SIX YEARS EXPERIENCE OF SIGMOID VOLVULUS

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ABSTRACT
Objective: To study the outcome of treatment in cases of Sigmoid Volvulus.
Design & Duration: Retrospective analysis of case series from May 2000 to April 2006.
Setting: Department of Surgery, Unit IV, Civil Hospital, Karachi.
Patients: Sixty eight patients who were admitted with Sigmoid Volvulus during the study period.
Methodology: The records of all the patients were reviewed retrospectively. Non-surgical methods like sigmoidoscopy, and barium, water soluble and saline enemata were tried in most of the cases to relieve obstruction. In patients with peritonitis or those with failure of non-surgical treatment, emergency surgery was performed.
Results: The mean age of the patients was 58.1 years, and 89.7% of them were male. Amongst the patients 25% had a past history of similar episode, while 32.3% had co-morbidities. The mean duration of symptoms was 43 hours, and 14.8% of the patients were in shock. The most common clinical features were abdominal pain (98.7%), abdominal distension (96.0%), constipation (92.3%) and abdominal tenderness (98.7%). Correct clinical diagnosis was made in 80.6% of the cases, while abdominal X-rays revealed positive findings in 85.2% of the patients. X-rays of the abdomen in erect and supine position, ultrasound abdomen and sigmoidoscopy were used as diagnostic tools.
Conclusion: Sigmoid volvulus is generally seen among adult males. Its major problems include a tendency to recur; presence of co-morbidities and shock.

KEY WORDS: Volvulus, Large Gut Obstruction, Sigmoid Colon

INTRODUCTION

Sigmoid Volvulus is a rare but important cause of large bowel obstruction1-2, accounting for 5% of the cases.3 It is an emergency condition that requires early identification and intervention. Mechanical obstruction of the large bowel causes proximal dilatation with mucosal oedema, and impaired venous and arterial blood flow. This increases the mucosal permeability of the bowel, which can lead to bacterial translocation, systemic toxicity, dehydration, and electrolyte abnormalities.4-5 Bowel ischemia can also lead to perforation and faecal spillage in the peritoneal cavity.

Sigmoid volvulus is the twisting of its base which includes junction of descending colon with proximal sigmoid, base of sigmoid mesocolon, and rectosigmoid junction. Although it generally presents like a large gut obstruction, its diagnosis may be difficult.4

PATIENTS & METHODS

The record of 68 patients with sigmoid volvulus, who were admitted in Surgical Unit IV of Civil Hospital Karachi from May 2000 to April 2006, were reviewed for age, sex, residential area, previous or associated problems, clinical features, radiological findings and diagnosis.

After resuscitation and investigations, non-operative procedures (barium, water soluble and saline enemata, rigid sigmoidoscopy) were tried both for the diagnosis and treatment. In patients with unsuccessful non-operative detorsion, early recurrence or with bowel gangrene on endoscopy, emergency surgery was performed. Emergency operations were also carried out as an initial treatment in patients with features of peritonitis, melanotic stools on rectal examination and those with preoperative...

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diagnostic problems. Surgical procedures performed included resection of dilated oedematous segment of sigmoid colon with exteriorization of the ends as end colostomy and mucus fistula, and Hartmann’s procedure.

RESULTS

A total of 68 sigmoid volvulus (SV) cases were treated during the study period. The ages of the patients ranged from 45 to 88 years (mean age was 58.1 years); the highest incidence was seen in the sixth decade of life (23 patients, 33.8%). Sixty one (89.7%) patients were male and 7 (10.3%) female. Most (90%) of them belonged to the low socioeconomic class.

Seventeen (25%) patients had a past history of volvulus detorsion, whereas 22 (32.3%) suffered from other diseases like chronic obstructive pulmonary disease, hypertension, cardiac or coronary disease, diabetes mellitus, hemiplegia and renal insufficiency. The mean duration of symptoms was 43 hours (range 12 hours to 6 days). Ten (14.7%) cases suffered from toxic and/or hypovolemic shock. The major clinical features are depicted in Table I.

Diagnosis of SV was endoscopically or surgically confirmed in 88.2% (60) patients. Plain erect or lateral decubitis abdominal X-rays of all patients were evaluated, and 58 (85.3%) revealed SV findings as a dilated sigmoid colon in an omega-like formation with small intestinal and/or colonic air-fluid levels. Based on the concurrent evaluation of clinical and radiological findings, the correct rate of diagnosis was 80.6%. Ultrasound examination was done in 17 (25%) patients, which revealed massive dilatation of gut lumen and severe oedema of the sigmoid colon wall. After resuscitation, non-operative procedures like rigid sigmoidoscopy and barium/saline enema were performed in 50 (73.5%) cases. In patients with bowel gangrene or peritonitis, or those in whom non-operative treatment was unsuccessful, emergency surgery was performed (47.7%).

