



## A CLINICAL STUDY ON SIGMOID VOLVULUS AND ITS VARIOUS METHODS OF MANAGEMENT

**Dr. Yeddula V Jayaramudu**

M.S. Department Of General Surgery, Santhiram Medical College, Nandyal

**Dr. Addepalli shyam sundar\***

Department Of General Surgery, Santhiram Medical College, Nandyal  
\*Corresponding Author

**ABSTRACT** This prospective study was conducted at Santhiram general hospital, nandyal from August 2016 to March 2019 and included 40 patients with sigmoid volvulus (33 males and 7 females), presented to emergency department more commonly with abdominal distention, constipation and abdominal pain. After thorough examination and investigation, these patients underwent different surgical procedures based on the clinical presentation and condition of the bowel seen intra-operatively (sigmoidopexy in 3, primary resection and end to end anastomosis in 31, hartmann's procedure in 6 patients). This study involves the clinical course and manifestations of sigmoid volvulus, and the out come of the disease by various methods of treatment in reducing the mortality rate in patients with sigmoid volvulus. And also we discussed the incidence, different clinical presentations, outcomes by different surgical procedures for sigmoid volvulus in comparison with other studies.

**KEYWORDS :** sigmoid volvulus, surgical management , outcome

### INTRODUCTION

Sigmoid volvulus is the most common form of volvulus of the gastrointestinal tract; it is responsible for 8% of all intestinal obstructions. Sigmoid volvulus is particularly common in elderly persons. Patients present with abdominal pain, distention, and absolute constipation. Predisposing factors to sigmoid volvulus include chronic constipation, megacolon, an excessively mobile colon, long mesocolon with narrow pedicle. It belongs to highly severe conditions, requiring a quick and correct diagnosis as well as immediate and effective therapy

### AIMS AND OBJECTIVES

- To study the clinical course and manifestations of sigmoid volvulus.
- To study the various methods of treatment of sigmoid volvulus.
- To study the outcome of the disease by employing various methods of treatment.

### METHODOLOGY

#### Source of Data

For the study, the patients admitted in emergency ward with acute large bowel obstruction due to sigmoid volvulus in all Surgical units of santhiram general Hospital between period of August 2016 to March 2019.

#### Inclusion Criteria

All the patients who are coming to emergency department at Santhiram General Hospital presenting with large bowel obstruction due to sigmoid volvulus.

#### Exclusion Criteria

- All large bowel obstruction other than sigmoid volvulus.
- Patients who absconded or expired before the surgery.

### RESULTS

In this series of 40 cases, all the patients who presented with distention of abdomen with acute symptoms, and diagnosed to have sigmoid volvulus were included in the study.

#### 1. Age distribution

Males are affected more than females, 33 and 7 cases respectively.

**Table - 1 Showing Age distribution of cases**

Age in years	No. of patients	Percentage
1-10	-	-
11-20	2	5%
21-30	5	12.5%
31-40	8	20%

41-50	10	25%
51-60	9	22.5%
61-70	5	12.5%
71-80	1	2.5%

It would appear that sigmoid volvulus occurs in most common age group of 41-50 years (25%). Next common age group affected is 51-60 years. This disease is very uncommon below the age of 20 years and above the 80 years.

#### 2. Sex distribution

The ratio of male and female is 4.7:1 in this study. Males (n=33, 82.5%) are affected more than females (n=7, 17.5%).

#### 2. Clinical presentation

**Table-2 Showing modes of presentation**

Symptoms	No. of patients	Percent
Pain in abdomen	30	75%
Distension of abdomen	40	100%
Constipation	37	92.5%
Vomiting	19	47.5%
Retention of urine	03	7.5%
Fever	01	2.5%

In the present study distention of the abdomen (100%) was the commonest symptom followed by constipation (92.5%) and pain abdomen (75%).

#### Showing physical findings

In present study abdomen distention (100%), dehydration (100%) are the commonest physical findings followed by abdominal tenderness (67.5%) and absence of bowels sounds (32.5%). Thirteen cases presented with features of peritonitis.

