

# Intestinal volvulus at St Francis Hospital, Kampala.

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**Keywords:** Intestinal, sigmoid, colon, caecal, sigmoid, volvulus.

**A review of sixty patients with intestinal volvulus was undertaken at St Francis Hospital, Nsambya, Kampala. Forty three (71.7%) of the patients presented with sigmoid volvulus while 12 (20%) had ileosigmoid knotting. There were 53 males and seven females. The ages of sigmoid volvulus patients ranged between 20-87 years while for ileosigmoid knotting the range was 22-75 years with a mean of 41 years. The majority (53.5%) of the patients belonged to the Ganda tribe and were of low social-economic class. Resection and primary anastomosis was performed in 24 (56%) of the 43 patients who presented with sigmoid volvulus. Two patients died following resection and primary anastomosis but both cases had presented with gangrenous bowel. Only one of the 12 patients with ileosigmoid knotting died. Resection and primary anastomosis is a generally safe procedure in the management of sigmoid volvulus. However, it should be avoided in cases of gangrenous sigmoid volvulus.**

## Introduction

Volvulus is an important and common cause of intestinal obstruction in Africa. It is particularly common in East and Central Africa. In Uganda, volvulus accounts for 10-28% of cases of intestinal obstruction while in Mozambique the corresponding figure is 90%<sup>1,2,3,4</sup>. The distribution of the various types of volvulus differs throughout Africa. In South

Africa and Nigeria, small bowel volvulus is commoner than sigmoid volvulus whereas in Uganda, Ethiopia, Zimbabwe and Ghana, sigmoid volvulus is more frequently seen<sup>5</sup>. Odonga<sup>6</sup> and Namuyuga and Kakande<sup>7</sup> respectively found that sigmoid volvulus accounted for 87.8% and 77.3% of all cases of intestinal volvulus seen at Mulago Hospital in Uganda.

Volvulus of the small bowel usually occurs in the lower ileum and is usually predisposed to by the presence of adhesions and bands passing from the antimesenteric border of an intestinal loop to the parietes or to the female pelvic organs.

The objective of this study was to analyse the clinical types, presentation and outcome of management of intestinal volvulus cases seen at St. Francis Hospital, Nsambya in Kampala, Uganda.

## Patients and methods

The data analysed in this review was obtained from the clinical and operative records of patients with intestinal volvulus treated at St. Francis Hospital, Nsambya, a Mission Hospital in Kampala. The charts were studied for the patient's age, sex, tribe, occupation, clinical presentation, operative procedure and the outcome of treatment. The findings are presented.

## Results

Sixty patients with intestinal volvulus were included in this study. Males constituted 88.3% of the cases.

By far the commonest variety was the sigmoid volvulus (71.7%) followed by ileosigmoid knotting encountered in 12 patients (20%). Four cases (6.7%) of small bowel volvulus were encountered. One 29-year-old female presented with an ileocaecal volvulus.

The ages of patients with sigmoid volvulus ranged between 20-87 years with a mean of 45.2 years and a peak in the 30-39 years age group. Patients with ileosigmoid knotting were aged between 22-75 years with a mean of 41 years (Table 1). Small bowel volvulus patients were aged 19, 21, 22 and 75 years (mean 34.3 years).

**Table 1** Age distribution by variety of volvulus

Age in years	Type of volvulus			Total No.	%
	Sigmoid	Ileosigmoid	Others		
10-19	-	-	1	1	1.7
20-29	5	5	1	11	18.3
30-39	14	-	-	14	23.3
40-49	7	1	1	9	15.0
50-59	5	5	1	11	18.3
60-69	5	-	1	6	10.0
70-79	5	1	-	6	10.0
80+	2	-	-	2	3.4
<b>TOTAL</b>	<b>43</b>	<b>12</b>	<b>5</b>	<b>60</b>	<b>100</b>
Range	20-87	22-75	19-75	19-87	
Mean age	45.2	41	33.2		

**Table 2** Tribal distribution

Tribe	No of patients	%
Ganda	32	53.3
Soga / Gisu	5	8.3
Atesot	4	6.7
Lugbara	2	3.3
Ankole	2	3.3
Others (1 per tribe)	15	25.1
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The Ganda tribe accounted for 24 (55.8%) of sigmoid volvulus cases and 7 of the ileosigmoid knotting patients (Table 2). Bantu ethnic tribes accounted for 78.3% of cases while the Nilotics comprised only 11.7% of all patients with intestinal volvulus.

The patient's occupation was recorded in 60 of the patients. Of these, 13 (21.7%) were farmers, 8 (13.3%) were small businessmen, while 7 (11.7%) described themselves as peasants. The majority of the patients were non-professionals and belonged to the low socioeconomic class (Table 3).

