

# Sigmoid Volvulus; Study of 50 Observations at the Sino-Guinean Friendship Hospital

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**Abstract:** The aim of this study was to report our experience on the management of volvulus of the sigmoid colon in our service. Sigmoid volvulus is the twisting of the sigmoid colon around its mesocolic axis. It covered 50 files of patients operated on and hospitalized in the surgery department. Were included in our study all patients operated, hospitalized with well-filled medical records. Patients whose records showed abnormalities were not included in the study. The sex ratio of nearly 3.16 reflected a clear male predominance of the condition. The most affected age group was 35 to 44 years old, i.e. 12 cases with 24 percent. The average age was 28.61 years with extremes of 25 years and 95 years. In our series the farmers were the most affected in 22 cases. According to the history, we noted chronic constipation in 86 percent followed by high blood pressure in 11 cases. We also noted diabetes in 5 patients, tuberculosis in one patient and surgical history in 18 cases. On the clinical level, we noted the arrest of matter and gas in 48 patients, abdominal pain in 47 patients and vomiting in 38 patients. During surgery, 2 rounds were noted in 29 patients, 1 round in 17 patients and more than 2 rounds in 4 patients. The postoperative course was simple in 38 patients and complicated by parietal suppuration in 4 patients. Unfortunately we had noted 8 cases of death. The volvulus of the sigmoid colon is a formidable surgical emergency, the management is medico-surgical.

**Keywords:** Sigmoid, Volvulus, Friendship, Hospital Sino Guinean

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## 1. Introduction

Sigmoid colon volvulus is a condition characterized by twisting of the large intestine on its mesenteric axis, causing bowel obstruction that can lead to ischemia and perforation if unrecognized [1–4]. It can involve each segment of the large intestine; however, the sigmoid colon is most often affected (60 to 75% of cases) [5].

It represents 2% to 5% of colonic obstructions in Western countries and 20% to 50% of obstructions in Eastern countries. Countries in Africa, Asia, the Middle East, South America, Eastern and Northern Europe, as well as Turkey, are endemic regions for SV. The community incidence of SV in the United

States is 1.67 per 100,000 people per year [4, 6, 7].

It is a well-known clinical entity in twists of the sigmoid colon around its mesentery. It is seen more frequently in older people, but it can occur in young adults and children [8, 9].

In the younger population, sigmoid volvulus is more often associated with megacolon and its etiologies, most commonly Hirschsprung's disease or Chagas' disease. In children, the age of presentation can vary from 4 years to 18 years, more frequently in boys. Symptoms can be acute or chronic and usually manifest as abdominal pain, distension, and vomiting.

Without treatment, it progresses to necrosis of the sigmoid colon and generalized peritonitis. It is a surgical emergency with an overall mortality rate of 20%. The prognosis depends

on the time to treatment [10].

The therapeutic attitude to adopt in an emergency is controversial and calls upon various techniques which have evolved over the last few years. Emergency endoscopic treatment, if available, is becoming increasingly important to allow cold surgery [11].

In Burkina Faso, Kambiré JL and Col in their study in 2021, volvulus of the sigmoid colon represented 28.6% of the causes of colonic occlusion [12].

In Chad, Ouchemi C et al in their study in 2015, they represented 9% [13].

In Mali, Tereta F in her doctoral thesis in medicine in 2020? sigmoid volvulus accounted for 13.75% of bowel obstructions [14].

In Guinea: Abdoulaye D in his doctoral thesis in 2020 had collected 2807 cases of surgical pathology, 87 cases of pelvic colon volvulus, or 3.10% [15].

The complexity of the management of sigmoid volvulus and the lack of study in the visceral surgery department of the Sino-Guinean friendship hospital of Kipé motivated the choice of this research theme.

## 2. Material and Method

The department of visceral surgery of HASGUI served as a framework for the realization of this study. It is a service with triple vocations, namely care, teaching and research.

The consultation registers, patient files, operating report registers and survey sheets served as supports for the realization of this work.

We had carried out a descriptive retrospective study lasting 10 years from January 1, 2012 to December 31, 2021 inclusively.

It focused on the records of patients who were received in the service during the study period.

She compiled the records of patients diagnosed with volvulus of the sigmoid colon.

Were included in the study all patients operated for volvulus of the sigmoid colon associated or not with other pathologies or with any other form of intestinal obstruction and whatever the stage of evolution, Were not included in the study: Cases of volvulus other than sigmoid, All other forms of isolated intestinal obstruction. Incomplete records.

The study variables were clinical and paraclinical.

## 3. Results

The sex ratio of nearly 3.16 reflected a clear male predominance of the condition.

The most affected age group was 35-44 years, i.e. 24 percent.

The average age was 28.64 years with extremes of 25 to 95 years.

In our series, farmers were the most affected at 44 percent.

According to the history, we noted chronic constipation in 86 percent, followed by high blood pressure in 22 percent. However, we noted diabetes in 5 patients, tuberculosis in one

case and surgical scars in 12 patients.

**Table 1.** Distribution of patient according to the reason of consultation.

Reason of consultation	Effectif	Percentage
Stopping of materials and gases	48	96,00
constipation	49	98,00
Abdominal pain	47	94,00
Vomiting	38	76,00
Others	14	28,00

**Table 2.** Distribution of patients according to the number of sigmoid turns.

Number of sigmoid turns	Effectif	Pourcentage
2 turn	29	58,00
1 turns	17	34,00
More than 2 turns	4	8,00
TOTAL	50	100,00

Surgical treatment consisted of resection followed by Hartmann colostomy in 42 patients and walkman bouli colostomy in 8 patients followed by restoration of continuity after 45 days.

