International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

IJAMSCR | Volume 2 | Issue 1 | Jan-Mar - 2014
www.ijamscr.com

Research article

A study on sigmoid volvulus presentation and management

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ABSTRACT

A study on sigmoid volvulus presentation and management was a 2 yr retrospective study done at RMMCH.The diagnosis of sigmoid volvulus was made from a history of large bowel obstruction (constipation, abdominal distension, and abdominal pain), which were often recurrent and plain abdominal radiographs.The morbidity associated is Superficial wound infection occurred in four patients. All the infected wounds eventually healed with conservative measures. Clinical anastomotic dehiscence was noted in 1 patient for which during relaparotomy proximal colostomy and mucous fistula was done. The mortality associated is shown is there were 9 deaths of which 7 were due to sepsis and 2 were due to comorbid illness. Two out of eight patients for whom a colopexy was done had a recurrent attack of sigmoid volvulus. The duration of hospital stay ranged between 10 and 21 days. Use of sigmoidoscopic detorsion for viable colon should be encouraged. Sigmoidopexy, which is associated with a recurrence rate of 20% in our series of patients, should be used selectively.Hartmann's procedure is a safe option in sigmoid volvulus with gangrenous bowel.Primary anastomosis in emergency situation can be carried out with morbidity and mortality in patients with viable colon.

Key Words: sigmoid volvulus, large bowel obstruction, gangrenous bowel.

INTRODUCTION

Volvulus describes a condition in which a segment of bowel becomes twisted on its own mesenteric axis resulting in complete or partial obstruction. Compromised blood supply along with increase in intraluminal pressure leads to gangrene and perforation if unrelieved.[1-3]

Volvulus is generally uncommon and the colon is the most common part of GIT to form a volvulus. The most frequent site is the sigmoid colon. The other sites include caecum, ascending colon and transverse colon.[4-6]

In the vast majority of cases, sigmoid volvulus is an acquired condition resulting from elongation of sigmoid loop and stretching of sigmoid mesocolon. Detailed records of this disease were found in the Egyptian papyrus ebers and in ancient Greek and Roman writings. Insufflations with air to untwist the sigmoid volvulus as a mode of treatment, which Hippocrates had advocated, are still the basis for the non-operative treatment of sigmoid volvulus accepted by surgeons worldwide.[7-8]

In the developed world, sigmoid volvulus occurs in elderly and frail patients with illness. Therefore, initial treatment in the absence of clinical features of large bowel gangrene or peritonitis, consists of detorsion by sigmoidoscopy and trans rectal intubation as described by Brudsgaard.[9-12]

Failure to achieve DE torsion, clinical evidence or suspicion of perforation requires emergency laparotomy. At laparotomy, various operative procedures have been adopted in the emergency management of sigmoid volvulus. However permanent cure can only be ensured by resection of

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the sigmoid colon and anastomosis.

In the developing world, mortality following emergency surgery for acute sigmoid volvulus is low. This is mainly due to the fact that patients are relatively young and healthy and therefore, better able to recover from the disorder and its surgical treatment. Hence a single staged method of treatment that ensures a permanent cure, avoids a colostomy, reduces number of procedure and associated mortality and morbidity and shortens duration of hospital stay is desirable.[13-15]

Clinical and experimental evidence supports the view that a clean bowel is an important factor in surgery of the left colon and rectum, those parts of the bowel, which normally have solid feces and a high bacterial count. So, a definitive one-stage resection of the redundant colon and primary anastomosis after on-table ante grade colonic lavage as described by Dudley. et. al is preferred.

MATERIAL AND METHODS

Twenty-five consecutive patients with acute sigmoid volvulus treated over a 2-year period (2012-2014) in RMMCH were retrospectively reviewed. The diagnosis of sigmoid volvulus was made from a history of large bowel obstruction (constipation, abdominal distension, and abdominal pain), which were often recurrent and plain abdominal radiographs.

