Research Article

Sigmoid volvulus and its management: a study of 38 cases

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Abstract

Background: Sigmoid volvulus is one of the commonest causes of distal colonic obstruction. Early diagnosis and early surgical intervention reduces mortality and morbidity. **Study design**: Case series. **Aim of the study**: To study the incidence of intestinal obstruction, age distribution, procedures adopted in the management and post operative outcome. **Methodology:** This prospective study was conducted upon 38 patients diagnosed with sigmoid volvulus in surgical unit of our institute from November 2008 – October 2010. **Results:** 38 patients were with sigmoid volvulus, initially treated conservatively by initially passing a flatus tube and soap and water enema. All the cases were operated of which three underwent Sigmoidopexy, three underwent exteriorization, one underwent Hartmann procedure and others underwent primary resection and anastomosis. Post operative period was uneventful but for 3 cases (7.9%) who had fatal outcome. Recurrence was nil up to 3 months of follow-up. **Conclusion:** Early intervention by primary resection and end-to-end anastomosis is superior to all other procedures and can be safely employed with satisfactory results.

Key words: Sigmoid volvulus, Sigmoidopexy, End-to-end anastomosis

Introduction

Volvulus of the bowel refers to a twisting or torsion of the intestine about its mesentery. The term volvulus, which may involve any segment of the intestinal tract from stomach to rectum, is a Latin word *(volvere)* [1] for twisted used by the Romans to signify this condition [2].

Volvulus of the sigmoid colon is one of the most common surgical emergencies seen in India. Ballantyne found that only 3.4% of 4766 cases of intestinal obstruction and 9.6% of 1206 cases of colonic obstruction in the United States were caused by sigmoid volvulus. The highest reported worldwide incidence was from northern Iran by Scott [3], who found sigmoid volvulus as the cause of 85% of colonic obstructions. Johnson [4] reported 13 cases of sigmoid volvulus in a series of 24 bowel obstructions from Ethiopia [4]. Increased frequency of sigmoid volvulus in Pakistan, India, Brazil and Eastern Europe also has been reported [5]. Volvulus also occurred with increased frequency in the Soviet Union. Most of the previously reported data is from the 1920s [6], in which more than 50% of cases of bowel obstruction were caused by volvulus, may not be accurate today because of changing epidemiologic and dietary factors [7].

The causes of this common condition have aroused keen interest from time to time due to the facts:

A) The mortality being very high

B) The method of treatment of this condition has always been debatable

To date various procedures have been advocated for its management such as passing of a flatus tube, detorsion, colopexy, exteriorization of the colon and its subsequent closure and sigmoidectomy with anastomosis.The conservative management of detorsion and colopexy have resulted in a high recurrence rate and the exteriorization procedure requires a long duration for a complete cure. With the advent of antibiotics, better anaesthetics colonic surgery is rendered less hazardous and is now a safer procedure.

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The primary resection of the colon and end to end anastomosis is the best treatment and superior to all other procedures, being a permanent paramount cure for this condition to date.

Methodology

Inclusion criteria: Patients with sigmoid volvulus
Exclusion criteria: Patients with sigmoid volvulus not willing for surgery
No. of patients: 38

All the patients (N=38) selected as per criteria from November 2008 – October 2010 were admitted in surgical unit of Mahatma Gandhi Memorial Hospital, Kakatiya medical College, Warangal, Telangana, India, after ethical committee approval and patient consent.

Results: In our institution 8632 patients were admitted in surgery unit between study period i.e. from November 2008-October 2010. Among them the number of cases of sigmoid volvulus was 38. (incidence 0.44%). The total numbers of intestinal obstruction were 575, of which sigmoid volvulus were 38. The sigmoid volvulus has an incidence of 6.1% among all cases of intestinal obstruction. Out of 38 patients 25 (65.79%) patients were male and 13 (34.21%) patients were females. The age range was from 13 years to 80 years volvulus noted with highest incidence of sigmoid volvulus is more in middle age with mean age of 40-45 years.

Table-1: Age incidence.

Age	Present series
0 – 10 yrs	Nil
11 – 20 yrs	2 (5.26%)
21 – 30 yrs	9 (23.68%)
31 – 40 yrs	4 (10.52%)
41 – 50 yrs	13 (34.24%)
51 – 60 yrs	4 (10.52%)
> 60 yrs	6 (15.78%)

Most common clinical feature at the time of presentation were distention of abdomen, pain abdomen, vomiting, constipation. Majority of patients reported 3-4 days after the onset of symptoms. Earliest was one day, longest was 6 days.