#### 4. Investigations :

X-ray erect abdomen was done in all cases. Most of the cases were diagnosed using X-ray only. CT scan was required additionally in 2 cases to aid in the treatment in doubtful cases which will show characteristic whorls, representing the twist in the mesentery. Ultrasound abdomen done to look for any co-morbidities like renal impairment, liver diseases, metastases in suspected malignancy cases that helped in planning for further treatment.

#### 5. Treatment

In this study all patients underwent emergency laparotomy and intra operative findings indicates that 18 patients had gangrene bowel, the bowel was viable in 22 patients, 19 of them underwent resection and

end to end anastomosis while sigmoidopexy was done in 3 patients. In group of resection and anastomosis one patient died when bowel was viable due to co-morbid conditions. In group of sigmoidopexy one patient died due to co-morbid conditions.

**Table - 3 Showing various types of surgery performed and outcome of the procedure**

Procedure	No. of patients	Viable bowel	Gangrenous sigmoid	percentage	cured	Expired
Sigmoidopexy	3	3	-	7.5%	2 (66.6%)	1 (33.3%)
Primary resection and end to end anastomosis	31	19	12	77.5%	28 (90.3%)	3 (9.6%)
Hartmann's procedure	6	-	6	15.0%	4 (66.6%)	2 (33.3%)

Among the patients (18) with gangrenous bowel 13 patients (72.2%) survived, 5 patients (27.7%) expired.

Among the patients with gangrenous bowel 12 patients underwent primary resection and end to end anastomosis 9 out of 12 patients survived giving a survival 75% while 3 patients expired (25%). 4 out of 6 patients who underwent Hartmann's procedure survived giving survival rate of 66.6% and 2 patients died (33.3%).

The overall survival rate is 85%, 6 (15%) patients died.

The duration of stay in the hospital was between 1 to 18 days with an average 12 days.

## DISCUSSION

Sigmoid volvulus is one of the common causes of large gut obstruction in developing countries. Sigmoid volvulus can present with almost same clinical picture with cardinal features like colicky pain abdomen, vomiting, distention and constipation and with different combinations of these features. Timely intervention and appropriate intensive care support may help improve the outcome of this condition and even can prevent death.

Present study conducted between August 2016 to March 2019 in the Department of Surgery, Santhiram General Hospital, a total 40 cases were analysed with regard to age, gender, presentation, different treatment procedures and outcome.

During the present study 40 cases of sigmoid volvulus were studied. This high incidence of sigmoid volvulus is due to irregular bowel habits, consumption of high fibre bulky diets which appear to overload the sigmoid colon and eventually rotate around its mesentery.

### Incidence of Sigmoid Volvulus in large bowel obstruction

In this study the incidence of sigmoid volvulus in large bowel obstruction is 50% which is comparable to study conducted by Echenique Elizondo M, Amondarain Arratibel JA in 2002 i.e. 52%. The small variation from other studies could be due to fact that our study contains comparatively less number of patients.

### Age incidence by various authors

In the present study the common age group was 41 to 50 years (25%). The mean age in our study was 45.3 years which is similar to study by De U et al and Khanna et al.

### Sex ratio by various Authors

The male to female ratio in patients with sigmoid volvulus is variable. But the review of the literature indicates that there is a general male preponderance and in females it is low because of wide pelvis. The present study M:F ratio (4.7:1) which is comparable to study conducted by Kisa P et al (5.3:1) and Rennie JA (5.6:1).

### Clinical presentation

Of all signs and symptoms presented by patients with sigmoid volvulus, abdominal distention (40), constipation (37), and colicky abdominal pain were the most predominant clinical features, often taken as cardinal signs and symptoms in the diagnosis of disease. Rebound tenderness and guarding are less manifested until the sigmoid loop is gangrenous enough to affect both the peritoneum and internal organs. Hence at the initial stage, the patient with sigmoid

volvulus may even appear more relaxed and less sick than somebody suffering from peritonitis due to other conditions. This could be definitely contributory factor for the late presentation of patients in hospitals.

