

Treatment Of Volvulus Of The Sigmoid Colon By Colectomy In Two Phases

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Citation

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Abstract

Objective : The aim of this study was to report the result of surgical treatment of volvulus of the sigmoid colon by colectomy in 2 phases. **Material and methods:** This is a descriptive and retrospective study during 5 years, led in the unit of digestive and general surgery of Aristide le Dantec Teaching Hospital (Dakar-Senegal). The criterion of inclusion was volvulus of the sigmoid colon treated by colectomy in 2 phases. We studied the epidemiological characters, means of diagnosis, types of colectomy, per-operative accidents and immediate consequences. **Results:** We retained 89 files. Volvulus of the sigmoid colon represented 58% of all the colectomies realized during the period of study. The mean age of the patients was 42 years; 84% were men. All patients had undergone radiography of the abdomen; no mechanical colon preparation had been made. Colectomy according to Hartmann's method had been realized in 36% of the cases. One per-operative incident had been registered. The immediate complications concerned 20% of patients. There was no death registered. **Conclusion:** In sub-Saharan Africa, colectomy is very often the only therapeutic alternative in volvulus of the sigmoid colon. This colectomy obeys to well-established principles in our context of exercise. For the surgeon, volvulus of the sigmoid colon remains a preoccupation connected to the delay of diagnosis.

INTRODUCTION

Volvulus of the sigmoid colon (VS) is responsible for 30% of acute intestinal occlusion in sub-Saharan Africa, 2% in Western Europe and 3.4% in the USA [1]. The emergency therapeutic approach is controversial and is based on varying techniques which have evolved over the last years. Through this study, the authors report the results of their experience with surgical treatment of volvulus of the colon by two stage colectomy.

MATERIAL AND METHODS

This is a retrospective, descriptive study conducted in a unique center, in the unit of digestive and general surgery of Aristide le Dantec Teaching Hospital from 8th December 2004 to 31st December 2009. This hospital was built in 1868 and falls under the Medical Region of Dakar (Senegal); it is essentially attended by patients of the very low social class. The department of surgery has two wards with a capacity of 57 beds, an emergency unit with 12 beds and a theatre with 6 operating rooms for emergency and elective surgery. The study comprised 89 cases of VS with a total of 154 colectomies performed. Through a midline laparotomy, sigmoidectomy was performed after ligation of the inferior

mesenteric vessels; the first stage consisted of exteriorizing the 2 colonic segments in a "double barrel" as described by Bouilly-Volkman or only the proximal segment as described by Hartmann. The reestablishment of digestive continuity was done during a second stage procedure via an elective approach after Bouilly-Volkman's colostomy or via midline laparotomy after Hartmann colostomy. The variables studied were: age, sex, past history, diagnosis modalities, types of colectomy, intra-operative accidents, reestablishment of digestive continuity, and immediate postoperative course. A simple comparison of means and percentages was done.

RESULTS

AGE AND SEX

The mean age was 42 years and ranged from 20 to 78 years. There were 75 men (84%) and 14 women (16%).

PAST HISTORY

Twenty-four patients (27%) had a history of chronic constipation. In the rest, the past history could not be determined.

DIAGNOSTIC MODALITIES

After clinical examination, all patients had a plain film of the abdomen without preparation.

TYPE OF COLECTOMY

Eighty-eight patients (99%) had a midline laparotomy from the xyphoid cartilage to the pubis. Bouilly-Volkman's colostomy was done in 64% (n=57) of cases and a Hartmann procedure in 36% (n=32). One patient (1%) had a laparoscopic approach.

INTRA-OPERATIVE ACCIDENT

There was only one case of feces spillage into the peritoneal cavity which required toileting with a large quantity of physiologic serum.

REESTABLISHMENT OF DIGESTIVE CONTINUITY

The average duration before reestablishment of digestive continuity was 32 +/- 6 days with a maximum of 121 days. All anastomoses were performed manually. Colo-colic anastomosis was performed via an elective approach after Bouilly-Volkman's colostomy while colo-rectal anastomosis after Hartmann's colostomy was performed through a second laparotomy.

IMMEDIATE POST-OPERATIVE COURSE

The post-operative course was uneventful in 80% of cases (n=71). Eighteen patients (20%) had complications: these were 4 cases of peritonitis from broken sutures after anastomosis of Bouilly-Volkman's colostomy, 4 cases of digestive fistulae, 4 cases of evisceration and 6 cases of wound infection. No patient died.

