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Colic Cancers in Occlusion Diagnostic and Therapeutic Aspects in Emergency at the Treichville University Hospital

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Abstract **Original Research Article**

Aim: To report diagnostic aspects and the emergency therapeutic modalities of occlusive colon cancers. ***Patients and methods:*** This was a retrospective and descriptive study carried out from January 2018 to December 2024 (07 years) in the Department of Digestive and Proctological Surgery at the University Teaching Hospital of Treichville. patients who went through surgery for obstructive histologically confirmed colon cancer were enrolled in the study. The following patients' characteristic were analysed: age, sex, history, clinical, paraclinical, therapeutic data, and evolution. ***Results:*** The average age of the 22 patients (13 men and 9 women) in the study was 53 years ± 15 years. Three patients had a history of cancer. Five patients were followed up for colon cancer. The clinical feature was mostly a progressive onset of occlusion occurring on an average of 21.6 days. Abdominal CT scan (19/22) revealed an occlusive colon tumor, mainly developed in the sigmoid (n=5). At laparotomy, tumors were located in 59.1% (n=13) in the left colon, frequently in the sigmoid (n=9), and in 40.9% (n=9) in the right colon. In one case, diastatic perforation of the transverse and caecuna was associated with a sigmoid tumor. Tumor excision was performed in 90.9% (n=20). A diverting colostomy was performed in 09.1% (n=2). Immediate resection-anastomosis was performed in 10 cases and resection-stomy in 10 cases. Histology revealed adenocarcinoma. Morbidity represented 11 cases (50%). There were 6 deaths (27.3%). ***Conclusion:*** Colon obstruction is a frequent but revealing complication of colon cancers. Colectomy with immediate or secondary anastomosis remains the treatment of choice in emergencies.

Keywords: Colon-cancer-intestinal obstruction-colectomy.

INTRODUCTION

Colon obstruction is common and revealing complication of colorectal cancers [1-3]. In approximately 4 to 30% of cases, colon cancer is revealed by obstruction [1-3, 5].

Colon obstruction is pointed out as serious for it is associated with deleterious consequences on intestine and general performance status, the tumor is too often locally advanced, metastatic, often occurring in elderly with comorbidities rending difficult surgical excision [5]. Postoperative morbidity (45-50%) and mortality (15-20%) are higher than in uncomplicated forms [5].

Surgical management of occluded colon cancers remains controversial. Many surgical procedures were found out, each has advantages and disadvantages in the short and mean term [3]. The procedures consisted

of tumor excision, diverted colostomy and two step - stage surgery [1-6].

We aimed to report diagnostic aspects, emergency management of obstructive colon cancers.

PATIENTS AND METHODS

We conducted a 7- year retrospective and descriptive study, from January 2018 to December 2024 in the Department of digestive and proctological surgery and in the Department of surgical emergencies at the University Teaching Hospital of Treichville. Patients in our study were operated for obstructive colon cancer, histologically confirmed. The studied parameters were age, sex, history, clinical and paraclinical examination data, treatment and postoperative evolution.

RESULTS

Patients' characteristics

- **Epidemiological data:**

There were 22 patients with an average incidence of 3 cases/year (range 1 to 5 cases/year); ((2018 (n=5); 2019 (n=1); 2020 (n=1); 2021 (n=3); 2022 (n=4); 2023 (n=5); 2024 (n=3)).

There were 13 men and 9 women, a sex ratio of 1.5. The average age was 53 years±15 years (range: 27 years and 76 years).

- **Clinical data:**

Concerning the history/background, three patients (13.6%) had a personal history of cancer (colon n=2, breast n=1). Five patients (22.7%) were being followed for colon cancer (right colon n=02; left colon n=3). Seventeen other patients (77.3%) were not aware that they had cancer. Five of them had been operated on for acute appendicitis. No family history of cancer was observed in our patients.

The clinical feature was that of acute intestinal obstruction with progressive onset with a mean duration of 21.6 days (4 days to 3 months).

The general signs were anorexia, weight loss, and poor general condition (n=3), fever (n=2), and shock in 2 cases.

Functional signs of occlusion were present and variously associated. Abdominal pain predominated in 95.45% of cases (n = 21) (Table I).

Table I: Distribution of patients according to functional signs

Functional signs		n (22)	%
Abdominal pain		21	95,4
cessation of faeces and gas	complete	16	72,7
	incomplete	02	09,1
vomiting		15	68,2
Abdominal bloating		7	31,8
rectal bleeding		3	20

On physical examination, abdominal meteorism associated with tympanism was found in our 22 patients (100%) (Table II).