In the latter, the cardinal features were the inverted 'coffee bean' or 'omega' sign of the distended, twisted, sigmoid colon. Laparotomy was performed on all patients after active fluid resuscitation, correction of any electrolyte and acid base disturbances, and establishment of Satisfactory urine output.Inj.Cefotaxime 1 gm and Inj metronidazole 500 mg were administered intravenously at the time of induction of anesthesia and were continued postoperatively.

At laparotomy, viability of the bowel was assessed through a midline incision. Gaseous distension of the large bowel was relieved by needle aspiration. Depending on the viability of the colon, general condition of the patient and surgeons experience either resection and primary anastomosis or Hartmann's procedure or sigmoidopexy was done. A Closed tube drain withoutSuction was inserted in the left flank through a separate stab incision. The vertical; midline incisions were closed by mass closure using monofilament prolene.

The clinical course and postoperative complication were also reviewed. Wound infection was defined as a presence of pus, either discharging spontaneously as requiring drainage. Anastomotic leak was defined as the presence of a fecal fistula or anastomotic breakdown seen at laparotomy following peritonitis. Hospital stay was defined as the total time spent in thehospital for the presenting complaint. Mortality was considered as death occurring in hospital.

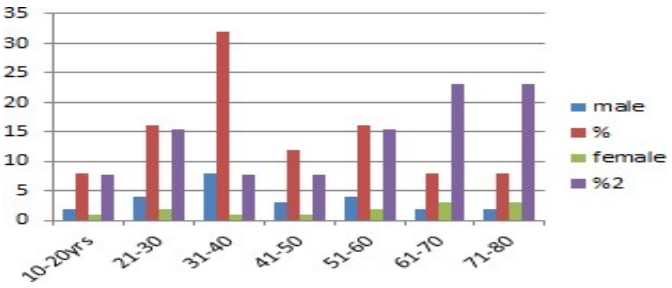
RESULTS

The 38 patients comprised of 25 men and 13 women with an age range of 17-76 years. The age-sex distribution is shown in Table 1.

Table 1. Age sex distribution pattern

Age	Male	%	Female	%	Total
10-20	2	8	1	7.6	3
21-30	4	16	2	15.3	6
31-40	8	32	1	7.6	9
41-50	3	12	1	7.6	4
51-60	4	16	2	15.3	6
61-70	2	8	3	23	5
71-80	2	8	3	23	5

Figure 1: Age sex distribution

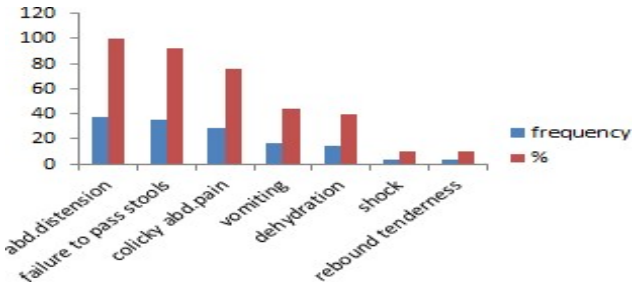


The frequency of signs and symptoms of sigmoid volvulus in our series of patients is shown in Table 2.

Table 2. Frequency of Signs and Symptoms of Sigmoid Volvulus

Symptoms	Frequency	N=38
Abdominal distension	38	100%
Failure to pass stool or flatus	35	92%
Colicky abdominal pain	29	76%
Vomiting	17	44%
Dehydration	15	40%
Shock	4	10%
Rebound tenderness	4	10%

Figure 2 Frequency of Signs and Symptoms of Sigmoid Volvulus



The morbidity associated various procedures is shown in Table 3. Superficial wound infection occurred in four patients. All the infected wounds eventually healed with conservative measures.

Clinical anastamotic dehiscence was noted in 1 patient for which during relaparotomy proximal colostomy and mucous fistula was done.

