

# Acute twisted bowel - management by resection and primary anastomosis

Saumya<sup>1\*</sup>, Sharique Nizami<sup>2</sup>, Rajeev Kumar Shaw<sup>3</sup>, Saba Naz<sup>4</sup>

<sup>1</sup>PG. Student, <sup>2</sup>Assistant Professor, <sup>3</sup>Professor, <sup>4</sup>Junior Resident, Department of Surgery, M.G.M Medical College and L.S.K Hospital, Kishanganj, Bihar, INDIA.

Email: [saumyasingh203a@gmail.com](mailto:saumyasingh203a@gmail.com)

## Abstract

**Objective:** To evaluate the outcome of resection and Primary Anastomosis in cases of Acute Sigmoid Volvulus. **Methodology:** This study was conducted in the Department of Surgery, M.G.M Medical College and L.S.K. Hospital, Kishanganj, Bihar, from August 2014 to September 2016. It included total 48 cases and the diagnosis was based on clinical features and radiological signs in plain X-ray abdomen. Resection and Primary Anastomosis were done. Post operatively, the patient were under observation for 10-14 days and later follow up for 4 weeks. **Results:** The age of 48 cases with Acute Sigmoid Volvulus ranged from 25- 75 years and all patients were from low socioeconomic rural background. Exploratory Laparotomy confirmed Acute Sigmoid Volvulus in 42 cases and Ileosigmoid knotting in 6 cases. Post operatively (20%) cases developed superficial wound infection, (4%) pelvic abscess, (4%) anastomosis leakage. There was no mortality reported. **Conclusion:** Primary colonic anastomosis may be undertaken safely when the history is short and the remaining bowel is well vascularized and nondistended. It is a single stage procedure with good outcome in terms of low morbidity and mortality.

**Keywords:** Sigmoid Volvulus, Ileosigmoid knotting, Colonic resection and primary anastomosis.

## \*Address for Correspondence:

Dr. Saumya, PG. Student, Department of Surgery, M.G.M Medical College and L.S.K Hospital, Kishanganj, Bihar, INDIA.

Email: [saumyasingh203a@gmail.com](mailto:saumyasingh203a@gmail.com)

Received Date: 26/10/2016 Revised Date: 21/11/2016 Accepted Date: 18/12/2016

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| Quick Response Code:  | Website:<br><a href="http://www.statperson.com">www.statperson.com</a> |
|  | DOI: 04 January<br>2017  |

diagnosis is confirmed by plain x-ray Abdomen<sup>2</sup>. The x-ray films shows "tyre like" appearance or "Omega sign" or "coffee bean sign"<sup>3,4</sup>. In few cases like Ileosigmoid knotting [ISK], radiological finding shows double loop dilated sigmoid shadow and multiple air fluid levels in the small intestine<sup>5,6,7,8,9</sup>. CT scan can be used to confirm the diagnosis. The present study was conducted to evaluate the outcome of resection and primary anastomosis without colonic lavage in cases of acute sigmoid volvulus in terms of post-operative complications and hospital stay in our setup, where catchment area is predominantly rural and long term follow up is difficult.

## INTRODUCTION

Sigmoid volvulus is an abnormal rotation of a segment of bowel around its narrow mesentery causing obstruction of its lumen<sup>(1)</sup> and subsequently lead to strangulation or gangrene. Pre disposing factors includes long sigmoid loop with a narrow mesentery, chronic constipation, a high fiber diet, overloaded redundant pelvic colon, peridiverticulitis<sup>17,18,19</sup>. The presenting symptoms and signs of acute sigmoid volvulus include abdominal pain with distention, constipation and vomiting. Later symptoms like rebound tenderness, sepsis, dehydration, generalized peritonitis and shock appears. In 80% cases

## MATERIAL AND METHODS

This case study includes all patients admitted with acute sigmoid volvulus from August 2014 to September 2016 in the Department of Surgery, M.G.M Medical College and L.S.K Hospital, Kishanganj, Bihar. Total 48 patients with acute sigmoid volvulus were treated during this period. The diagnosis was based on clinical features and radiological signs in x-ray Abdomen. Investigation and resuscitation were done. All cases were put up for exploratory laparotomy. On exploration, diagnosis of

