

Colonic Cancer in Occlusion: A Case Report of 70 Patients Experience of the Visceral Surgery Department at the Moulay Ismail Military Hospital in Meknes, Sidi Mohamed Ben Abdallah University in Fez

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Abstract

Original Research Article

Occlusive colon cancer is a serious condition, as it combines two very serious pathologies: cancer and acute intestinal obstruction. Colon cancer is a malignant proliferative neof ormation developed at the expense of the colonic wall. Colonic obstruction is defined as the interruption of normal intestinal transit, and represents the mode of revelation in 8 to 29% of colon cancers. Occlusion is the most common complication of colonic cancer, either as a result of the disease or as it progresses, accounting for 15-30% of cases.

Occluded colon cancer poses a twofold problem:

- On the one hand, occlusion and its potential repercussions, particularly of a general or upstream intestinal nature.
- On the other hand, it reveals a late diagnosis most often associated with a locally advanced or metastatic tumour.

Our study concerns 70 cases of colonic cancer in occlusion diagnosed and treated in the visceral surgery department of the Moulay Ismail Military Hospital in Meknes, over 5 years from 01 January 2019 to 31 December 2023.

The aims of our retrospective study are:

- Evaluate the proportion of this complication that is indicative of colonic tumour pathology.
- To review the range of surgical and non-surgical techniques available.
- To establish guidelines for dealing with this type of complication in order to minimise morbidity and mortality.

Our series includes 46 men and 24 women with a sex ratio of 1.9 aged between 35 and 86 years, who presented to the emergency department after an average delay of 07 days with extremes of 03 days and 08 days, with an occlusive syndrome (78.6%), sub-occlusive syndrome (21.4%), abdominal pain (95.7%), transit disorders (82.9%), vomiting (75.7%) and rectal bleeding (72.9%). The clinical examination revealed weight loss in 49 patients (70%); abdominal distension in all our patients (100%); and an empty rectal ampulla in all our patients (100%). All our patients underwent PSA, which revealed colonic NHA in 81.4% of cases, bowel NHA in 2.9% and mixed NHA in 16.7%. CT confirmed the diagnosis and specified the site of occlusion, with the sigmoid being most affected (45.7%). Our patients underwent surgical treatment: proximal colostomy in 18 patients (25.7%); segmental resection in 10 patients (14.3%); left colectomy in 16 patients (22.8%); right colectomy in 07 patients (10%); Hartmann procedure in 06 patients (8.6%) and protected anastomotic resection in 13 patients (18.6%). Overall morbidity was 12.9%, and there were 06 deaths in our study.

Keywords: colon cancer, Colonic obstruction, tumour, NHA.

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INTRODUCTION

Colonic cancer in occlusion is a serious pathology, as it combines two very serious pathologies; namely cancer and acute intestinal occlusion.

Colon cancer is a malignant proliferative neof ormation developed at the expense of the colonic wall. Colonic obstruction is defined as the interruption of normal intestinal transit, and represents the mode of revelation in 8 to 29% of colon cancers [1].

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Occlusion is the most common complication of colonic cancer, either as a result of the disease or during its progression, accounting for 15-30% of cases [2, 3].

Occluded colon cancer poses a twofold problem [4, 5]:

- On the one hand, occlusion and its potential repercussions, particularly of a general or upstream intestinal nature.
- On the other hand, it reveals a late diagnosis most often associated with a locally advanced or metastatic tumour.

Nevertheless, improvements in medical and surgical management have led to a reduction in short- and long-term morbidity and mortality.

MATERIALS AND METHODS

Our work is the result of a retrospective study of a series of 70 cases of colonic cancer complicated by occlusion carried out in the visceral surgery department of the Moulay Ismail Military Hospital in Meknes over a period of 05 years from 1 January 2019 to 31 December 2023.

Our Objectives Were:

- Evaluate the proportion of this complication that is indicative of colonic tumour pathology.
- To review the range of surgical and non-surgical techniques available.

- To establish guidelines for dealing with this type of complication in order to minimise morbidity and mortality.

RESULTS & DISCUSSION

Colorectal cancer is the most common digestive cancer, ranking 3rd in terms of frequency [6].

Various epidemiological studies have confirmed that colorectal cancer ranks first among digestive cancers [7, 8], and, along with lung, prostate and gynaecological-mammary cancers, is the most common cancer in the Rabat and Casablanca regions [7-9].