**Table 3** Occupation

Type of occupation	No of patients	%
Peasant / farmer	20	33.4
Business	8	13.3
Builder	3	5.0
Driver	3	5.0
Policeman	2	3.3
Butcher	2	3.3
Student	2	3.3
Engineer	1	3.3
Teacher	1	3.3
Technician	1	3.3
Pastor	1	3.3
Others	7	11.7
Not recorded	6	10.0
<b>TOTAL</b>	<b>60</b>	<b>100</b>

The average duration of symptoms prior to admission was 3 days for sigmoid volvulus, 2.1 days for ileosigmoid knotting, and 1.7 days for small bowel volvulus. The patient with ileocaecal volvulus had had symptoms for 3 weeks prior to admission. Thirty patients presented with a recurrent volvulus. One patient had had three previous attacks while two reported two previous episodes. Only two patients were admitted on appointment for elective sigmoid colectomy.

Seven patients (16.3%) had a gangrenous sigmoid volvulus. Among the twelve patients with ileosigmoid knotting, one had a viable ileum, seven had gangrenous ileum only while four had gangrene of both the ileum and sigmoid colon.

Nine patients (20.9%) had sigmoidoscopy and deflation. One of these had recurrence on the second postoperative day for which he had a sigmoid colectomy and primary anastomosis.

Three other patients had a resection and anastomosis on the 3rd, 5th, and 7th day after the initial sigmoidoscopy and deflation. Resection and primary anastomosis was performed in 24 (55.8%) of the patients with sigmoid volvulus while 6 (14%) had resection and colostomy.

There were three deaths, a 5% mortality rate. Two patients with gangrenous sigmoid volvulus both died on the 3rd postoperative day after resection and primary anastomosis. One patient with gangrenous ileosigmoid knotting died on the 11th day following resection and colostomy.

Among the patients who survived, only two had postoperative complications. These were prolonged paralytic ileus (one case) and early adhesions which resulted in intestinal obstruction. The overall hospital stay for sigmoid volvulus was 11.4 days. For resection and primary anastomosis, the duration ranged between 4 and 21 days with a mean of 11.2 days. In cases of initial sigmoidoscopy and deflation, the hospitalization period was 12-21 days with an average of 16.3 days.

## Discussion

Although the cause of intestinal volvulus is not well known, this condition results from axial rotation

**Table 4** Operative procedures performed

Procedure	No of patients	%
Laparotomy and derotation only	4	9.3
Resection and colostomy	6	14.0
Sigmoidoscopy and deflation	9	20.9
Resection and primary anastomosis	24	55.8
<b>TOTAL</b>	<b>43</b>	<b>100</b>

of part of the alimentary tract. Volvulus of the colon requires the presence of a redundant colon with a narrow mesentery at its base and distension with flatus. Volvulus almost never develops when the colon is filled with solid stool<sup>8</sup>.

In Uganda intestinal volvulus is the second commonest cause of intestinal obstruction and has been on the increase during the past four decades<sup>1,2,3,6,9</sup>. Although a common cause of bowel obstruction in Africa and Asia, volvulus of the colon is uncommon in the United States where it accounts for only 3 percent of the cases of large bowel obstruction. In the USA sigmoid volvulus is the most common type, accounting for 90% of the cases of volvulus of the colon, with most patients being the elderly from institutions or nursing homes<sup>8</sup>.

In South America sigmoid volvulus is generally secondary to Chaga's disease, whereas that found in other parts of the world is mainly primary because the exact cause is unknown. The predisposing factors incriminated have included dietary, developmental and genetic ones. A high residue diet has been suggested<sup>10</sup>, but the physical effects of the residue may, by themselves, not be sufficient to explain the occurrence of the torsion. There is a possibility that some chemical constituents in the diet may play a part in altering the peristaltic movement which causes the volvulus. In Uganda, where the Baganda, Basoga and Bagisu tribes are mostly affected, the role of serotonin needs to be studied. Serotonin (5-hydroxytryptamine) is abundant in matooke, the local banana or plantain which forms their staple food<sup>11</sup>. Nilotics, who rarely eat bananas, least often suffer the condition.

Previous studies showed that ileosigmoid knotting accounts for 15-17% of the cases of volvulus

admitted to Mulago Hospital<sup>2,7</sup> compared to the 20% in our series. Other varieties of volvulus, including small bowel (ileo-ileal) or ileocaecal, neonatal and transverse colonic volvulus, are very rarely seen. Khada et al<sup>11</sup> reported that transverse colon volvulus constitutes only 1-3% of all colonic volvulus. Among the possible aetiologies they proposed are congenital malrotations of the gut, chronic constipation in the elderly enhanced by psychiatric medications and mechanical ones caused by adhesive bands which help to create anomalous rotation axes for volvulus. Recurrence of sigmoid volvulus is a common happening which ought to influence the choice of procedure to be performed. Most of our patients are poor and cannot afford to come back for interval sigmoid colectomy once the volvulus is reduced at sigmoidoscopy. It is for this reason that there is a tendency to perform resection and primary anastomosis. Our study has confirmed that, in the hands of competent and experienced surgeons, resection and primary anastomosis in sigmoid volvulus patients with viable bowel, is safe and does not necessarily result in increased risk or a longer hospital stay. When the bowel is gangrenous, it is safer to resect and leave a temporary colostomy. In cases of ileosigmoid knotting, the secret behind a successful outcome lies in early diagnosis and prompt and appropriate treatment.

## **Acknowledgement**

We are indebted to the Medical Superintendent of Nsambya Hospital for allowing us to use the Hospital records and to the records office staff for their assistance.

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