IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 16, Issue 9 Ver. I (Sep. 2017), PP 56-59
www.iosrjournals.org

A Clinical Study on Management of Sigmoid Volvulus in Government General Hospital, Guntur.

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Abstract: *sigmoid volvulus is a surgical emergency and significant cause of large bowel obstruction .The disease is more prevelant in India ,especially in rural population.The study analysed the etiological factors wich predisposed to sigmoid volvulus , clinical presentations , different modality of treatments and outcome.The duration of the study was 3 years between January 2013 to December 2016 at Government General Hospital ,Guntur.*

***Results** : The mean age of sigmoid volvulus was 48 years and male to female ratio was 4:1 comparitively less frequent in less than in 20 years and above 70 years. Distention of abdomen (100 %) followed by constipation were the commonest mode of presentation.*

Keywords: *Sigmoid volvulus ,abdominal distention , Resection and anastamosis , Hartmanns procedure .*

Date of Submission: 28 -08-2017 Date of acceptance: 09-09-2017

I. Introduction

A volvulus is an abnormal twisting of the bowel on its axis of loop or mesentery either clockwise or anticlockwise. 15% of intestinal obstruction are of large bowel obstruction and among these 65 % are due to sigmoid volvulus and 35% due to caecal volvulus sigmoid volvulus is most common in Asaian countries and in India common in south India .This may be due to high fibre diet low socio economical status of the people .This is common in males and old aged patients.One and half rotation of the bowel on its axis is required for vascular obstruction and some patients present with compound volvulus as ileal loops come around the root of the sigmoid encircles it causing ileo-sigmoid knotting .

Acute sigmoid volvulus , which lead’s to large intestinal obstruction which left untreated often , results in life threatening complications , such as bowel gangrene ,perforation , peritonitis. Early and correct diagnosis of this disease is essential for appropriate treatment .Emergency surgery the appropriate treatment for those who presented with diffuse peritonitis,intestinal perforation.The classical clinical picture with plain radiograph is usually sufficient to diagnose the condition.Nonspecific nature of the symptoms and clinical presentation make the diagnosis of sigmoid volvulus challanging at times.Alltough surgical exploration itself as accepted mode of diagnosing acute abdomen. Factors associated with poor prognosis include advance age delay in diagnosis,presence of gangrene of the bowel , peritonitis , and shock at presentation. The study involves clinical symptoms,different modes of presentations,to study the various methods of treatment ,and outcome of the disease . Material and methods : All the patients admitted in Government General Hospital Guntur with clinical diagnosis of sigmoid volvulus were taken into study during the period January 2013 to October 2016 .a group of 46 patients were included in this study who were diagnoised at casualty as acute intestinal obstruction due to sigmoid volvulus other causes of large bowel obstruction were excluded in this study. Patients were divided into two groups one obstructive type and second sub occlussive type . Criteria for obstructive type are abdominal distention obstipation and tenderness of the abdomen and plain xray abdomen positive sign.Sub occlussive type abdominal distention, constipation and present with vague xray finding.

A proforma was made for the study of these cases.The cases were subjected to detailed clinical examination essential investigation xray erect abdomen,ultrasound abdomen, and ct scan of the abdomen and pelvis in cases where xrays not clinches the diagnosis. A detailed history was obtaind and examination was done,the history of present illness , past illness related to bowel disorders,diet habbits and constipations were taken and detailed findings at clinical examintaion were taken.The xrays was taken in all the cases,the plain xrays of the abdomen in erect posture was of great diagnostic aid. This confirms the diagnosis of sigmoid volvulus in most cases preoperatively . The highly distended omega loop could be demonstrated in 99% of cases.Operative findings, treatment, complications,mortality and morbidityand results of various types of

operations and follow up were recorded.Preopertively all patients were resuscitated with iv fluids , nil oral , naso gastric aspiration ,antibiotics intravenously ,and exploratory laporotomy was performed.

II. Results

Total of 46 cases of sigmoid volvulus patients who underwent surgical treatment were included in the study. Age , symptoms,sex ,signs , investigations , operative findings , operative procedure performed , morbidity , and mortality were studied.

Showing number of cases in different age groups

Age of the patient	**Total no of cases**	**percentage**
21 - 30	2	4.34
31-40	7	15.21
41-50	12	26.08
51-60	18	39.13
61-70	7	15.21
Total	46	

Male & Female ratio :

No. of males	37	80.43 %
No. of females	9	19.56 %

Clinical presentation on admission:In the present study distension of abdomen was the commonest presentation followed by pain abdomen and obstipation .

Table showing modes of presentation :

symptom	**No.of patients**	**percentage**
Distension of abdomen	46	100
Pain abdomen	34	73.91
Constipation	38	82.60
Vomtings	04	8.69
Retention of urine	12	26.08
Fever	03	6.52

Choice of the procedure depended on the general condition of the patient, intra operative finding and viability of the bowel .Incases with viable bowel the procedure performed was either sigmoidopexy or primary resection and anastomosis. Sigmoidopexy patients were later followed by resection and anastomosis after bowel preparation.The disadvantages of sigmoidopexy is recurrence.

