

Primary anastomosis in emergency surgery of left colon cancer



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INTRODUCTION: Colorectal cancers are second leading cause of death in Western countries. There are about 1500 deaths per year in Italy due to colorectal cancer in both sex 1.

MATERIALS AND METHODS: 224 patients, 127 women (56.7%) and 97 men (43.3%) underwent colorectal resection with primary anastomosis (RPA) in emergency due to occlusive left colon cancer between 2010 and 2016. Patients had a mean age of 67.2 year a BMI inferior than 30 Kg/m² in 215 cases (96%) and a history of cardiovascular disease in 112 (50%) cases.

RESULTS: All patients with a regular postoperative course have had no more than 10 days of hospitalization except for four who suffered postoperative ileus which solved after no more 15 days. We have had 24 (10.7%) cases of morbidity for generic causes and 12 cases (5.4%) of post-operative complications. Pneumonia, which occurred in 12 cases (5.4%), was the most frequent.

CONCLUSION: The ideal technique does not actually exist. RPA is, when feasible, advisable for occlusive neoplastic cases, ensuring a low percentage of morbidity and mortality and respecting patient's quality of life.

KEYWORDS: Primary Anastomosis, Colon Cancer, Emergency, Management.

Introduction

Colorectal cancers are second leading cause of death in Western countries and in the United States. There are about 1500 deaths per year in Italy due to colorectal cancer in both sex ¹. In a percentage between 16% and 20%, colorectal cancers occur as a surgical emergency ² in the form of bowel obstruction (85-90% of cases), per-

foration or haemorrhage ³. Statistical increase of incidence of colorectal cancer, mainly linked to an increase in the average age and the improvement of medical screening technologies, has led to an increase of surgical interventions for these diseases both in elective and emergency surgery. Emergency cases often force surgeons to face many problems, influencing the choice of technical assistance, especially for lesions affecting left colon. In the last six years (2010-2016), in our Department of Emergency Surgery, AORN "A. Cardarelli" in Naples, on 1036 interventions for colorectal diseases performed in emergency, 640 were performed for neoplastic diseases of which 364 (56.87%) were left colon lesions. There has been a slight female preponderance (51.63%) compared to men (49.37%). Patients were in a range of age between 40 and 92 years and had a peak of incidence between the sixth and seventh decade. Diagnostic pathway included execution of blood tests, EGC, thorax and abdomen xrays, as well as an US exam of the abdomen, useful to diagnose the presence of intraperitoneal liquid

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collections. Further investigations included a CT thorax and abdomen with mdc and cancer markers (CEA, CA 19-9). Only in selected cases, in the absence of perforations and no signs of occlusion we practiced a pan-colonoscopy after adequate preparation. Patients with an absolute contraindication for Colonoscopy, or with incomplete evaluation of the Colon underwent Computer Tomography Colonography (CTC) to assess the presence of cancer in order to improve the surgical strategy ⁴⁻⁶.

Materials and Methods

We performed 224 interventions of resection with primary anastomosis (RPA) in patients affected by left colon cancer; 28 (12,5%) of which were RPA operations associated with protective Ileostomy and 36 subtotal colectomy with ileo-rectal anastomosis (16,1%). In all the procedures was performed a "stapled side to end" anastomosis. Only one case of perioperative mortality was observed in the ileo-rectal anastomosis group due to cardiac accident; Patients had a mean age of 68,1 years, 127 (56,7%) were women while 97 (43,3%) were men. BMI was lower than 30 Kg/m² in 198 cases (88,4%) and major in only 26 (11,6%) cases with a mean BMI of 27,6 Kg/m². Respectively 57,1 % and 30% of patients who have had RPA with ileostomy and RPA only, suffered from Type II Diabetes while only 13,9% of patients who underwent ileorectal anastomosis suffered from the same comorbidity. All patients underwent standardized follow-up as in election. RPA was performed in patients who were low to medium risk for CTES score ⁷. Patients who were Class III of CTES score were affected by intrabdominal abscesses, perforation and or peritoneal carcinosis, and treated with Hartmann procedure and/or "open abdomen" with temporary abdominal closure (TAC) by the mean of VACUUM PACK to ensure lower rates of postoperative complications ^{8,9}. These patients were excluded from the study. We also preoperatively evaluated with AFC score to predict post-operative mortality. Before and after surgery every patient was administered Cefuroxime 1.5 g IV 30 to 60 minutes and

