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Management of sigmoid colon volvulus: A Senegalese experience based on 73 cases

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Abstract

Volvulus of the sigmoid colon is rare in the West, but is the main cause of colonic obstruction in developing countries. Diagnosis is based on clinical findings supplemented by standard unprepared abdominal X-rays (UPX). The aim of our study is to share our experience in the management of sigmoid colon volvulus in order to compare our results with those in the literature. We conducted a retrospective and descriptive study between 01 January 2008 and 31 December 2021. Our study included 73 patients admitted for sigmoid colon volvulus. The mean age of our patients was 48.8 years with extremes of 17 and 86 years. There were 62 men and 11 women, giving a sex ratio of 5.63. Chronic constipation was found in 63.01% (N=46), and occlusive syndrome concerned 100% of patients. An unprepared abdominal X-ray (UXR) was performed in 93.15% (N=68) of patients and showed a typical inverted U image in 100% of cases. Sigmoidectomy followed by restoration of digestive continuity was performed in 84.93% of cases. The average time taken to close the stoma was 21.8 days, with extremes of 15 and 49 days. Post-operative management was straightforward in 63 patients (86.30%). Morbidity in our series was 9.58%, i.e. 7 patients, and mortality was 3 patients, i.e. 4.10%.

Keywords: Sigmoid colon volvulus, Senegalese experience, volvulus

Introduction

Volvulus of the sigmoid colon is a torsion of the sigmoid loop around its mesocolic and is rare in the West, but is the main cause of colonic obstruction in developing countries^[1, 2]. Diagnosis is largely based on clinical findings, supplemented BSY standard unprepared abdominal X-rays (UPX). Sigmoid volvulus accounts for 30% of acute intestinal obstructions in Black Africa, 2% in Western Europe and 3.4% in the United States^[3]. The average age in Africa is 40, compared with 70 in Western countries. Contributing factors include dolichosigmoid disease, chronic constipation, a high-fibre diet and treatment with neuroleptics^[4, 5]. Diagnosis must be made quickly and treatment undertaken as a matter of urgency, otherwise colonic necrosis is the rule. Diagnosis is often straightforward, based on clinical findings and an unprepared abdominal X-ray. As far as treatment is concerned, detorsion by intubation under endoscopic control plays an important role. This avoids the need for emergency surgery on an unprepared colon. The only definitive treatment is sigmoidectomy followed by restoration of digestive continuity. The aim of our study is to share our experience of the management of sigmoid colon volvulus in order to compare our results with those in the literature.

Patients and Method

We conducted a retrospective descriptive study between 01 January 2008 and 31 December 2021. Patients with sigmoid colon volvulus who underwent surgical treatment were included. The variables studied were: frequency, age, sex, history, clinical signs, paraclinical examinations, data from surgical exploration, surgical procedure, length of hospital stay, time to stoma closure, morbidity and mortality. The data collection instrument consisted of a questionnaire with various headings, in line with the objectives of the study.

The data were processed using sphinx V5 software, which was used to analyse the distribution of the various study parameters.

Results

Our study included 73 patients admitted for volvulus of the sigmoid colon.

The mean age of our patients was 48.8 years, with extremes ranging from 17 to 86 years? There were 62 men and 11 women, giving a sex ratio of 5.63. Chronic constipation was found in 63.01% (N=46), 5 patients (6.84%) had a psychiatric background. Clinical symptoms were represented by an occlusive syndrome in 100% of cases. The functional signs are shown in Table 1.

Table 1: Shown the functional signs

Fonctionels signs	Number	Percentage
Abdominal pain	73	100%
Nausea-vomiting	37	50,68%
Transit stopped	70	95,89%

Physical examination revealed significant abdominal meteorism in 100% of cases. An unprepared abdominal X-ray (UXR) was performed in 93.15% (N=68) of patients and showed a typical inverted-U image in 100% of cases (Figure 1).

Abdominal CT scans were performed in 5 patients (8.6%) and showed a swirling image of the meso sigmoid (Figure 3). All patients received pre- and post-operative resuscitation with isotonic saline, trans-urethral bladder catheterisation, nasogastric catheterisation and antibiotic therapy.



Fig 1: ASP radiograph: inverted U image

The surgical approach was a median laparotomy in all patients. Data on surgical exploration are shown in Table 2.

Table 2: Breakdown of operating data.

Operative data	Nombre	Percentage
Volvulus with two spiral turns	57	78,08%
Volvulus with one turn of coil	16	21,91%
Viable sigmoid colon	68	93,15%
Necrotic sigmoid colon	5	6,85%
Serohematic peritoneal effusion	37	50,68%
Retractile meso sigmoiditis	39	53,42%
Méga colon	41	56,16%
Faulty colonic attachment 11	11	15,07%

The surgical procedures are set out in Table 2.

Table 3: Breakdown of surgical procedures.

Surgical procedure	Number	Percentage
Sigmoïdectoy + colostomy Bouilly-Volkman	57	78,08%
Sigmoïdectomy + colostomy Hartmann	5	6,84%
Sigmoïdectomy + immédiate anastomosis	11	15,06%
Total	73	100%

The average time taken to close the stoma was 21.8 days, with extremes of 15 and 49 days. Post-operative management was straightforward in 63 patients (86.30%). Morbidity in our series was 9.58%, or 7 patients, dominated by parietal suppurations in 4 patients. Mortality occurred in 3 patients (4.10%).

Discussion

Sigmoid colon volvulus is the leading cause of colonic obstruction in developing countries such as Africa, Eastern Europe and India, where the incidence can be as high as 50% [5]. In our serie, 30% of patients had chronic constipation and two patients had antécédents of neuropsychiatric pathologies. Indeed, chronic constipation, antécédents of abdominal surgery, pregnancy, mega dolichocolon and prolonged use of certain psychotropic drugs have été identified as étant the main factors favouring pelvic colon volvulus [6,7,8]. In contrast to the situation in the West, where pelvic colon volvulus preferentially affects the subject over 60 years of age, in Africa it mainly affects young adult males, as our results attest [4, 8, 9]. Volvulus of the sigmoid colon manifests clinically and radiologically as an acute lower intestinal obstruction. In late-onset forms, the presence of severe pain, deterioration in the patient's general condition, tachycardia and hypotension, and peritoneal signs indicate necrosis or even perforation of the sigmoid loop [10, 11]. In our practice, simoïdectomy followed by colostomy and secondary restoration of digestive continuity is a good alternative, as our results demonstrate. The short delay in re-establishing digestive continuity in our study is linked to the difficulties in managing the colostomy, but also to socio-economic and cultural factors. In addition, the morbidity often associated with colostomy, the risks of a second operation to re-establish digestive continuity, and the long hospital stay are all factors that lead some authors to currently prefer ideal colectomy, the results of which are varied [12, 13]. Mortality is related to the duration of the evolution of symptoms, the patient's age, comorbidities, general condition, signs of intestinal suffering and the surgical procedure. This mortality was 4.10% in our study. This low rate is in line with data in the West African literature [14-16]. Laparoscopy is an alternative to laparotomy in centres where CT scans and endoscopic detorsion are accessible [16].

Conclusion

In conclusion, volvulus of the sigmoid colon is a pathology of the young adult male with a background of chronic constipation. It presents an obvious picture of acute low intestinal obstruction. The radiography of the abdomen without preparation is sufficient to make the diagnosis. In Senegal, surgical treatment with a 2-stage tactic gives satisfactory results.

Authors' contributions

All the authors contributed to the drafting and correction of the article under the supervision of Pr Papa Saloum DIOP.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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