

ORIGINAL ARTICLE

SURGICAL TREATMENT OPTIONS IN COMPLICATED COLO-RECTAL CANCERS OPERATED IN EMERGENCY**Georgiana Bianca Constantin¹, D. Firescu^{1,2}, R. Bîrlă^{3,4}, S. Constantinoiu^{3,4}**¹“Dunărea de Jos” University Galați, Faculty of Medicine and Pharmacy, Romania²“Sf. Ap. Andrei” Clinical County Emergency Hospital, Galați, Romania³“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania⁴“Sfânta Maria” Clinical Hospital, Bucharest, Romania

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Abstract

Globally, the colo-rectal cancer is the 4th in frequency of all neoplasia and in Romania is the 2nd, with a yearly tendency of increasing the number of new cases. The poor symptomatology in the inchoate stages and also the deficiency of effective screening programs lead to frequently late presentation of patients, with tumors in complicated stages, when the surgical operations, very often can no longer have a curative intention. We will present the results of a retrospective study during 10 years (2007-2016) that included 431 patients with complicated colo-rectal cancers, admitted and operated in the 2nd Surgery Clinic of the Clinical Emergency County Hospital “Sf. Ap. Andrei” from Galati, Romania. In 133 cases (30,9%), most of them occlusive, it was practiced in emergency a left iliac anus, leaving the tumor in its place. The Hartmann operation was practiced in 97 cases (22,5%). Anytime it was possible, we practiced operations with radical intentions, like: right hemicolectomy, in 46 cases (10,7%), left hemicolectomy, in 13 cases (3%), segmentary colectomy with anastomosis, in 30 cases (6,9%). Regarding the surgical operations in emergency, many of them don't have a radical intention, taking into account the local invasion of the tumors and the metastasis. In these situations, a first surgical gesture is required, as an intervention that is meant to save the patient's life, solving only the complication.

Keywords: surgery, emergency, colo-rectal cancer, complications**Introduction**

Globally, the colo-rectal cancer is the 4th in frequency of all neoplasia; according to the WHO (2000), there are approximately 875000 new cases each year [1].

In Romania, according to GLOBOCAN 2012, the colo-rectal cancer is the second in frequency of all neoplasia [2]. There is a yearly tendency of increasing the number of new cases, both sexes being affected almost equally.

The deficiency of effective screening programs for colo-rectal cancers and the poor symptomatology in the inchoate stages lead to a late presentation of patients in hospital, with complicated tumors, in the 4th stage, that often imply surgical operations with no curative intention.

The occlusion is the most frequent complication. Above the obstruction, there will be a more accelerated peristalsis, trying to overtake the obstacle. Beneath the obstruction,

the peristalsis and the absorption function will be kept, but subsequently, the colon will become inert and tonic constricted [1-3].

Clinically, the patient may present a recent history of transit disorders. When the transit stops, the patient presents with meteorism, abdominal pain, nausea and vomit.

The perforation is a severe complication, given the septicity of the colon and the fact that it occurs on a weakling terrain.

The hemorrhage is a rare complication of the colon cancer. The exofitic, vegetant tumors can evolve with the necrosis of a segment of the tumor and its elimination, followed by abundant rectoragies. The rectoragies can dominate the symptomatology in rectal cancers.

In obstructive tumors of the right colon, based on the developmental stage and the patient's risk factors, we can practice: right hemicolectomy with ileotransvers anastomosis, internal derivation, like ileotransversanastomosis or just a cecostomy.

In left colon cancers, the distention above the obstacle will bring, apart from the hydroelectrolitic and acid-base disorders, a totally unprepared colon into the operatory wound and a certain degree of parietal vascular suffering [1-3].

The therapeutic options in occlusive left colon cancer are:

- The tumor resection, without an anastomosis in the same operatory time, with a colostomy and closing the distal extremity (Hartmann). After a period of 3 weeks-3 months, a reintervention can be practiced in order to eliminate the colostomy and restore the colic continuity
- The tumor resection with anastomosis in the same operatory time, which implies a high risk of anastomotic fistula
- The tumor resection with anastomosis, protected by a colostomy or a ileostomy, that will later be closed
- Subtotal colectomy, which has a very high risk of anastomotic fistula
- A simple colostomy, as a unique operatory first gesture, which is only meant to save the patient's life.