Metronidazole 15 mg/kg IV infused over 30 to 60 minutes and completed 1 hour before the initial incision. After surgery Cefuroxime 750 mg IV or IM was administered every 8 hours when the procedure is prolonged. Metronidazole 7.5 mg/kg IV infused over 30 to 60 minutes at 6 and 12 hours after the initial dose ¹⁰. No preoperative intestinal bowel preparation was given to patients undergoing RPA. Linfoadenectomy was performed in every case in order to guarantee a radical dissection of the tumor respecting oncological criteria ¹¹ (Table I).

Results

We have had 24 (10,7%) cases of morbidity for generic causes and 12 (5,4%) cases of post-operative complications. Pneumonia which occurred in 12 (5,4%) cases was the most frequent general one. In four of them it was subsequent to a subphrenic abscesses which required a prolonged antibiotic therapy. The most common specific postoperative complication was anastomotic leak (4 cases with percentage of 1,8%) which occurred in the all three groups considered. It was treated with an aspirative drainage as well as antibiotics ⁶. Postoperative Ileus was observed in 4 (1,8%) cases. Half were observed in the RPA group a and half in the RPA with ileorectal anastomosis group. It solved with conservative therapy but in-hospital stay was prolonged and in one patient reached 15 days (Table II).

Discussion

Acute presentation of colorectal diseases, in particular for occlusive left colon cancer disease, force surgeons to focus on a complex series of issues. Obviously RPA is not always feasible and it is indicated in selected cases where patient general condition and local anatomical factors allow it. Factors that can influence success of a RPA are represented by: age, nutrition status, BMI, cardiorespiratory diseases and presence of chronic diseases (as vascular diseases, Chronic Kidney Disease, Liver Failure).

TABLE I - Patients

	RPA	RPA ileorectal anastomosis	RPA with ileostomy
Procedures	160 (71,4%)	36 (16,1%)	28 (12,5%)
M	61 (38,1%)	21 (58,3%)	15 (53,6%)
F	99 (61,9%)	15 (41,7%)	13 (46,4%)
Age	66,9	69,4	73,4
Diabetes	48 (30%)	5 (13,9%)	16 (57,1%)
BMI	26,8 Kg/m ²	28,5 Kg/m ²	31,3 Kg/m ²
CTES	Class I	Class I	Class II

TABLE II - Postoperative complications

	RPA	RPA ileorectal anastomosis	RPA with ileostomy
Mortality	0	0	1 (0,45%)
Morbidity	14 (6,2%)	7 (3,1%)	4 (1,8%)
Postoperative ileus	2 (0,9%)	2 (0,9%)	0
Cardiovascular accident	0	0	1 (0,45%)
Anastomotic leak	2 (0,9%)	1 (0,45)	1 (0,45%)
Pneumonia	8 (3,6%)	3 (1,3%)	1 (0,45%)
Subphrenic abscess	2 (0,45%)	1 (0,45%)	1 (0,45%)

TABLE III - CTES Score

Kidney failure	7 points	
Normal kidney functioning	0 points	
Albumine <3 gr/dl	6 points	Class I low risk < 4
Albumine >3 gr/dl	0 points	Class II medium risk 4-12
Cardiovascular disease	4 points	Class III high risk >12
No Cardiovascular disease	0 points	
Bowel perforation	4 points	
No perforation	0 points	

From an operatory point of view the technical choice is strongly conditioned by the presence of perforation, risk of peritonitis, stage of disease and especially by time of occlusion. A preoperative Colonoscopy is always advisable to assess the presence of the lesion. When it is contraindicated, CTC can be employed. It represents a comprehensive examination for preoperative evaluation of patients with CRC. In particular, it is accurate in the detection of significant colorectal lesions; enables evaluation of the entire colon, even in cases of obstructive lesions; and allows segmental localization of the tumor. At the same time, CTC permits staging of extracolonic tumor spread, both locoregional and distant⁴⁻⁶. After a diagnosis it's made, it's fundamental to have an idea of the surgical strategy to perform as soon as possible. In the Consensus Conference for the management of obstructing left colon cancer, it is stated that Hartmann procedure is to be considered only for patients with high surgical risk and that segmental resection with primary anastomosis is associated with same mortality and morbidity (Grade 2C). Other procedure, such as Loop Colostomy with staged procedure¹²⁻¹⁵. To standardize the technical choice, thus, many score scales are used. Among them the most simple and the most widely used is the CTES (Colorectal Tumors Emergency Score)⁷ (Table III).