MORBIDITY EVALUATION:

Table 3. MORBIDITY EVALUATION

Procedure	No. of cases	Wound infection	Anastomoticdehiscene
Resection & primary Anastomosis	12	3	1
Hartmann's procedure	20	4	0
Sigmoidopexy	5	0	0

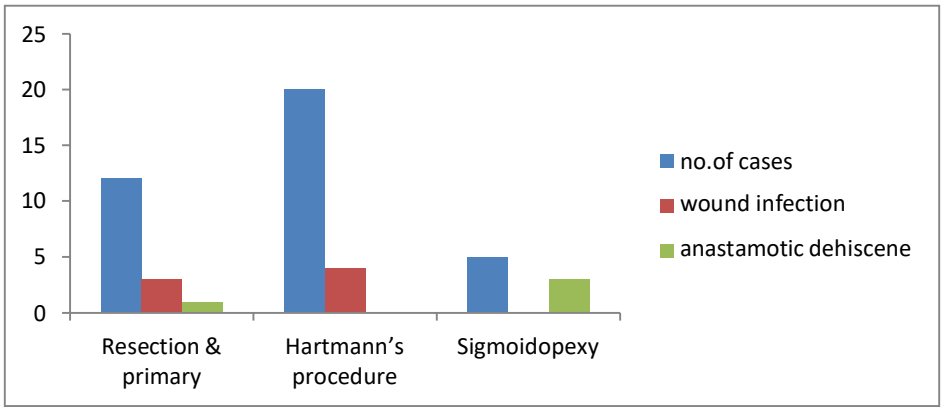
The mortality associated with various procedures is shown is Table 4.There were 9 deaths of which 7 were due to sepsis and 2 were due to comorbid illness. Two out of eight patients for whom a colopexy was done had a recurrent attack of sigmoid volvulus. The duration of hospital stay ranged between 10 and 21 days.

MORTALITY VS TYPE OF PROCEDURE

Table 4. Mortality Vs Type Of Procedure

Procedure	No. of cases	Death	Mortality%
Resection & primary Anastamosis	14	5	35.7
Hartmann's procedure	17	2	11.7
Sigmoidopexy	8	2	25

Figure 4 Mortality Vs Type of Procedure



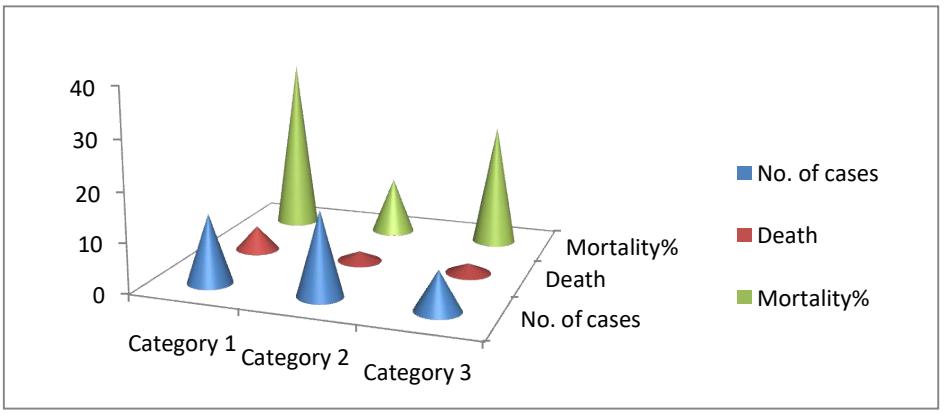


Figure 5 MORTALITY VS TYPE OF PROCEDURE

CONCLUSION

Use of sigmoidoscopicdetorsion for viable colon should be encouraged. Sigmoidopexy, which is associated with a recurrence rate of 20% in our series of patients, should be used selectively.Hartmann's procedure is a safe option in sigmoid volvulus with gangrenous bowel.Primary anastomosis in emergency situation can be carried out with morbidity and mortality in patients with viable colon.

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