COMMENTS

In the University Teaching Hospital Aristide le Dantec, volvulus of the sigmoid colon is a frequent cause of colectomy. It represented 58% of colectomies performed during the study period. Sani et al. found a 21% frequency of volvulus among patients with intestinal occlusion in Niamey hospital in Niger [2]. Elsewhere, the frequency varies from 64 to 80% of the total of colonic occlusion [3,4]. These figures highlight the importance of this condition which in the western countries mostly concerns elderly patients; however, in our regions, young patients are more predisposed [5]. Many hypotheses have been advocated to explain the etiopathogenesis, the most frequent including feeding habits, chronic constipation, dolichosigmoid colon and Chagas disease; genetic and racial factors are also in

consideration [4,6]. The diagnostic modalities of volvulus of the sigmoid colon are clinical and paraclinical. The clinical picture is clear, so we shall emphasize on the paraclinical modalities, especially radiologic findings. The diagnosis was made in 70% of cases on the plain film which showed the characteristic image of volvulus. In case of any doubts, the barium enema is the most frequently used test to make the diagnosis. However, computed tomography which has become very useful in digestive emergencies over the recent years, could help to make the diagnosis and outline the radiologic criteria of severity. This is why Delabrousse et al. think that the information CT scan offers is cardinal in choosing the best treatment option [7]. The only difficulty in our practice is the availability of this test in emergencies. In many studies, a plain x-ray film of the abdomen without preparation, alone, was sufficient to confirm the clinical diagnosis of volvulus of the sigmoid colon [2,5,8,9]. Concerning the immediate post-operative course, we found 80% good results. However, the results of treatment depend on the time before onset of management, the human expertise and materials available, and the experience of the surgical team. In the absence of signs of severity, the treatment option according to Schwartz et al. should be a first stage endoscopic detorsion, followed by ideal sigmoidectomy a few days later, if possible via laparoscopy during the same hospitalization period [1]. We tried this treatment option with success in one patient who fulfilled all the necessary criteria. Unfortunately, in our environment, very few patients can consult in or have access to specialized units before the sixth hour. Also, very few hospitals have endoscopy instruments in the Emergency Room, and/or a laparoscopy set. Thus, if in Europe, the tendency is to perform an ideal colectomy, in tropical areas, socio-economic difficulties would impose the choice of a two-stage colectomy [2, 8]. In our study, 99% of patients had a two-stage colectomy in accordance with the practice of the department with a morbidity of 20%. These complications such as wound infections, digestive fistulae, eviscerations and broken sutures have been reported by other authors [2,5,8,9]. We found neither deaths nor any long-term complication.

A previous study conducted in our department found a high mortality rate (31%) after ideal colectomy, when it was 5.4% after two-stage colectomy with 0% in the Hartmann group [5]. Yenon et al., in Abidjan (Côte d'Ivoire), found a mortality of 7.7% in the stomy group, and no deaths after ideal colectomy [10]. In the study by Ka et al., the morbidity was lesser in the ideal colectomy group; and the mortality

was less significant due to patient selection [8]. In a group of elderly patients, treated after 4 days without intestinal preparation, Sani et al. performed ideal colectomy and found a high mortality (19%) rate [2]. In a series of 136 patients with viable colon, Akan et al., did not find any statistically significant difference concerning the morbidity and mortality rate between one-stage and two-stage surgery, respectively; however, the duration of hospital stay was longer in the Hartmann group [11]. In Nigeria, Sule et al. exclusively performed one-stage surgery in 21 patients of which 19 had viable colon and 2 colon necrosis. Except for 2 cases with wound infection, they found neither fistula nor any death [12]. In Côte d'Ivoire, of 31 one-stage colectomies irrespective of the degree of colonic necrosis, Kaba Kanté et al. only found 4 deaths, all on necrosed colon [4].

It could be noted from these African studies, that it is not only the surgical technique which is the primordial prognostic factor, but also the viability of the colon which is directly linked to the duration of symptoms. Consequently, none of the two options should be considered a dogma. If the viability of the colon is good, one-stage sigmoidectomy is ideal; but if, on the contrary, the intestine is doubtful, necrosis or perforation is present, the two-stage surgery should be the preference.

CONCLUSION

Volvulus of the sigmoid colon is a frequent therapeutic emergency in our regions. In our department, the management has been codified and the results are satisfactory. The availability of human expertise and adequate materials, the duration of symptoms and the experience of the surgical team are factors which could influence the prognosis. In Africa, a prospective randomized multicenter study comparing the different techniques should

provide a consensus on the standard treatment modalities.

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