## Treatment

The treatment of sigmoid volvulus has been varied. These variation depended on many factors, such as general health of the patient prior to the onset of the disease and co-morbid conditions. Condition at the time of operation, availability of ancillary help such as a blood, investigations facility, good anaesthesiologist, and individual expertise and experience of the surgeon. The fact that many operative procedure have been described in the treatment of sigmoid volvulus, would probably mean that no single operation is suitable in all patients or there is difference in the outlook of pattern of disease and co-morbid conditions.

There are two basic problems in management of the patients. That is a high incidence of recurrence of sigmoid volvulus after the commonly performed procedures such as rectal tube deflation, sigmoidoscopic deflation. Laparotomy and simple derotation, and operative derotation and fixation of the "omega loop" to the lateral or anterior abdominal wall or the transverse colon. High incidence of postoperative recurrence has been noted by Shepherd, Anderson JR, Lee D<sup>[1]</sup>.

Resection of the sigmoid colon almost prevents recurrence noted by Illness et al. Chakrabarty PB, Anderson JR and Lee<sup>[1]</sup>, Khanna AK et al<sup>[1]</sup>, Dulgaer M et al. Resection and end to end anastomosis as an emergency procedure, in an un prepared bowel, in conditions like that make the situation from ideal and in our under nourished patients has its own price in the increased morbidity and mortality.

### Derotation and fixation to abdominal wall

Diaz plasencia et al subjected 15.4% of patient for this treatment and found 100% cure rate. In our present study 7.5% patients underwent Derotation and fixation to abdominal wall procedure with 66.6% cure rate. Because of poor general condition, one patient expired.

### Primary sigmoid resection and end to end anastomosis

Diaz plasencia et al subjected 56.9% of patients for this treatment and found 87% cure rate and 13% mortality. In our present study 77% of patients underwent primary resection and end to end anastomosis with cure rate 90.3% and mortality 9.6%. All the 3 patients who died were having gangrenous bowel.

### Showing results of Hartmann's procedure comparing with other studies

Diaz plasencia et al subjected 28.7% of patients for this treatment and found 68.6% cure rate and 37.4% mortality. People's J.B et study 26.6% of patients were subjected to Hartmann's procedure 87% cure rate and 13% mortality. In Diaz plasencia J, RebazalparraguireeH study 58% of patients were subjected to Hartmann's procedure, 72% were cured and 28% mortality. In present study 15% of patients were subjected to Hartmann's procedure with cure rate of 66.6% and mortality in 33.3%

## CONCLUSION

The following conclusions can be drawn from the present study.

1. Sigmoid volvulus is more common in males than in females and highest incidence is in 4th and 5th decade of life. Sigmoid volvulus constituted 50% of the total large bowel obstruct
2. In viable bowel, primary resection and anastomosis of sigmoid volvulus is feasible even in unprepared bowel as this may not effect outcome.
3. X ray abdomen erect is enough in almost all cases to diagnose the sigmoid volvulus.
4. Most of the patients present acutely and therefore immediate resuscitation and surgical intervention will greatly improve survival.
5. Though the disease carries a high mortality, most of the patients who die are either elderly, have co-morbid conditions or both.

## REFERENCES

1. Anderson JR, Lee D. The management of acute sigmoid volvulus. Br J Surg 1981; 68: 117-20.

2. Anderson A, Berdhal, Vander Linden. Volvulus of Caecun, Analysis of Surgery, 1958; 187: 876-880.
3. AvotsAvotins, V. Karlis, Waugh, E. David. Colon volvulus and the geriatric patient, Surgical Clinics of North America, 1982; 62: No.2, 249-260.
4. Arnold GJ, Nance, FC. Volvulus of the sigmoid colon, Ann Surg. 1973;177:No.5,527-34.
5. Asbun H J, Castellanos H, Balderrama B et al. Sigmoid volvulus in the high altitude of the Andes. Review of 230 cases. Dis Colon Rectum. 1992 Apr; 35 (4):350-3.
6. Atamanalp SS, Yildirgan MI, Basoglu M et al. Sigmoid colon volvulus in children: review of 19 cases. Pediatr Surg Int. 2004 Jul; 20(7):492-5.