This score consists of a score ranging from 0 to 12. Values between 0 and 4 identify a risk of failure of the RPA, values between 4 and 12, average risk and high risk if the score exceeds 12 points. It takes into account both local and general factors. The downing of Hartmann procedure in emergency surgery represent a change from the past, when it was known as the main intervention performed also in Class I and II patients. Nowadays the difference in postoperative outcomes between the two procedure mentioned is neglectable in patients CTES group I and II therefore RPA is strongly advisable for these patients affected by occlusive cancer of Colon, ensuring a low percentage of morbidity and mortality and respecting the patient's quality of life. Another score considered was AFC index which evaluate factors such as emergency surgery, age major of 70

years, loss of weight major than 10 kilos and previous neurological accidents. It seems to have the same value of P-POSSUM (Physiological and Operative Severity Score for the enumeration of Mortality and Morbidity) which is the most common used one for emergency surgery to predict postoperative mortality in patients undergoing colorectal surgery. Karem Slim et al in their work, after evaluating 1421 patients who underwent colorectal surgery, of which 268 suggested that, while many are the scores used for assessing postoperative mortality, P-PossuM and AFC have same sensivity and specificity, and only two are key features of those mentioned: the perioperative conditions of the patient and the emergency of the interventions^{16,17}. A "stapled side-to-end anastomosis" was performed instead of an "end-to-end" one in order to guarantee a wider diameter, a better blood flow, thus reducing intraluminal pressure and proximal ischemia¹⁸⁻²⁰. As stated before no intestinal preparation was given to patient undergoing surgery and this wasn't a factor which escluded patients to get RPA. Moreover Bucher et al, in their work, clearly explain that not only, outcomes don't change but, on the other hand, there is a more probable risk of abdominal sepsis due to a dramatical change in cellular components of the colonic wall that conduct to anastomosis inflammation and consequent leak²¹.

Conclusions

We can say that on the basis of our findings RPA in patients suffering from an acute presentation of colorectal cancer is feasible and is able to ensure oncological standards, comparable to elective surgical procedure in selected patients. An accurate and early diagnosis of occlusive colon cancer cases is essential to ensure better outcomes.

Riassunto

INTRODUZIONE: I tumori del Colon-Retto sono la seconda causa di morte nei paesi occidentali. Ci sono circa 1500 morti ogni anno in Italia a causa di cancro del colon-retto in entrambi i sessi¹.

MATERIALI E METODI: 224 pazienti, 127 donne (56,7%) e 97 uomini (43,3%) sono stati sottoposti a resezione del Colon-Retto con anastomosi primaria (RPA) in emergenza a causa di cancro occludente il colon sinistro tra il 2010 e il 2016. I pazienti avevano una età media di 67,2 anni un indice di massa corporea inferiore a 30 kg/m² in 215 casi (96%) e una storia di malattia cardiovascolare in 112 casi (50%).

RISULTATI: Tutti i pazienti con un decorso postoperatorio regolare hanno avuto non più di 10 giorni di ricovero ad eccezione di quattro che hanno sofferto ileo postoperatorio che si è risolto dopo non più di 15 gior-

ni. Abbiamo avuto 24 (10,7%) casi di morbilità per cause generiche e 12 casi (5,4%) di complicanze post-operatorie specifiche. La Polmonite, che si è verificata in 12 casi (5,4%), è stata la complicanza più frequente.

CONCLUSIONE: La tecnica ideale in realtà non esiste. RPA è, quando possibile, consigliabile per i casi neoplastici occlusivi, garantendo una bassa percentuale di morbilità e mortalità e un rispetto della qualità della vita del paziente.

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