Table-2: Presenting symptoms.

Symptoms	Present Series
Abdominal Pain	38 (100%)
Distension of Abdomen	38 (100%)
Constipation	38 (100%)
Vomiting	07 (16.6%)

Table-3: Procedures adopted in the treatment of sigmoid volvulus.

Type of procedure	Present series
Conservative	Nil
Derotation and sigmoidopexy	03 (7.9%)
Primary Resection and end to end anastomosis	31 (81.57%)
Hartmann's procedure	01 (2.63%)
Exteriorization	03 (7.9%)

In this series, most of the cases were initially treated conservatively by initially passing a flatus tube and soap water enema. Patients suspected to have a non-viable bowel, recurrence, in whom conservative measures have failed required operative reduction of the volvulus and primary resection with end to end anastomosis under general anesthesia. Patients with viable bowel had normal electrolyte levels and most of them were between 40 – 50 yrs of age, who were able to withstand the long procedure.

The other modalities of treatment i.e. derotation and sigmoidopexy (n=3) and Exteriorization (n=3) were used in some patients in whom the resection and anastomosis could not be attempted. Hartmann's procedure was done in one patient as the gangrene was extending down to the pelvi-rectal junction. Elective resection was not attempted in any of these cases.

Postoperative management: Patients were given intravenous fluids, intravenous antibiotics and blood transfusion done wherever necessary. The drain was removed on 4th post operative day in most of the patients. Majority of them had passed motion by 3rd or 4th day. Suture removal was done by 8th to 10th day and later the patient was discharged. The average duration of stay at the hospital has been 12 – 14 days. Post operative complications: The post operative period of majority of the patients was uneventful. Wound infection has been observed in around 16% of the patients (n=6). These were treated conservatively and secondary suturing done after the local condition of the patient improved.

Discussion

The incidence of intestinal obstruction due to sigmoid volvulus in our study is 6.6% (38/575). The age incidence of sigmoid volvulus is more in middle age with mean age of 45-50 which is similar to R.H. Sinha series [8].Various case series have observed that the incidence of sigmoid volvulus is more in males than in females [8][9]. In the present case series, the ratio was found to be 2:1.

Majority of patients reported 3-4 days after the onset of symptoms. Earliest was reported one day after the symptoms and longest was six days after the symptoms.

Tenderness of abdomen was diffuse in most of the cases (n=34, 89.47%) while 4 patients had (10.52%) localized tenderness in left side of the abdomen.

History of similar complaints in the past was obtained from 5 patients (13.16%) among the 38 patients [10].

All the 38 patients (100%) had a long mesocolon at laparotomy. 25 patients (66%) had a viable bowel, while 13 patients (34%) had gangrenous bowel.

Three patients (7.9%) went into irreversible shock post operatively and expired. 35 (92.10%) of them had been discharged from the hospital and have been under follow up till 3 months after the operation.

Conclusion: Primary resection and End-to-End anastomosis is a single stage operation and was most suitable in all cases with viable bowel and selected cases of non-viable bowel.

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References

1. Schakelford's Surgery of the Alimentary tract, 7th Edition:1850-55.

2. Raveenthiran V, Madiba TE, Atamanalp SS, De U. Volvulus of the sigmoid colon. Colorectal Dis. 2010 Jul; 12(7Online):e1-17. doi: 10.1111/j.1463-1318.2010. 02262.x. Epub 2010 Mar 10.

3. Scott GW. Volvulus of the sigmoid flexure. Dis Colon Rectum. 1965 Jan-Feb;8:30-4.

4. Johnson LP. Recent experience with sigmoid volvulus in Ethiopia; its incidence and management by primary resection. Ethiop Med J 1965; 4:197–204.

5. Ballantyne GH. Review of sigmoid volvulus. Clinical patterns and pathogenesis. Dis Colon Rectum. 1982 Nov-Dec;25(8):823-30.

6. Hilton HD, Waugh JM. Volvulus of the sigmoid colon. AMA Arch Surg. 1951 Mar;62(3):437-42.

7. Principles and Practice of Surgery for the Colon, Rectum, and Anus. Philip H. Gordon, 3rd Edition:29: 971-79.

8. Sinha RS. A clinical appraisal of volvulus of the pelvic colon with special reference to etiology and treatment. Br J Surg. 1969 Nov;56(11):838-40.

9. Anderson JR, Lee D. The management of acute sigmoid volvulus. Br J Surg. 1981 Feb;68(2):117-20.

10. Sutcliffe MM. Volvulus of the sigmoid colon. Br J Surg. 1968 Dec;55(12):903-10.

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