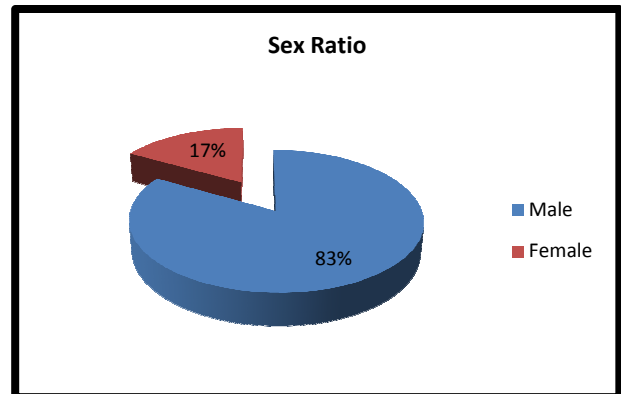
sigmoid volvulus was made and gut viability was assessed. Gut was derotated and deflated by using a 22 soft French flatus tube which was put per rectum. Resection of redundant gut irrespective of its viability followed by tension free primary anastomosis of the viable gut was done without any colonic lavage. In few cases of ISK, the gangrenous small gut was respected and end to end primary anastomosis was done after releasing the knot along with resection and primary anastomosis of sigmoid loop. Peritoneum toileting was done. Abdominal drain was placed in pelvis and abdomen was closed in layers. Post operatively the patient was under observation for 10-14 days and later follow up for 4 weeks after discharge to record any complication.

**RESULTS**

A total 48 patients came to our hospital with acute sigmoid volvulus during this study period. All patients were from low socio economic rural background. 40 patients were male and 8 patients were female. The age ranged from 25 to 75 years. All patient came with complain of pain abdomen with distension, constipation and vomiting. On per abdomen examination – 40 patients had severe tenderness and 8 patients had mild tenderness. On per rectal examination, the rectum was empty in all cases and no palpable mass was present in anal canal. On radiological findings – X-ray abdomen showed grossly distended loop of large gut in 40 cases and in 6 cases, along with twisted tyersign, multiple air fluid levels were noted in the central abdominal cavity. Exploratory laparotomy confirmed sigmoid volvulus in 42 cases and ISK in 6 cases. Out of 42 cases of Acute Sigmoid volvulus, in 34 cases-loop of sigmoid colon were gangrenous and rest 6 were non gangrenous. In all 6 cases of ISK, both the loops of sigmoid colon and small gut are gangrenous. Post operatively superficial wound infection occurred in 10 cases which later healed by regular dressing and antibiotics. There was no case of anastomosis leak in sigmoid volvulus but only 2 case of anastomosis leak was noted out of 6 cases of sigmoid volvulus with ISK, which was managed by re-exploration. 2 patients developed pelvic abscess which was drained under ultrasound guidance. There was no mortality reported during this study period. The mean stay in hospital is 12-15 days.

**Table 1: Age and sex distribution**

| Age in years | Male      | Female   | Total     | Percentage  |
|--------------|-----------|----------|-----------|-------------|
| 25 – 35      | -         | 2        | 2         | 4.16%       |
| 36 – 45      | 4         | 2        | 6         | 12.5%       |
| 46 – 55      | 16        | 4        | 20        | 41.6%       |
| 56 – 65      | 14        | -        | 14        | 29.1%       |
| 66 – 75      | 6         | -        | 6         | 12.5%       |
| <b>Total</b> | <b>40</b> | <b>8</b> | <b>48</b> | <b>100%</b> |



**Figure 1: The ratio of male and female**

**Table 2: Post Operative Complication**

| Complication                 | Sigmoid Volvulus | Sigmoid Volvulus with ISK | Percentage |
|------------------------------|------------------|---------------------------|------------|
| Superficial wound infection  | 10cases          | -                         | 20%        |
| Pelvic Abscess               | 2 case           | -                         | 4%         |
| Anastomosis leakage          | -                | 2 case                    | 4 %        |
| Mortality                    | -                | -                         | 0%         |
| Total no. of patients out 48 | 12 cases         | 2 cases                   | 28%        |

**DISCUSSION**

Sigmoid volvulus is the most common cause of intestinal obstruction in Indian Rural Population. In this study all patients were from rural areas of Kishanganj, Bihar where consumption of high fiber diet results in long redundant sigmoid colon. The incidence of sigmoid volvulus is low in female in comparison to male due to capacious pelvis and lax abdomen that allows spontaneous untwisting of the sigmoid colon<sup>10</sup>. Majority of patient were admitted in the month of June to September with peak in august because of large number of population of Kishanganj is Muslim and after Ramzan fasting as people relish large meal and this leads to bulky stool and thus twisting of sigmoid colon<sup>11,12</sup>. One stage resection and primary anastomosis has good result in Indian rural population because of less solid fecal load, so the chances of anastomosis leakage is very low. Post operatively the average hospital stay in 12-14 days. This one stage operation not only saves the patient but also gives a better life by avoiding repeated hospitalization, re-surgery, stress related stoma cases at home and burden of cost. In our study of 48 patients, there was no mortality and only 28% complication reported in follow up. Sule *et al* concluded that resection of acute sigmoid volvulus and primary anastomosis after decompression alone can be carried out safely in reasonably fit patients<sup>(13)</sup>. Schilling and Kuzu *et al* compare, resection and primary anastomosis and Hartman’s procedure and found that resection and primary anastomosis was better treatment