The surgical attitude in complicated colo-rectal cancers depends on a lot of factors, such as: the patient's biological status, the tumor development

degree, the time since when the complication occurred, the intraoperative aspect of the colon and also the surgeon's preference [4].

Materials and method

Between 2007 and 2016, 518 patients with colo-rectal cancers were admitted and operated in the 2nd Surgical Clinic of the Clinical Emergency County Hospital „Sf. Ap. Andrei” in Galati. 431 of these patients had complicated colo-rectal cancers (occlusions, perforations, hemorrhages). We've made a retrospective study, including the 431 patients and we analyzed the various surgical treatment methods which were practiced based on the tumor location. We took the data from the medical records, the operatory protocols and the histopathological reports.

Our including criteria were: patients who were treated in the 2nd Surgical Clinic of the Clinical Emergency County Hospital „Sf. Ap. Andrei” in Galati between 2007 and 2016; patients admitted and operated in emergency for complicated colo-rectal cancers.

Results

In 133 cases (30,9% of all) only an emergency colostomy was practiced, as a minimum surgical gesture, meant to save the patient's life, but leaving the tumor in its place. Most of them (71,4%) were rectal tumors, 14,3% sigmoid tumors, 11,3% recto-sigmoid tumors and 3% ano-rectal tumors. In 117 cases (88%), the tumor's complication was the occlusion, 10,5% were tumors complicated with hemorrhages, 0,8% with imminence of diastatic cecum perforation and 0,8% with tumor perforation (Figure 1).

The Hartmann operation was practiced in 97 cases (22,5%), 76 of those (78,4%) for sigmoid tumors, 13,4% for recto-sigmoid tumors, 5,2% for descendant colon tumors and 3,1% for rectal tumors. Most of them (80,4%) were tumors complicated with occlusion, 15,5% with tumor perforation, 3,1% with imminence of diastatic cecum perforation and 2% with hemorrhage.

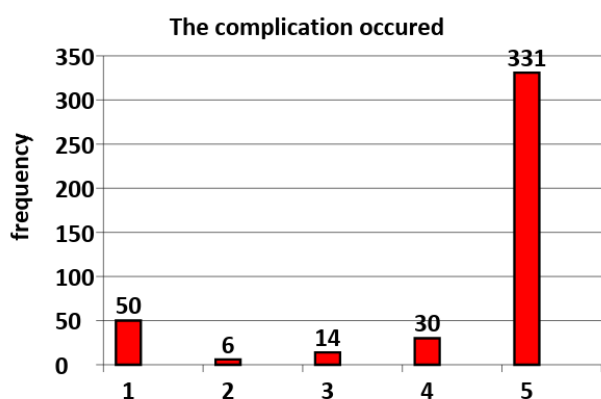


Figure 1 – The complications of the tumors at the moment of emergency surgery (1 – hemorrhage; 2 – cecum diastatic perforation; 3 – imminence of cecum diastatic perforation; 4 – tumoral perforation; 5 – occlusion)

In 41 cases (9,5%), a right hemicolectomy was practiced, 92,7% of which being occlusive tumors of the cecum, the ascendant colon or the hepatic flexure. In 5 cases (1,2%) a right hemicolectomy with protective ileostomy was practiced.

The cecostomy (with Pezzer tube) was practiced in 21 cases (4,9%), 6 of those (28,6%) being sigmoid tumors, 5 (23,8%) descendant colon tumors, 3 (14,3%) transvers colon tumors, 3 rectal tumors, 1 (4,8%) ascendant colon tumor and one case of rectal and sigmoid tumor (synchronous tumors). In 9 cases (42,9%) the tumors were complicated with imminence of diastatic cecum perforation, 6 cases (28,6%) with diastatic cecum perforation and 6 cases with occlusion.

In 28 cases (6,5%) a segmental colectomy with end-to-end colo-colonic anastomosis was practiced. 25 of those cases (89,3%) were tumors complicated with occlusion, 2 cases (7,1%) with hemorrhage and one case (3,6%) of a tumor complicated with perforation. In 22 cases (5,1%), a colostomy or a protective ileostomy were considered to be useful (Figure 2, Figure 3).

A colostomy on the transvers colon was practiced in 4 cases (0,9%), 3 of those for tumors complicated with occlusion and one for a tumor complicated with imminence of diastatic cecum perforation.