In 79.4% patients, an anatomic predisposing factor (a redundant sigmoid colon with an elongated mesentry having a narrow base) was detected, whereas postoperative adhesions were detected in 7.6% cases. In this series 33 (48.5%) patients were >60 years of age. The mean duration of symptoms in them was longer (42.8 hours) than that of the younger age group (39.4 hours); besides the preoperative correct diagnosis which was lower (74.9% vs. 80.6%) and the surgical mortality which was higher (24.1% vs. 15.9%).

DISCUSSION

Sigmoid volvulus (SV) is an unusual but important form of intestinal obstruction.1-3,5 African, Asian, Middle Eastern, East European, South American countries, and also Pakistan are endemic regions for SV. The occurrence of SV in Pakistan may be diet associated because it is common among labourers and lower income groups, in whom high fibre diet is more common.

It is common in adults with a mean age >58.1 years; the highest incidence was seen between 4th and 7th decades of life. The sex ratio in the literature varies from 2:1 to 10:1,6 a finding similar to that in the current series. An important predisposing factor in the development of SV is the presence of a redundant sigmoid colon with an elongated mesentery having a narrow base, which was a very common finding in our study also. High-fibre vegetable diet or voluntary constipation habits cause dilatation and elongation of the sigmoid colon.3,4 Other predisposing factors are post-operative adhesions, internal herniations, omphalomesenteric abnormalities, intestinal malrotations, intussusceptions, appendicitis and carcinomas3,4, which were rare or non-existent in our series.

In SV cases past episodes or detorsion attempts and presence of co-morbidities have always been the prevalent features, as was in the present series.7,9 Late admission is generally a problem in SV because of the presence of associated diseases and different defecation habits.1,2 In our opinion, it is also related to socioeconomic problems in developing or underdeveloped countries, as was in our study.

The mean duration of symptoms ranged between 2-5
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days. The most common symptoms of acute SV are abdominal pain and distention followed by constipation, while the other complaints include vomiting, nausea, diarrhea, anorexia, rectal bleeding and haematemesis. The physical findings are abdominal distention located generally asymmetrically in the upper abdomen, and tenderness, while additional findings include abnormal bowel sounds, tympani, empty rectum, visible peristalsis, abdominal mass and faecal odor of the breath. Presence of rectal melanotic stool or rebound tenderness and muscular guarding may show gangrene or perforation and peritonitis.

Plain abdominal X-rays usually demonstrate a dilated sigmoid colon and/or multiple small or large intestinal air-fluid levels. Several radiological diagnostic signs are described in the literature, such as the omega or horse shoe sign, bird beak sign, Y sign, northern exposure sign, coffee bean sign, and empty left iliac fossa sign. The plain abdominal radiography has been found diagnostic in 61.5% cases by Arnold and Nance, in 90% by Bak and Boley and in 72.8% by Öncü et al. In this series it was diagnostic in 86.2% of cases. In our experience, the presence of a dilated sigmoid colon in an omega-like formation with multiple small intestinal and/or colonic air-fluid levels is a valuable finding. Although the clinical and radiological findings are typical for SV, its diagnosis may be difficult.

A correct diagnosis of 72.7%, based on clinical and X-ray findings, has been reported by Öncü et al. It was 90.2% in the present series. In our opinion, urgent decision making for proper treatment is as important as correct diagnosis of SV. If the patient does not have peritonitis, barium or water-soluble contrast enema studies may be used in the diagnosis of SV, since they generally show the obstructive lumen and may be successful in the reduction of SV. Endoscopy is another diagnostic method in SV. It is also useful in identifying other causes of obstruction. A spiral sphincter-like twist of mucosa shows the torsion in endoscopy.

Non-operative de-torsion with flexible sigmoidoscopy or colonoscopy is also advocated as the primary choice in the treatment of SV. In patients with bowel gangrene or peritonitis, and for those in whom the non-operative treatment was unsuccessful, emergency surgery is required.

Previous studies have shown that nearly one-third of the elderly patients with SV has a history of similar attack in the past. In them SV may be preceded by inactivity and pseudo-megacolon. Owing to psychiatric problems, chronic illness, or institutionalization the patient is more likely to be subjected to treatment with sedatives and psychotropic drugs, causing decreased neuromuscular function of the gut. Therefore, the diagnosis of SV in the elderly is difficult, and it has a poorer prognosis as compared to young adults. In the present study, similar clinical findings, diagnosis and mortality rate were found. This disease is generally seen in adult men with a mean age of 58.1 years. Many patients (25.9%) had a history of volvulus. Associated diseases (25.6%), late admission (mean 48 h) and shock (13.5%) were generally major problems in SV.

CONCLUSION

When used, sigmoidoscopy is diagnostic in all patients that underwent this procedure, with a spiral sphincter-like twist of mucosa that shows the torsion, and it was therapeutic in 78.0% of the patients. Therefore, endoscopic procedures are most suitable in the diagnosis and treatment of SV, unless perforation and/or peritonitis is present.

REFERENCES


