



Review Article

## Evolution of the Complications of Colorectal Cancer Treatment

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Colorectal cancer is the most frequent digestive tumor in our environment, with an incidence of 21-23 new cases per 100000 inhabitants/year. Usually the diagnosis is reached after a series of symptoms, with an average of 6 months of evolution. However, on other occasions, this diagnosis comes to us through the investigation of symptoms of acute onset, produced by evolutionary complications. These complications are intestinal obstruction, perforation and major bleeding. Below we describe these complications, their treatment and their prognostic implications.

1. Obstruction
2. Intestinal perforation
3. Hemorrhage

### Obstruction

The frequency of intestinal obstruction in large series ranges between 8 and 21%, frequently appearing as an acute condition without previous symptoms and without previous diagnosis. All statistics point to a worse prognosis of colorectal cancer in these cases, with a 5-year survival rate. Of 20% however, this survival depends to a large extent on the tumor stage rather than on the obstructive process itself, especially if we take into account a greater proportion of patients with liver metastases, lymphatic involvement and significant infiltration of the colon wall. Obstruction usually occurs for two reasons. On the one hand, the vegetative growth towards the intestinal lumen, and on the other the tendency of the tumor to become circumferential, infiltrating the wall and partially or totally stenosing it's light.

There are two locations where the obstruction is more frequent, in the left colon and at the level of the cecum, when said tumor occludes the ileocecal valve. The greater amplitude of the cecal bag makes the

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obstruction of its light more difficult, but it can occlude the valve given its smaller diameter. Clinically, neoplastic obstruction of the colon does not differ from those produced by other causes, although there may be data that may suggest this etiology, such as asthenia, anorexia, weight loss, previous rectal bleeding, often referred to hemorrhoids and anemia (characteristic of colon cancer dcho). Sometimes an abdominal mass and/or a hard and irregular hepatomegaly can be palpated, which may suggest the existence of liver metastases. Radiology provides important data and in many cases allows the correct diagnosis. The simple radiology of the abdomen shows dilation of the intestinal lumen with increased air and hydro-aerial levels. The existence of levels of thick I. and its location are decisive to locate the site of obstruction in the colon. On the other hand, the existence of small bowel hydro aerial levels without colic dilation is characteristic of caecal cancer, although in this case other causes must be ruled out, such as adhesions, hernias and appendiceal or inflammatory pathology of the terminal ileum.

The opaque enema indicated in these cases will allow us to see the morphology of the colon, to objectify the place of the obstructive process, whether partial or total and usually leads us to the correct diagnosis. It must be borne in mind that the tumor has a valvular effect that may not allow the passage of contrast through the tumor, but may allow a certain degree of passage to the distal area.

As for the treatment, it must be surgical and depends on the tumor location and the state of the intestinal wall. There are two possibilities: Primary resection with or without anastomosis or derivative surgery. Next we will expose the different techniques that we can use, according to the location. In obstructions of the caecum and right colon, the technique to be used should be right hemicolectomy, followed by ileotransverse primary anastomosis.

If the obstruction occurs in the transverse colon, we will perform an enlarged right hemicolectomy, followed by an ileocolic anastomosis. Occasionally, a loop transostomy can be performed, in order to solve the obstructive problem, and the patient can be intervened a posteriori when there is adequate preparation of the colon.

In tumors of the descending colon, surgery can be performed in two phases, colostomy and resection-anastomosis in a second time or primary resection with anastomosis. In these cases, antegrade washing of the colon is very useful, introducing washer fluid through the appendix for the intraoperative mechanical preparation, thus allowing the primary anastomosis. The endoluminal by-pass is also useful, in which to latex tube fixed proximally to the anastomosis and passing through it, prevents the contact of the intestinal contents with this one.

In tumors of sigma and middle or high rectum, in addition to the surgical possibilities targeted for the left colon, we can perform the Hartman intervention, in which a resection of the tumor is performed, closing the distal stump, and engaging the proximal exterior stump (proximal colostomy). Another possibility is to perform a subtotal colectomy with ileorectal anastomosis and that may be indicated in patients with liver metastases, in order to avoid a new intervention in a patient with poor survival.

## Intestinal Perforation

This evolutionary complication of colorectal cancer occurs between 3.7 and 7.8 of the cases. It is an often fatal complication, and may present as free perforation and the consequent fecaloid peritonitis, or as to plastron-abscess. This complication has also been associated with a worse long-term prognosis independently of the evident severity of the acute process, but this prognostic weight falls fundamentally on the tumor stage, since perforations are also more frequent in advanced stages of the tumor.

Perforation usually occurs at the site of the tumor, which is perforated, due to infiltration of the wall and local necrosis phenomena. Occasionally, this perforation may appear in another area, either immediately above the tumor, favored by colonic distension in cases of obstruction. Cecal perforations can also be discovered in colon obstructions, when the caecum suffers great dilatation and there is a competent ileocecal valve. There is always a certain degree of obstruction.

Clinically, it is framed within the context of the severity of acute, diffuse or localized peritonitis, associated or not with intestinal obstruction, and it is possible that there could be previous data as well as in the obstruction that would allow us to suspect the preoperative diagnosis. Radiological studies may reveal obstructive signs, diffuse paralytic ileus, and pneumoperitoneum, a finding that would confirm the diagnosis of perforation of the hollow viscus.

The treatment must be surgical and immediate, with the patient in the best possible conditions, and must be aimed at eliminating the cause of the perforation, the cleaning of the cavity and the adequate drainage of it. In this situation the possibility of a primary anastomosis is removed, given the septic situation and should be selected for resection if possible of the tumor, the area of the perforation and the realization of a proximal terminal colostomy (Hartman). In a 2nd time, with the patient in better condition, it would proceed to the restoration of intestinal continuity. In perforated right colon cancer a hemicolectomy with primary anastomosis can be performed. In the rest of the locations there are surgeons who favor the primary anastomosis, associated with the washing of the colon, and / or the protection with endoluminal prosthesis, but the risk of leakage in the anastomosis is high.

## Hemorrhage

All tumors of the colon in their evolution bleed to a greater or lesser extent, but rarely hemorrhages appear that compromise the life of the patient. Major hemorrhages only occur in 1% of patients with colorectal cancer, and very rarely do they need an emergency intervention to restrict such bleeding.

The bleeding in these cases comes from the ulcerated tumor, due to invasion and rupture of a vessel and recent studies suggest a better prognosis in these patients than in the previous cases. As for the diagnosis, this will rely primarily on endoscopic study to locate the exact location of the tumor and the hemorrhage, as well as to rule out other causes of major bleeding, such as diverticulosis and vascular malformations. The treatment, initially medical if the hemorrhage does not compromise the life of the patient, aims to achieve an adequate preparation of the colon, and take the patient to a colon resection in the best possible conditions. If the decompensated hemorrhage to the patient and the medical measures do not obtain the control, then it should be resorted to the surgery, directed to the regulated resection of the tumor. The performance of a primary anastomosis or the decision to use other techniques such as those already discussed for cases of obstruction and perforation will depend fundamentally on the degree of cleanliness of the colon and the surgeon's own experience.

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