In 29 cases there were practiced different types of internal derivations: ileo-sigmoidanastomosis in 3 cases (0,7% of all), transverse-descendant anastomosis in 9 cases

(2,1%), ileotransverse anastomosis in 15 cases (3,5%) and transverse-sigmoid anastomosis- one case (0,2%).



Figure 2 – Occlusive sigmoid tumor



Figure 3 – Perforated occlusive sigmoid tumor

In 3 cases (0,7%), the massive invasion of the tumors toward surrounding organs didn't allow another surgical gesture, but taking some bioptic fragments.

The left hemicolectomy was practiced: in 8 cases (1,9% of all) with end-to-end anastomosis, in 3 cases (0,7%) with a transverse colostomy, in one case (0,2%) with protective ileostomy and in one case with splenopancreatectomy (Figure 4).

In one case (0,2%) of a rectal tumor complicated with hemorrhage, only a hemostatic dressing (after anal dilatation under rachianesthesia) was practiced as a first surgical time. In another 29 cases (6,7%) of hemorrhage tumors, a colostomy and hemostatic dressing was practiced.

In one case (0,2%) a segmental ileo-ceco-colectomy with end-to-end ileocolonic anastomosis was practiced for an occlusive cecum tumor. In another case, a subtotal colectomy with ileosigmoid anastomosis was practiced.

In one case an anastomotic ileotransverse resection was required.



Figure 4 – Left flexure colon tumor with spleen invasion

In only one case, a tumor resection with mechanical anastomosis was possible, for a rectal tumor complicated with hemorrhage.

Discussion

The prognosis of the patients with colo-rectal cancers isn't good in general, much less when this pathology is treated in emergency, taking into account the specific of the organ, the septic content, the vascularization, the structure, the biological terrain to intervene on (elderly, comorbidities, immunosuppression) [5].

Although the procedures to precocious detect the colo-rectal tumors are very diverse and relatively easy available, in Romania we are still confronted with a worrying percent of patients who are diagnosed and operated in emergency for colo-rectal cancers. The statistics presented in this study is not corresponding to (as percent of the patients diagnosed and operated in emergency) other studies in countries like Uruguay [6], Mexico [7], Italy [8], Canada [9], USA [10], Spain [11], where the screening procedures are well up in and the patients' addressability better.

The colon emergency surgery, especially for the left one, continues to challenge, beginning with colectomies with immediate anastomosis to serial colic resections, Hartmann procedure or a simple colostomy. When choosing the surgical treatment procedure in emergency, we have to

take into account a lot of factors, such as: the patient's age, the comorbidities, the type of the complication, the tumor location, the invasion toward the surrounding organs, the metastasis.

The perforated tumors make therapeutical approach problems even bigger when associated with generalized stercoral peritonitis, making a mixing up of the peritoneal invasion by the mixed fecal flora of the colon, the excessive proliferation of which and high pathogenicity are the result of the intestinal stasis, with ischemic suffering of the colic mucosa, followed by the parietal invasion of anaerobic germs [12, 13].

Most of the literature studies [14, 15] report the hemorrhage as a very unusual complication of the colo-rectal cancers; nevertheless, in our study, we found a number of 30 patients with rectal tumors presented at the emergency room as rectorragies, one of these patients having a massive hemorrhage, which required a hemostatic dressing as a first surgical procedure [16,17].

Conclusions

The technical progress in surgery may lead to decreasing the duration of the operations and the decreasing of the local and general postoperative complications. But regarding the emergency surgical procedures, a lot of them don't have radical intentions, considering the local invasion of the tumors and the metastasis. In these situations, a first surgical gesture is required in order to save the patient's life, solving only the complication.

The increasing of the incidence of colo-rectal cancers, the continuous improvement of the diagnose methods and also the anesthesia and surgery progresses are enough reasons to reconsider the surgical treatment, including the treatment in emergency for complicated tumors. Making a surgical treatment option in emergency must consider a lot of factors, such as: the patient's biological status, the time since the complication occurred, the comorbidities, the age, the local invasion of the tumors, the metastasis, the aspect of the affected colon. Every time it's possible, the ideal thing is choosing a surgical method that implies the

resection of the tumor or at least allows the resection in a second surgical procedure.

Even if the elective approach for colo-rectal cancers has already been defined in guidelines and protocols, the surgical treatment for colo-rectal cancers presented in emergency (with obstruction, perforation or significant bleeding) has yet to be standardized.

Conflicts of interest

The authors declare no conflict of interest.

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