In France, 70% of colonic occlusions are of tumour origin, and around 16% of colorectal cancers are diagnosed at the occlusive stage [10].

The average age of patients operated on for colonic cancer occlusion is 66 years in France [11]. In our study, the average age of patients was 58.21 years, with extremes ranging from 35 to 86 years.

Based on our mean age, we can see that Western series are the closest to our study.

On the other hand, the average age of African series is partly young.

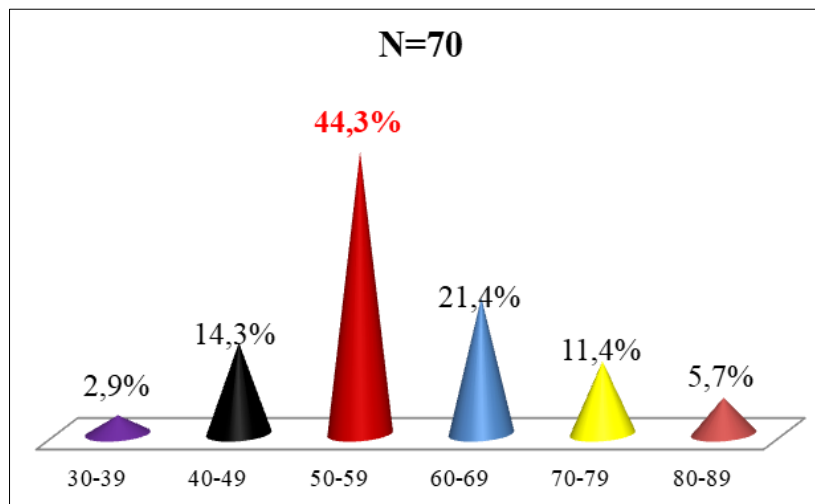


Figure 1: Distribution of patients by age group

According to Moroccan research on CRC, the reported incidence rate in men is approximately 7 per 100,000 inhabitants per year, while the incidence in women is slightly lower [12].

In our series there were 46 men and 24 women, giving a sex ratio of 1.9.

Of the 70 patients with colonic cancer in occlusion :

- 55 patients were admitted with frank occlusion, i.e. 78.6%.

- 15 patients (21.4%) were admitted with sub-occlusion.

No patient in our series had a specific personal history (familial adenomatous polyposis, inflammatory bowel disease).

Forty-three (43) patients had underlying comorbidities (namely hypertension, diabetes and ischaemic stroke).

None of our patients had a family history of digestive, gynaecological or urinary tract cancer or PAF.

The average waiting time for consultation in our series was 7 days, with extremes of 03 to 08 days.

This waiting time could be explained by the fact that the symptoms are often trivialised by the patient, in addition to which there is a lack of health education.

This delay conditions the vital prognosis of the patient and the therapeutic modality.

The complete occlusive picture is similar to warning signs, which must never be overlooked [13-15]:

- Intermittent vague abdominal pain localised in the colonic region, increasing with time and without radiating.
- Disturbed bowel movements, even a bloody discharge from the anus, or sub-occlusive accidents.
- Rectal discharge, most often suggestive of a tumour of the left colon.

In our series, 72.9% of patients reported rectal discharge. The risk of complete obstruction develops over several days and is characterised by the cardinal signs:

This sign was present in 95.7% of patients in our series, as it was in Kaissi [16], compared with Belfequih [17], who reported this sign in 80% of cases.

- Stoppage of bowel movements and gas: The existence of an episode of diarrhoea does not necessarily call the diagnosis into question; it is the cessation of gas that has the greatest semiological value.

The cessation of matter and gas was noted in 78.6% of cases in our study; this sign was found in 100% of cases in Tapily's series [18].

- Vomiting: late and frequent, initially alimentary then bilious and may become faecal. In our series, vomiting was present in 75.7% of cases.

Champault's study [19], reported this sign in 45.5% of cases, whereas it was 94% in Tapily's series [18].