Table showing various types of surgery performed :

Procedure	**No.of patients**	**Viable bowel**	**Gangrenous bowel**	**percentage**
Sigmoidopexy	06	06	-	13.04
Primary resection and anastomosis	12	12	-	26.08
Hartmanns procedure	28	-	28	60.86

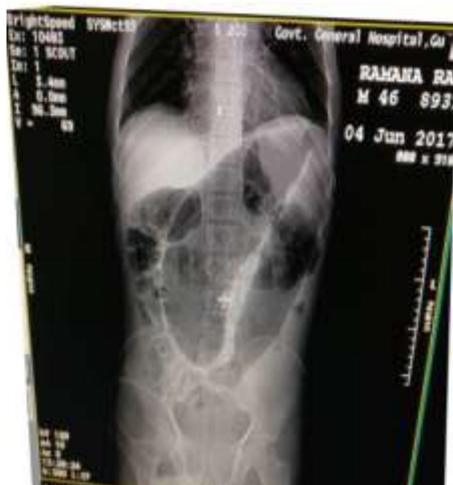

Table showing percentage of Post op Complications :

complication	No of cases	percentage
Wound infection	12	26.08
Anastomotic leak	04	8.69
Respiratory distress	06	13.04
septicemia	05	10.86

In our study where bowel is viable (18) in 12 cases we performed primary resection and anastomosis.The anastomosis technique followed is single layer full thickness intermittent sutures with nonabsorble suture material.In this group of 12 cases 4 cases developed anastomotic leak 2 cases re-laparotomy was done hartmanns procedure was done.Remaining two cases were managed conservatively.Hartmanns procedure was done in 28 cases where bowel is gangrenous.The distal stump was closed and proximal loop brought out as end colostomy .Colostomy closure was done in later stage. We consider that hartmanns procedure is a life saving procedure in gangrenous bowel and unstable patients and associated co-morbid conditions. 29 cases developed postoperative complications ,of these wound infection was the most common complication (12) , anastomotic leak in 4 cases , 6 cases developed respiratory failure and 5 cases septicemic shock with ARDS.Respiratory distress patients are managed with ventilatory support in ICU and 2 cases developed respiratory arrest.5 cases developed septicemia with ARDS.In our study the mortality rate is 15.21 %.Morbidity percentage is 50.01%. Mean duration of hospital stay for sigmoid volvulus patients is 10-14 days .

III. Discussion

Sigmoid volvulus is the most common in low socio economic status with history of chronic constipation and treat this condition from the basic level i.e ,health education by taking appropriate measures will decrease the incidence upto 30 percent .Sigmoid volvulus is responsible for acute large bowel obstruction .It is more common in Asain countries like India particularly south india with vegetarian diet.High residual diet leads to elongation of sigmoid colon ,and meso colon associated with narrowing of meso colon of the posterior wall (1,2).other causes include constipation , previous abdominal surgeries , neurological and psychiatric diseases like dementia or schizophrenia has been described in literature, (4).Sigmoid volvulus common seen in 40-60 years with male preponderence with male to female ratio is 4:1.The usual clinical presentation of sigmoid volvulus is from acute intestinal obstruction to fulminating strangulation with gangrene and perforation (5).Classical presentations include abdominal distention , constipations and pain abdomen.All cases could be diagnosed with clinical examination, radiological examination with limited resources xray – abdomen alone with coffee bean appearance.We were able to make preoperative diagnosis 88 percent (6).The treatment of sigmoid volvulus is variable .This variations depends on many factors like genral conditions of the patient at the onset , past history, availability of ancillary support like blood tranfussion investigative facilities , good anaesthesia and experience of the surgeon(7) .Many operative procedures have been described in the literature would probably mean that no single operation is suitable in all patients and there are differences in the outcome of the disease (8).There is high incidence of volvulus after simoidopexy .Sigmoidopexy is simple fixation of the colon to the intra abdominal structures is an effective procedures in viable redundant colon.The mortality and morbidity is almost nil in this procedure.The main problem of this procedure is recurrence (9).To prevent recurrence of the following sigmoidopexy ,Bhatnagar an Indian author described a procedure of extraperitonealization of whole sigmoid colon in 1970 in non gangrenous volvulus.The whole bowel is brought into a closed space with out need to open the bowl (10).But we didn't observed this procdure at our institution GOVERNMENT GENERAL HOSPITAL , GUNTUR .Resection and anastamosis is an unprepared bowel and undernourished patients is not ideal and has its own morbidity and mortality.But this is gold standard when the colon is viable and with good ancillary facility like blood transfusion and ICU setup (11).In unprepared bowel anastamotic leak can be prevented by proximal colostomy.Wound infection rates are high in this procedure .This is a choice of procedures in young patients.

Hartmanns procedure : This is the goldstandard life saving procedure in emercency conditions when the bowel is gangrenous the distal stump is closed and proximal end brought out as colostomy.This is the choice in elderly patients with gangrenous bowel but mortality rate may be increased by many folds due to absorption of toxic material and profused mucous discharge after derotation leads to hypokalemia. Conclusions: Preoperative diagnosis, preoperative findings, type of surgery ,age of the patient, and time of the presentation are all effect the prognosis.The sigmoid volvulus is not uncommon in our setting ,affecting males and hightest incidence is in 4 to 6 decade.Every patients required immediate resuscitation and exploratory laparotomy xray erect abdomen is enough to diagnose the sigmoid volvulus.Most common presenting features are distension of abdomen,pain abdomen,and absolute constipation.Derotaion of the loop and resection and anastomosis done in viable bowel and hartmanns procedure is the operation of choice and life saving in gangrenous colon and has significant mortality and morbidity rates.The main predictors of mortality were oldage, co-morbid medical

illness late presentation ,presence of shock and gangrenous bowel.The overall mortality was 15.21% in this study.

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