Table II: Distribution of patients according to physical signs

Physical Signs	n (22)	%
abdominal meteorism	22	100
Abdominal tympanism	22	100
Provoked abdominal pain	21	95,4
Laparotomy scar	7	31,8
Mass at the FID	4	18,2
Mass at FIG	1	06,3
Epigastric mass	1	06,3
State of shock	2	06,3
Abdominal defense	1	06,3

- **Paraclinical data for diagnostic purposes**

Abdominal CT scan was performed in 19/22 patients. It confirmed colonic tumor occlusion, mainly of sigmoid (n=5) and cecal (n=5) location (Table III).

Table III: Table showing the locations of colonic tumors on abdominal CT scan

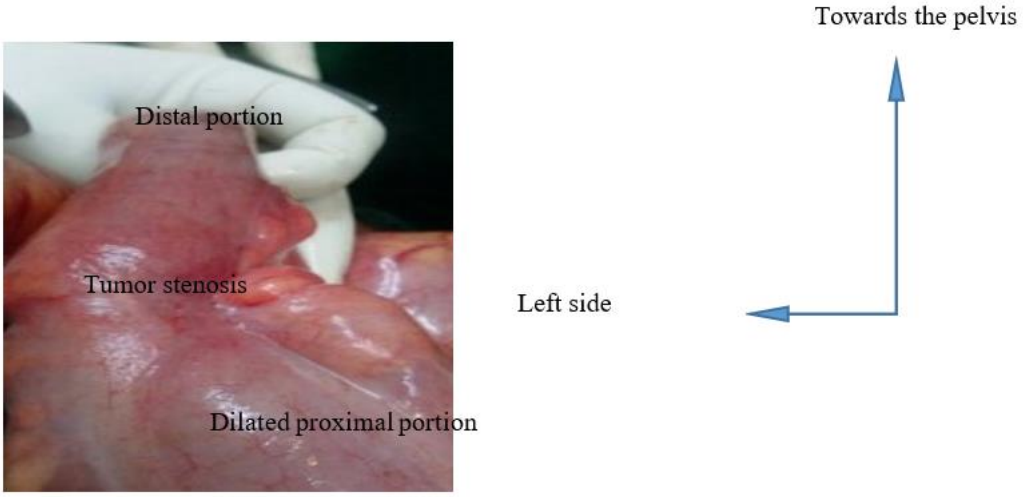
Abdominal CT tumor sites	n (19)	%
Sigmoids	05	26.3
Caecum	05	26.3
Descending colon	03	15.8

Ascending colon	03	15.8
Transverse colon	02	10.5
Sigmoid tumor recurrence	01	05.3

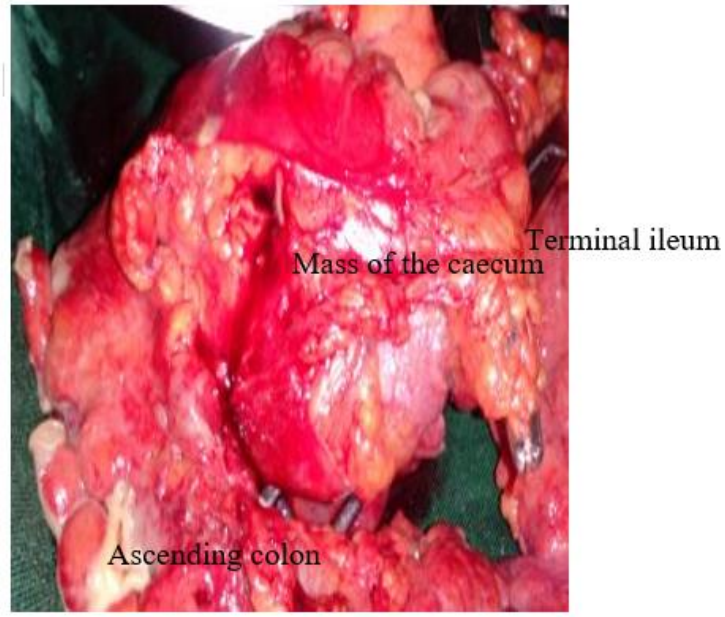
Concerning the evolutionary stage, the extension assessment showed on the scanner a T4 tumor with adenopathies in 14 cases and T3 with adenopathies in 5 cases. Hepatic (n=4) and pulmonary (n=2) metastasis were noted.