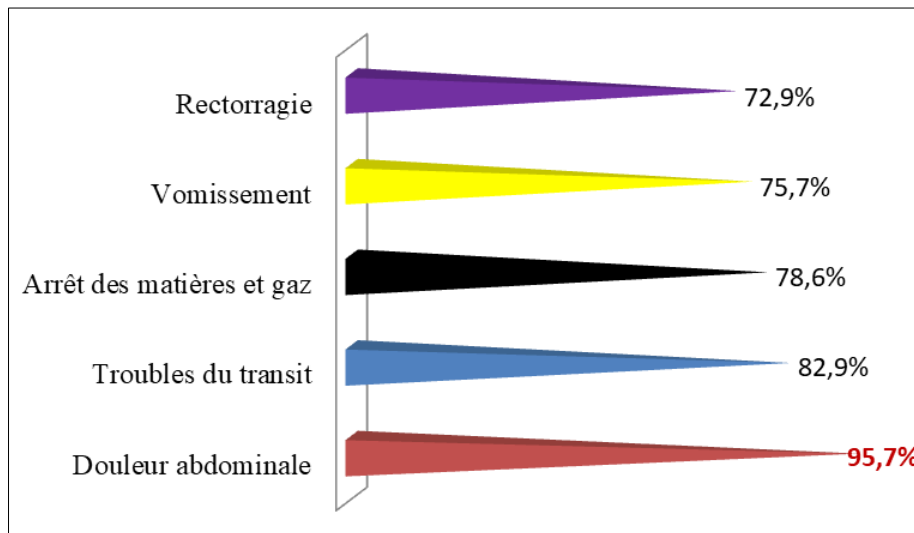


Figure 2: Distribution of patients according to functional signs

The patient's general condition takes into account the time elapsed since the onset of symptoms and the causative pathology. The patient's general condition is generally stable, but in some cases there are signs of severity [14, 15].

In our series, general signs were frequently found: 70% (49) of our patients reported weight loss, 14% (10) a deterioration in general condition, and a febrile syndrome was reported in 11 patients (15.7%).

The clinical examination revealed abdominal distension in all of our patients (100%), abdominal tenderness in 55 patients (78.6%), peripheral adenopathy in 11 of our patients (15.7%) and vacuity of the rectal

ampulla in all of our patients (100%) after digital rectal examination.

In 66% of cases, PSA provided a positive diagnosis of colonic obstruction, showing distension of the digestive structures and NHA, which is the main radiological sign of colonic occlusion [20, 21].

Classically, colonic NHAs are located in the periphery, higher than they are wide, and present with colonic haustrations [22].

Perforation may appear as pneumoperitoneum on palpation (hence the need for images centred on the diaphragmatic cupolas) [21].

A PSA was performed in all our patients. Hydroaerosolic levels of colonic type were found in 81.4% of cases, mixed in 15.7%, and of greaves type in almost 2.9% of cases.

CT is the imaging method of choice for colonic cancer obstruction, as indicated by the consensus conference of the World Society for Emergency Surgery [23]. CT scans can be used to diagnose colonic obstruction, distinguish its aetiology and reveal its complications.

CT findings in occluded colonic cancer include asymmetric thickening of the colonic wall or an enhanced soft tissue mass after contrast injection, which narrows the colonic lumen with or without signs of ischaemia and perforation [24, 25].

In our series, abdominal CT scans were performed in 63 patients, i.e. in 90% of cases. This enabled the diagnosis of occlusion of a colonic tumour to be made and the location to be determined in 100% of cases in which it was performed, showing a more or less circumferential colonic parietal tissue mass enhanced after injection of IV contrast, with upstream intestinal dilatation.

In our series, tumours were found in the sigmoid in 32 patients (45.7%), the left colonic angle in 21 patients (30%), the transverse colon in 05 patients (7.10%), the right colonic angle in 10 patients (14.30%) and the coetum in 02 patients (2.9%).

CT scans revealed liver metastases in 06 patients (8.6%).

CRC may present with colonic obstruction in 15 to 20% of cases [26]. Firstly; it may be necessary to determine the aetiology of the obstruction, secondly; it is possible to direct surgical resection, and thirdly; to perform a biopsy of the tumour for anatomopathological study [27].

In our series, preoperative colonoscopy was performed in 28 patients, i.e. 40% of cases.

Ultrasound is not traditionally recognised as a technique that can be used in occlusive syndrome, given the acoustic barrier created by the accumulation of gas in the intestinal tract [28]. It was performed in only one patient in our series, i.e. 1.4% of cases. It was normal.

The diagnosis of a colonic tumour responsible for the obstruction was made preoperatively in all our patients on the basis of CT scan and/or colonoscopy.

An extension work-up including at least a chest X-ray, CT scan and/or abdominal ultrasound was performed preoperatively in 100% of cases.