modality for Acute Sigmoid Volvulus<sup>14,15</sup> De *et al* did resection and primary anastomosis in 197 patients in West Bengal and observed anastomosis leakage in only 2 patients<sup>16</sup> and the mortality rate was 1%. When our study was compared with some other studies, the results of the present study are same. Resection and primary anastomosis is the treatment modality of choice for acute sigmoid volvulus.

## CONCLUSION

So, primary colonic anastomosis may be under taken safely when the history is short and there maining bowl is clear, well vascularised and nondistended. It is a simple procedure which can be performed without increase in morbidity and mortality with good outcomes.

## REFERENCES

1. Bolt DE. The management of volvul us of sigmoid colon. Br J Surg 1956; 44:172-5.
2. Cuschieri A, Steele RJC, Moossa AR. Essential surgical practice.4<sup>th</sup> ed. London; Arnold Publication, 2002.
3. Z.Sule A, MisaunoM, Opaluwa AS, Ojo E, ObekpasPO. One stage procedure in the management of acute sigmoid volvulus without colonic lavage. The Surgeon 2007; 5:268-70.
4. Williams M, steffes CP: Sigmoid volvulus in a 46 year old man Hospital Physician, 2006; 33-36.
5. Shepherd JJ. Ninety two cases of Ileosigmoid knotting in Uganda. Br J.Surg 1967; 54:561- 6[PubMed].
6. PuthuD, RajanN,Shenoy GM, Pai US. The ileosigmoid knot. Dis Colon Rectum 1991;34:161-6.[ PubMed]
7. Alver O, Oren D, TireliM, Kayabasi B, Akdemis D. Ileosigmoid knotting in turkey: review of 68 cases. Dis colon Rectum. 1993;36: 1139-47.[PubMed]
8. Atamanalp SS, Oren D, Basoglu M, Yildirgram MI, Balik AA, Polat KY,et al. Ileosigmoid knotting: outcome in 63 patients.Dis Colon Rectum.2004;47:906-10[PubMed].
9. Raveenthiran V. The Ileosigmoidkot: new observation and changing trends. Dis Colon Rectum. 2001; 44:1196-200[PubMed].
10. Bruusgaard C. Volvulus of the sigmoid colon and its treatment.Surg.1947; 22:466-78.
11. Saida F. The high incidence of intestinal volvulus in Iran.Gut 1969; 10:838-41.
12. De U.Sigmoid volvulus in rural Bengal.TropDoct 2002; 32:80-2.
13. Sule AZ, Iya D, Obekpa PO, Ogbonna B, Momoh JT, Ugwu BT. One stage procedure in the management of acute sigmoid volvulus.J R Coll SurgEdinb 1999;44:164-6.
14. Schilling MK, Maurer CA, Kollmar O, Buchler MW. Primary vs. secondary anastomosis after sigmoid colon resection for perforated diverticulitis (Hinchey stage III andIV):a prospective outcome and cost analysis. Dis Colon Rectum 2001; 44:699-703;discussion 703-5.
15. Kuzu MA, Aslar AK, Soran A, Polat A, Topcu O, Hengirmen S. Emergency resection for acute sigmoid volvulus: results of 106 consecutive cases. Dis Colon Rectum 2002;45:1085-90.
16. De U, Ghosh S. Single stage primary anastomosis without colonic lavage for left sided colonic obstruction due to acute sigmoid volvulus: a prospective study of one hundred and ninety seven cases.ANZ J Surg 2003; 73; 390-2.
17. Aamer N, Siddique A, MohmmadN,Safirullah. One stage emergency resection and primary anastomosis for sigmoid volvulus: Journal of the college of physician and surgeons Pakistan 2010; 20(5); 307-9.
18. Manzoor A, Zahid H,Adnan Z. Management of acute sigmoid volvulus, using one stage resection and anastomosis, without colonic lavage: GomalJournal of Medical Sciences2009 july-dec;7;2.
19. SriramK, Schumer W, Ephrenpreis S, Comaty JE, Scheller J. Phenothiazine effect on gastrointestinal tract infection Am J Surg 1979; 137:87-91.

Source of Support: None Declared  
Conflict of Interest: None Declared