- **Intraoperative findings and therapeutic modalities:**

In our context, the supra and infra umbilical midline laparotomy was the approach. It confirmed the tumoral colonic occlusion (Pictures: 1 & 2).



Picture 1: Intraoperative image showing an occluded sigmoid tumor



Picture 2: Right hemicolectomy piece for occluded caecum tumor

The majority site was sigmoid in 9/22 cases (40.9%) followed by the caecun in 5/22 cases (22.7%) (Table IV). In 59.1% of cases, the tumor was located in the left colon (n = 13) and in 40.9% cases in the right colon (n = 9). In one case, a diastatic perforation of the transverse and caecun was associated with a sigmoid tumor. Sixteen patients had mesenteric adenopathies. Seven others had hepatic nodules.

Table IV: Table showing the sites of colonic tumors during surgery

Intraoperative sites of colonic tumors	n (22)	%
Sigmoids	09	40.9
Caecum	05	22.7
Descending colon	03	13.6
Ascending colon	03	13.6
Transverse colon	02	09.1
Right colon	09	40.9
Left colon	13	59.1

The surgical procedures performed intraoperatively were based on the location, tumor extension and its resectability. Thus, in 90.9% of cases, tumor excision was performed (20/22) and in 09.1% of cases (2/22) a simple diversion (colostomy) was performed. Immediate resection-anastomosis was performed in 10 cases and resection-stomy in 10 other cases. Table V summarizes the different therapeutic modalities that were performed.

Table V: Table showing the surgical procedures performed intraoperatively

Surgical procedures performed	n	%
Right hemicolectomy + ileostomy	04	18.2
Right hemicolectomy + ileotransverse anastomosis	05	22.7
Left segmental colectomy + colostomy/Hartmann	04	18.2
Left hemicolectomy + anastomosis	03	13.6
Left segmental colectomy + anastomosis	02	09.1
Left hemicolectomy + colostomy/Bouilly Volkmann	01	04.5
Simple colostomy (Transverse n=1; sigmoid n=1)	02	09.1
Subtotal colectomy + ileostomy	01	04.5
TOTAL	22	100

➢ **Histological data of the surgical specimens:**

The histological analysis of the surgical specimens showed adenocarcinoma in all our patients, mainly pT4N1Mx (n=9) and pT3NxMx (n=7) (Table VI).

Table VI: Distribution of patients according to histological type

Histological types	n	%
pT4N1Mx	09	40.9
pT3NxMx	07	31.8
pT4N1M1	02	9.1
pT4N0Mx	02	9.1
Pt2NxMx	02	9.1

➢ **Postoperative evolution data:**

The postoperative evolution was simple in 11/22 cases (50%) and complicated in 11/22 other patients (50%). These included parietal suppuration in 4 cases treated with local care, one case of directed digestive fistula treated medically, respiratory distress in 4 cases, stomal necrosis in 1 case and one case of postoperative peritonitis by fistula of an ileostomy which required surgical revision. There were 6 deaths (27.3%) for suppuration and septicemia in 2 cases, postoperative hemodynamic instability in 2 cases and respiratory distress in 2 other cases.

The average stay was 13 days with extremes of 08 days and 34 days.

DISCUSSION

22 cases of obstructive colon cancer were colliged over 7 years with an average incidence of 3 cases/year (range 1 to 5 cases/year. (Diémé «*et al.*,» 2019) in Senegal had noted 37 cases over 7 years complicating 14.9% of colorectal cancers [7]. (Ba «*et al.*,» 2017) in Senegal had observed 20 cases in 6 years [3]. A previous study of the service conducted by (Kouadio «*et al.*,» 2003) had recorded 21 cases in 18 years. A study by (Rault «*et al.*,» 2005) in France, noted 22 (6.3%) cases of obstructive colon cancer occurring in 6 years'period [5].

people aged around 50 years are mostly affected as highlighted in most of the series [1-8], that aligned with our study.

We noted a male predominance (13 men/9 women: sex ratio of 1.5). In literature,the disease incidence related to sex was differently appreciated by authors. Diémé, Konaté, Bolenga and Kouadio noted a male predominance [1; 4; 6; 8]. In the opposite, Rault and Ba found a female predominance in their different series [3; 5]. (Mege «*et al.*,» 2019) did not observe a predominance of sex in a multicentric study concerning 1500 cases of occluded left colon cancer conducted in France [9].