The management of colonic obstruction is a difficult dilemma, with multiple variables involved in choosing the best therapeutic strategy.

Key factors that need to be considered include the patient's clinical condition, tumour stage, resectability of the obstructive lesion, and the location and severity of the obstruction [29].

Once a colonic obstruction has been diagnosed, medical treatment is immediately started to correct the disturbances in volume, electrolyte and acid-base balance. Medical treatment must be continued intra- and post-operatively until bowel transit is resumed [30, 31].

Surgical treatment is the most commonly described approach for the treatment of colonic cancer in occlusion, the essential objective being to remove the obstruction or to allow colonic preparation in order to perform colonic surgery under good local conditions. The choice of surgery will depend on the location of the obstruction, the patient's general condition, the surgical results and the experience of the hospital team [32].

Intraoperative exploration revealed hepatic metastases in 05 patients, ascites which subsequently turned out to be tumorous in 07 patients, and deep adenopathy in 08 of our patients.

The left colon was the most affected segment, predominantly sigmoidal.

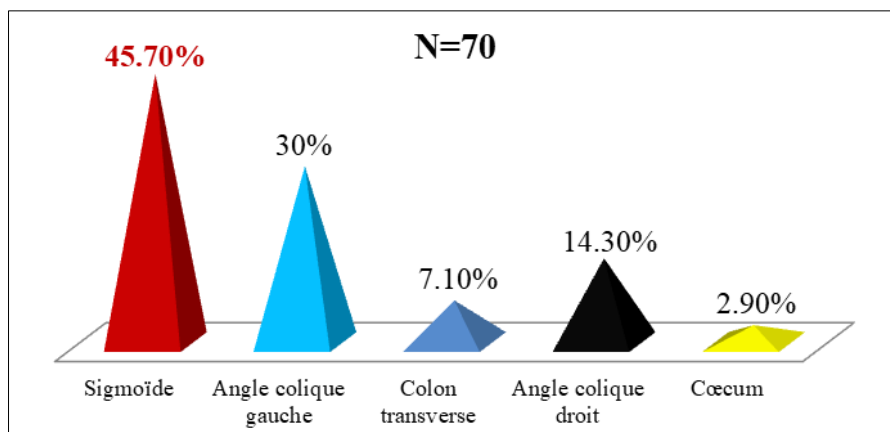


Figure 3: Location of tumour established intraoperatively

The surgical approach to colon cancer in occlusion can be divided into two groups: primary resection and primary colostomy.

The surgical method remains a subject of debate between those who advocate single-stage surgery and those who support 2 or 3-stage surgery [33].

This debate is underpinned by the fact that colonic cancer in occlusion combines two (2) very serious pathologies, namely intestinal obstruction and tumour.

The morbidity and mortality of this pathology is multiplied by 3 compared with elective surgery.

The choice between different surgical techniques is made on a case-by-case basis, but all surgical methods must follow the objectives proposed by the American Society of Colon and Rectal Surgeons [34]: avoid immediate intra- or post-operative complications; obtain the best possible control of the tumour and ensure rapid recovery to allow appropriate adjuvant or systemic treatment to be instituted.

Multi-stage surgery is reputed to be dangerous, in fact it is associated with a high morbidity and mortality rate, in addition to a prolonged hospital stay.

Three-stage surgery and resections followed by protected anastomoses are rarely performed these days. Emergency tumour resection is currently the trend in the management of tumours complicated by occlusion.

Despite this aggressive surgical approach, this therapeutic option has helped to reduce morbidity and mortality over the last twenty years.

Hartmann's procedure should be used whenever the anastomosis is dangerous and when the two ends cannot be removed; in fact, Hartmann's procedure is preferable in high-risk patients [35].

Nowadays, resection associated with anastomosis is performed progressively, and was previously dreaded by surgeons because of the risk of anastomotic leakage and other postoperative

complications associated with the procedure performed on a distended and unprepared intestine [36-38].

Single-stage surgery is now increasingly recommended, especially when conditions are favourable.

The choice of surgery depends on a number of variables: age, the patient's general condition, the degree of tumour extension, the appearance of the colon upstream of the tumour obstacle and the surgeon's experience.

Various studies have shown that this operation is appropriate: no evidence has been reported of tumour progression while waiting for surgical removal, any general surgeon can easily perform this operation, the mortality rate is progressively reduced, and contamination of the abdominal cavity is practically negligible [39].