These techniques consisted for us of safety for the patient and the surgeon.

**Table 3.** Distribution of patients according to postoperative course.

Post operative course	Effectif	Pourcentage
Death	8	16,00
Simple	38	76,00
Parietal Suppuration	4	8,00
TOTAL	50	100,00



**Figure 1.** Sigmoid Volvulus with 2 turns.

## 5. Comments

Out of a total of 312 intestinal obstructions, we collected 50 cases of volvulus of the sigmoid colon operated and hospitalized in the visceral surgery department between 2012 and 2021.

Abdoulaye D in his doctoral thesis on 2807 cases of surgical pathologies between 2015 and 2019, sigmoid colon volvulus represented 87 cases or 3.10% [15].

In our series, the most affected age group was between 35

and 44 years old (12 cases), i.e. 24%. The average age was 28.61 years, with extremes of 25 and 95 years.

Our results are comparable to those of Choua Ouchemi *et al.* and Ba P *et al.* who had respectively found average ages of 48.9 years with extremes of (17 years and 86 years) and 45 years with extremes (22 years and 89 years) [14, 8].

This would be explained by the fact that in developing countries where the diet is rich in fiber, this pathology would mainly affect middle-aged adults.

In our study, we observed a male predominance (76%) with a ratio of 3.16.

Our results are identical to those of Traoré D *et al.*, Soumah SA *et al.*, Choua O *et al.*, who reported that men represented respectively 92.7%, 86.96% and 96.9%, i.e. a sex ratio of 12.7; 6.66 and 32 [12, 13, 14].

This male predominance could be explained by the fact that the maximum width of the mesosigmoid (C4) and the length of the root of the mesosigmoid (C2) are greater in women than in men ( $p < 0.05$ ) and the narrowness of the human pelvis which offers no chance of spontaneous reduction in the event of torsion [29].

Constipation was the most represented (98%).

Our data are comparable to those of Soumah SA *et al.*, in their study, who noted a notion of chronic constipation in all cases and the presence dolichosigmoid in 17.39% of cases ( $n=4$ ) [23].

In our study, the symptomatology was dominated by abdominal pain (94%), cessation of matter and gas (96%), asymmetric abdominal distension (76%) and late vomiting (76%).

In the literature, the symptomatology associates a low occlusive syndrome (early cessation of matter and gas, asymmetric meteorism and late vomiting), acute abdominal pain and vacuity of the rectum. The search for signs of seriousness (fever, collapse, abdominal contracture, traces of blood on digital rectal examination) is essential [16-18, 23].

The average consultation time was 8.5 days with extremes of 02 to 15 days.

Our result is superior to that of Abdoulaye D in his doctoral thesis in Guinea who found an average duration of consultation of 3.5 days with extremes of 01 to 15 days [15].

On the other hand, Togo A. *et al.* in Mali reported an average duration of evolution of 2.5 days with extremes of 1 to 3 days [11].

This difference could be explained by the fact that there more of our patients would consult in the periphery as soon as the symptoms occur, this results in a delay in the diagnosis of pelvic colon volvulus.

All of our patients benefited from an abdomen without preparation (ASP) which showed a double-legged arch image.

Traore D and Col. In Mali found that 100% of their patients had performed an abdomen without preparation (ASP) which showed air fluid levels higher than wide in 75.6% (31/41), air fluid levels in double leg in 9.8% (4/41) in favor of a colonic occlusion, fluid-aeric levels wider than high in 7.3% (3/41) and mixed levels in 7.3% (3/41) [12].

In the study by Choua O. *et al.*, in Chad, 72.5% of patients

had received an ASP highlighting a double-leg arch or an “inverted U” aspect [14].

During our study, 62% of our patients had a necrotic sigmoid loop against 38% who had a viable sigmoid loop.

Our results are different from those of Traoré D and Col [12], who found 16.7% necrosis of the sigmoid loop and comparable to those of Sani and Col, who reported 41.1% necrosis sigmoid loop.

The strangulation mechanism and/or the prolonged delay in consultation favor the occurrence of complications, quickly exposing the patient to the risk of irreversible ischemia and progressing to necrosis and intestinal perforation with stercoral peritonitis.

This is why, if the patient presents serious clinical or radiological signs, he must be operated on urgently [18].

After the resuscitation period carried out in 100% of the patients, all the patients were operated on. No patient benefited from endoscopic detorsion. All patients underwent immediate resection anastomosis.

Our results differ from Abdoulaye D in his doctoral thesis in Guinea where single-stage colectomy was performed the most (67.65%) versus two-stage colectomy (12.35%) [15].

During our study, the postoperative course was simple in 38 of our patients, i.e. 76%.

Our results are comparable to those of Abdoulaye D in his doctoral thesis in Guinea who reported that the postoperative course was simple in 58 patients, i.e. 85.29%.

It should be noted that we had recorded 08 cases of death, i.e. 16%, of which 03 patients were older with a consultation period of more than 10 days.

Septic shock was the most represented cause: 06 patients.

The sigmoid colon was spiral in 2 turns in 29 patients or 58% of cases.

## 6. Conclusion

Volvulus of the sigmoid colon is a medico-surgical emergency, the diagnosis is medical and paramedical. The treatment is medico-surgical. The prognosis is often good.

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