From a diagnostic point of view, clinical picture was mostly an acute intestinal obstruction with a progressive onset mean period of 21.6 days, ranging from 4 days to 3 months. (Bounaim «*et al.*,» 2008) in Morocco noted a presentation mean of 5 days ranging from 2 to 12 days [2]. (Ba «*et al.*,» 2017) in Senegal revealed a mean presentation period of 7 days (3 days-21 days) [3]. In our study, most patients presented late when symptoms got worse.

If clinical diagnosis of obstruction on a colon neoplasia was accurate in 5 patients already followed up, in contrary, that was not the case in 17 patients. Alert Functional signs were abdominal pain in 22 (95.45%) cases, followed by a complete cessation of intestinal transit in 16 cases (72,7%) and incomplete in 2 cases; and vomiting in 68.2% of cases (15/22). The physical examination found abdominal meteorism and tympanism in 22 cases (%). These signs, which are those of a colon obstruction, were pointed out as warning signs in patients between 40 and 60 years, according to studies by Kouadio, Diémé, and Bounaim [2, 6, 7].

The radiological diagnosis of obstructive colon tumors was based on an abdominal CT scan showing hydro-aeric images of colon obstruction and the location of the tumor. In our case, a CT scan was performed and confirmed a tumor-related colon obstruction in 19 patients with a majority of the tumor located in the sigmoid in 5 cases (26.3%). (Diémé «*et al.*,» 2019) in Senegal performed an abdominal CT scan in 32/37 (86%) of their patients; and which confirmed the diagnosis in 71% of cases (n = 23) [7]. (Bounaim «*et al.*,,» 2008) in Morocco performed the abdominal CT scan in 11/18 cases (91%) with an accuracy of the preoperative diagnosis in 10 cases [2]. In contrast, in the study by (Kouadio «*et al.*,» 2003) in Ivory Coast, the CT scan was not performed in 20/21 patients [6]. The preoperative diagnosis of tumor occlusion was not known. This should prompt an abdominal scan to be performed in the presence of clinical signs of obstruction in elderly patients to confirm the preoperative diagnosis.

In our study, laparotomy confirmed obstructive colon tumor mostly located in the sigmoid location in 9/22 cases (40.9%) followed by the caecum in 5/22 cases (22.7%). left colon was affected by tumor in 59.1% (n=13) and the right colon in 40.9% (n = 9). This predominance of neoplastic colonic occlusion in the left colon and in particular the sigmoid, was revealed by most of the authors [2, 3, 5-7]. Approximately one-third of patients with colorectal cancer had emergent symptoms, and emergency surgery was associated with a high postoperative mortality rate and poor survival.

Emergency management of cancer-related colon obstructions should be adapted to the tumor location, stage, patient's general performance status, and the surgeon's experience [10]. According to (Rault «*et al.*,» 2005), the optimal treatment of obstructive colon cancer remains controversial. Some authors favored one-step surgery, others more steps surgery [5]. While tumor resection as a first-line procedure remains appropriate, the therapeutic modalities are diverse [1-10]. 90.9% of patients were beneficial of tumor resection (20/22), and in 2/22, a lateral colostomy was performed close to the upstream end. Immediate resection-anastomosis was performed in 10 cases and resection-stomy in another 10 cases. In the study by Ba, Diémé, Rault, and Mege [3, 5, 7, 9], the most commonly used procedure was a one-step excision surgery. In the series of Kouadio and Bounaim, two-step surgery was the most commonly performed [3, 6]. In the literature, other therapeutic modalities such as an internal diversion, a colon stent, colostomy or prior ileostomy in a palliative context, and a subtotal colectomy were performed [2, 3, 7-10].

Histological exam of the surgical specimen confirmed the neoplastic origin. In the literature [1-10], adenocarcinoma predominated in almost all of them, as in our series, with a majority pT4N1Mx (n=9) and pT3NxMx (n=7).

CONCLUSION

Colon obstruction represents a frequent but revealing complication of colon cancers in the elderly. Diagnosis of preoperative neoplastic colon obstruction can be made in the majority of cases through an abdominal CT scan and confirmed by the histologic exam of the surgical specimen. One- or two-step excision surgery remains the first-line treatment versus a diverting stomia, which should be performed.

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