Primary colostomy was the most frequently used surgical option in our series (25.7%), with a morbidity rate of 12.9% (including restoration of continuity during the second stage of the operation). No deaths were reported.

In the study by Chéreau *et al.*, [40], near upstream colostomy was possible in 73% of cases, after an average operating time of no more than one hour, and was associated with low postoperative morbidity and mortality of 9.8 and 3.3% respectively. Barth *et al.*, [41], performed 99 near upstream colostomies, the mortality rate was almost 21% (including mortality linked to subsequent removal). Champault [42], collated 270 left colon cancers in occlusion, 146 patients benefited from a near upstream colostomy with a mortality rate of 26% (usually due to the unfavourable clinical presentation of the patients).

As already mentioned, near upstream colostomy is generally indicated for patients who are impaired and who cannot tolerate emergency tumour removal, and is in fact indicated for patients who are unfit for major surgery [43-4].

In our series, 18 patients benefited from a first colostomy, i.e. 25.7% of cases.

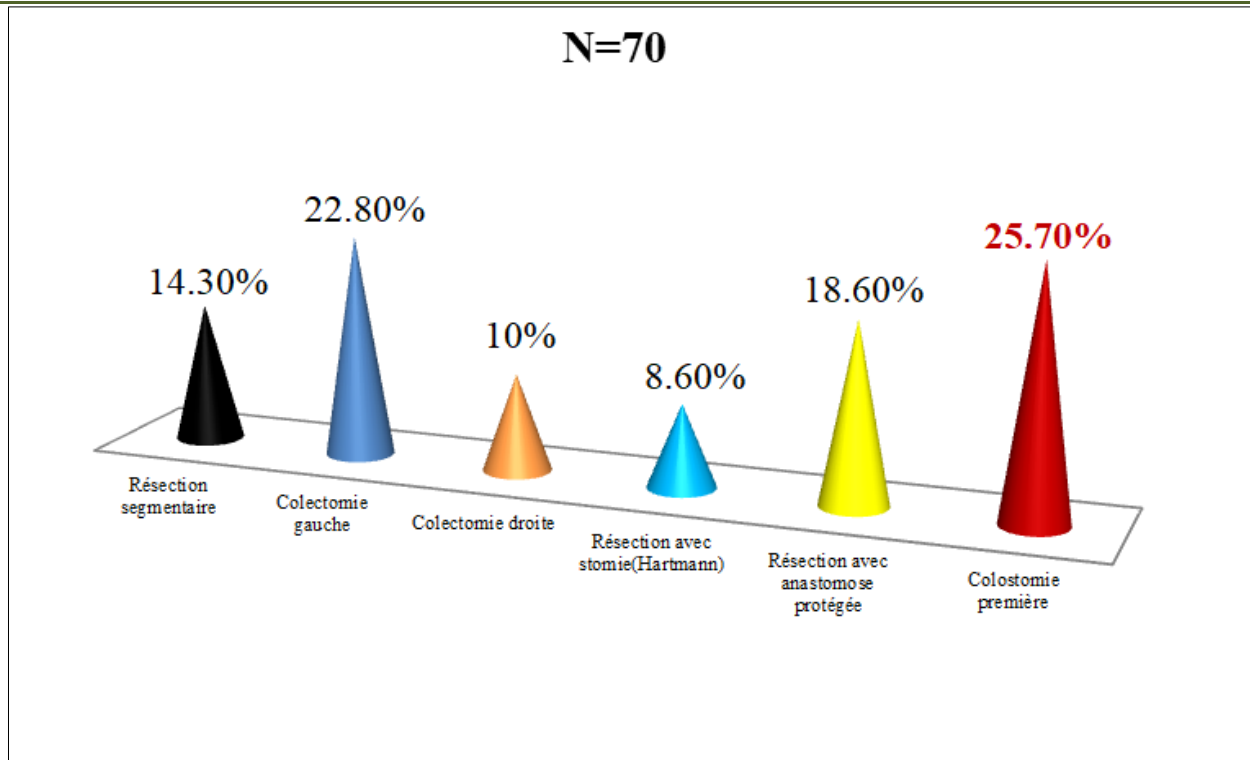


Figure 4: Operations performed

Oncological management after emergency surgery remains a clinical challenge, particularly for colon cancer in occlusion.

The postoperative administration of adjuvant chemotherapy is recommended after carcinological resection of the primary tumour in a patient at the localised tumour stage [45]. This adjuvant treatment should begin 4 weeks after resection of the primary tumour [45]. In our series, 58 patients (82.9%) received adjuvant chemotherapy.

