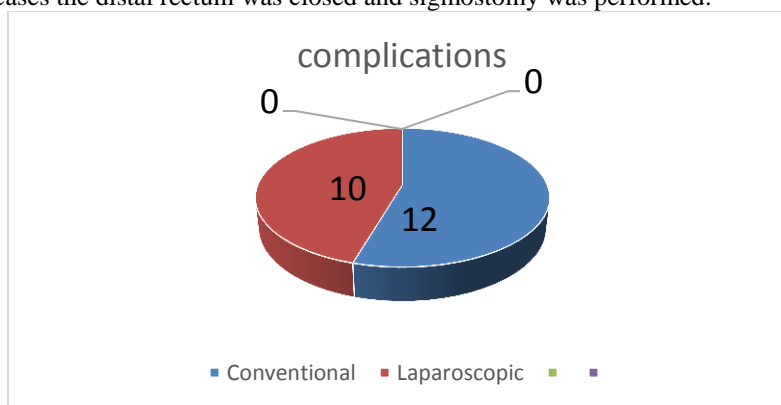


Figure 1 Postoperative complications

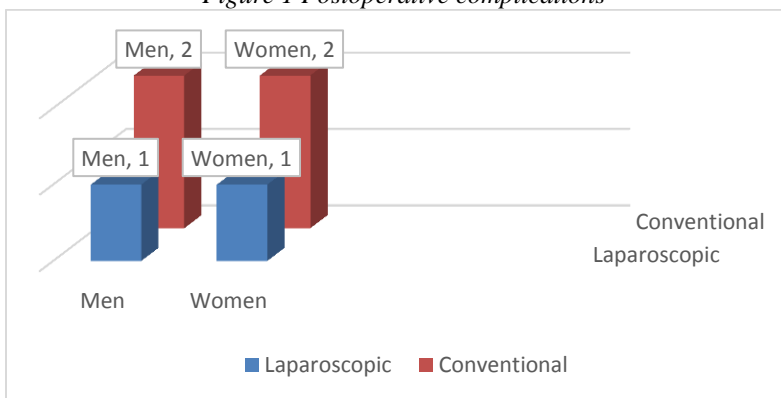


Figure 2 Anastomotic leakage

DISCUSSION

Thirteenth International Scientific Conference
THE TEACHER OF THE FUTURE
25-28.5.2017, Budva, Montenegro

Colorectal carcinoma is still a leading cause of death and the third most common malignant disease. The main method for treatment is conventional or laparoscopic surgery. For the period 05.2012 to 03.2017 we performed 118 operative interventions in patients with distal rectal cancer after neoadjuvant therapy. 77 of the patients (65.255) had low and ultra-low anterior resections with total mesorectal excision (TME). All of them had protective ileostomy in the right iliac area. We have adopted this as a mandatory procedure in low anterior resections with TME as a method for the prevention of anastomotic leakage. [10][12]. We had a total of 22 patients with complications. The complications that were related to the operative interventions were 21. Anastomotic insufficiency was diagnosed in 6 of the patients (7.8%). This result is comparable with the literature data for anastomotic leakage from 1 to 26%. [2][4][6]. The management of these patients was dictated by their general condition, clinic, laboratory results and radiologic examinations. Three of the patients were managed conservatively. The rest three patients had symptoms suggesting peritonitis. They were operated on and Hartmann's procedure was performed.

CONCLUSION

One of the most serious complications in colorectal surgery is anastomotic insufficiency. This is still an important topic, although it has been researched for 30 years. This condition results in severe morbidity during the hospital stay, mortality rate is also high. It is important that all risk factors leading to anastomotic leakage in colorectal surgery are well known. The decision whether to operate on and at what moment is key when anastomotic insufficiency is diagnosed.

REFERENCES

- [1] Belalla Devid, Kaçani Nikollaq, Gjata Arben. Risk of acute anastomotic leakage after preoperative radiotherapy in rectal cancer. *Journal of Acute Disease* Volume 5, Issue 6, 1 November 2016, Pages 462–465
- [2] Boccola MA, Buettner PG, Rozen WM, et al. Risk factors and outcomes for anastomotic leakage in colorectal surgery: a single-institution analysis of 1576 patients. *World J Surg.* 2011;35:186–195
- [3] Brandla A., Czipina S., Mittermaier R, Weissa S., Pratschke J., Kafka R. Transanal drainage tube reduces rate and severity of anastomotic leakage in patients with colorectal anastomosis: A case controlled study
- [4] Dekker JW, Liefers GJ, de Mol van Otterloo JC, Putter H, Tollenaar RA. Predicting the risk of anastomotic leakage in left-sided colorectal surgery using a colon leakage score. *J Surg Res.* 2011;166:e27–e34
- [5] Fouda E, El Nakeeb A, Magdy A, et al. Early detection of anastomotic leakage after elective low anterior resection. *J Gastrointest Surg.* 2011;15:137–144
- [6] Huerta Sergi, Dineen Sean P. Current Strategies in the Management of Adenocarcinoma of the Rectum, [Cancer Treatment - Conventional and Innovative Approaches](http://dx.doi.org/10.5772/55827), 2013 <http://dx.doi.org/10.5772/55827>
- [7] Nachiappan S, Askari A, et al. (2014), Intraoperative assessment of colorectal anastomotic integrity: a systematic review. *Surg Endosc.* 2014 Sep;28(9):2513-30
- [8] Read TE, Myerson RJ, Fleshman JW, et al. Surgeon specialty is associated with outcome in rectal cancer treatment. *Dis Colon Rectum* 2002;45:904–914
- [9] Sauer R, Becker H, Hohenberger W, et al. Preoperative versus postoperative hemoradiotherapy for rectal cancer. *N Engl J Med* 2004; 351:1731–40
- [10] Tanaka Junichiro, Nishikawa Takeshi, Tanaka Toshiaki, Kiyomatsu Tomomichi, Hata Keisuke et al., Analysis of anastomotic leakage after rectal surgery: A case-control study. *Annals of Medicine and Surgery* Volume 4, Issue 2, June 2015, Pages 183–186
- [11] Tepper JE, O'Connell MJ, Petroni GR, et al. Adjuvant postoperative fluorouracil-modulated chemotherapy combined with pelvic radiation therapy for rectal cancer: initial results of intergroup 0114. *J Clin Oncol* 1997; 15:2030–9.
- [12] [van Rooijen S.J.](#), [Huisman D.](#), [Stuijvenberg M.](#), [Stens J.](#), [Roumen R.M.H.](#), [Daams F.](#), Intraoperative modifiable risk factors of colorectal anastomotic leakage: Why surgeons and anesthesiologists should act together, *International Journal of Surgery*, Volume 36, Part A, December 2016, Pages 183–200