It is an intra-peritoneal chemotherapy which, thanks to its high concentrations and local resorption, reduces the rate of hepatic and peritoneal recurrence.

In the case of an occlusive colon tumour, the tumour process is generally inaccessible to curative surgery. Immediate palliative chemotherapy can improve quality of life and survival.

The immediate post-operative course was straightforward in 54 patients (77.10% of cases). Complications of 22.90% were noted in 16 of our patients.

These complications were attributable to: anastomotic release in 04 patients, i.e. 5.70%; stomal prolapse in 03 patients, i.e. 4.30%; evisceration in 01 patient, i.e. 1.40%; pulmonary embolism in 02 patients, i.e. 2.90%; and unfortunately, 06 cases of death were recorded in our study, i.e. 8.60%.

All patients in our series had histological evidence of malignancy.

In all cases, it was a more or less differentiated lieberkhunian adenocarcinoma:

- Well differentiated adenocarcinoma in 34 patients i.e. 48, 60%.
- Moderately differentiated adenocarcinoma in 20 patients (28.60%).
- Poorly differentiated adenocarcinoma in 12 patients (17.10%).
- Mucinous adenocarcinoma in 04 patients (5.70%).

Occluded colon cancer remains a serious disease associated with a very poor long-term prognosis and high mortality [46]. Ratto *et al.*, [47], have shown that tumour obstruction is a condition with a very poor long-term prognosis in colon tumours, as demonstrated by several meta-analyses.

Occluded colon cancer is a serious pathology, which is explained by the advanced stage of the cancer; the advanced age of the patients, which remains a poor prognostic factor; the general condition is often altered on admission; the decompensation of diseases (particularly cardiopulmonary diseases); hepatic metastases, which are present in 25% of cases and are a major determinant of long-term survival; the pathophysiological consequences of obstruction (hypovolaemia, hydroelectrolytic and acid-base disorders, infections, etc.); and the overall time between the onset of the obstruction and its progression.); and the

overall time between the onset of symptoms and medical and surgical treatment determines prognosis.

The recommendations for monitoring stage II to III patients who have undergone curative surgical treatment are as follows [48]. Clinical examination every 3 months for 3 years, then every 6 months for 2 years, and carcinoembryonic antigen (CEA) testing: given the recent data reported, CEA monitoring is no longer recommended as it has not been shown to be of benefit (recommendation level: grade B).

If it is elevated preoperatively, its normalisation should be assessed by measuring it 6 to 8 weeks after surgery. Persistent elevation indicates the persistence of tumour remnants requiring morphological assessment.

Colonoscopy: If incomplete or of poor quality before the operation, it should be performed within 6 months postoperatively; if complete and of good quality preoperatively, it should be performed at 1 year. It should be repeated every 3 years if there are no polyps on the remaining colon.

An abdomino-pelvic CT scan is recommended annually for 3 years in stage III patients, and may be indicated for stage II patients at high risk of recurrence. Stage IV patients are monitored at the same rate as the previous group:

An abdomino-pelvic CT scan is recommended every 3 to 6 months for the first two years, then every 6 to 12 months for five years.

A carcinoembryonic antigen (CEA) test is recommended every three months for the first two years, then every 6 months for the following three to five years.

In the chronology of colon cancer research, various milestones can be found in the development of prevention and screening tools.

Survival, estimated in our context at 60% of cases.

CONCLUSION

At the end of this work, it should be emphasised that colon cancer in occlusion is a frequent and serious emergency, revealing a late diagnosis, most often associated with a locally advanced or metastatic tumour.

Emergency management of these cancers is therefore crucial, and must include assessment of the patient's general condition (age, co-morbidities, nutritional status), and the stage of the disease, which will have a direct impact on early and distant post-operative results.

The therapeutic strategy can only be devised as part of a multidisciplinary consultation involving intensive care units, radiologists and surgeons.

Surgical treatment remains the most commonly used approach in our context.

Primary colostomy was the surgical technique most frequently used in our series, and immediate tumour removal with or without restoration of digestive continuity should be attempted whenever the patient's general condition permits. The study showed that first colostomy after resuscitation measures is a safe and effective option in our context. However, the prognosis for colorectal cancer remains poor in developing countries, due to delayed diagnosis, lack of screening and difficulties in accessing care.

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