Original Article

Colorectal resection without mechanical colon cleansing: experience with 54 patients

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ABSTRACT: Introduction: Preoperative mechanical cleansing of the colon has been frequently questioned lately. The purpose of this study was to present the experience of our team with colorectal resection without conventional mechanical preparation of the large bowel. **Methods:** The study retrospectively evaluated 54 patients (mean age=59 (34–87) years old; 36 (66.7%) females and 18 (33.3%) males) who underwent elective colorectal resections without conventional mechanical preparation of the large bowel at the Hospital Santa Rosa in Cuiabá (MT), from January 2003 to December 2006. Outcome variables were length of stay and postoperative complications. **Results:** Mortality was 1.8% (one case). Median length of stay was four (2–12) days and mode was three days (n=17; 31.5%). No case of anastomotic dehiscence was observed. Postoperative complications occurred in six patients: serous collection of incision (two cases), partial dehiscence of abdominal wall requiring re-suture (two cases) and prolonged ileus (two cases). **Conclusion:** As observed in recent literature, routine preoperative mechanical bowel cleansing is no longer justified. Colorectal resection without bowel preparation is safe.

Keywords: colorectal surgery; preoperative care; anastomosis, surgical; postoperative complications; intestinal fistula.

RESUMO: Introdução: O preparo mecânico pré-operatório do cólon tem sido questionado nos últimos anos. O objetivo deste trabalho foi o de mostrar a experiência do nosso grupo na operação colorretal eletiva sem o uso do preparo convencional do cólon. **Métodos:** Foram estudados retrospectivamente 54 pacientes (idade mediana=59 anos (34–87 anos), sendo 36 (66,7%) do sexo feminino e 18 (33,3%) do sexo masculino) submetidos a ressecções eletivas do cólon e reto, sem preparo convencional, no Hospital Santa Rosa de Cuiabá (MT), no período de janeiro de 2003 a dezembro de 2006. As variáveis de resultados observadas foram: dias de internação e complicações pós-operatórias. **Resultados:** A mortalidade foi de 1,8% (um caso). A mediana dos dias de internação foi de quatro (2–12) dias e a moda foi de três dias (n=17; 31,5%). Não foi evidenciado nenhum caso de fístula anastomótica. As complicações pós-operatórias foram evidenciadas em seis (11%) casos: coleção serosa de parede (dois casos), deiscência parcial de parede com ressutura de parede abdominal (dois casos) e íleo prolongado (dois casos). **Conclusão:** A semelhança dos resultados na literatura recente, a prática mandatória do preparo pré-operatório convencional do cólon pode ser dispensada. A operação de ressecção colorretal sem preparo é segura.

Palavras-chave: cirurgia colorretal; cuidados pré-operatórios; anastomose cirúrgica; complicações pós-operatórias; fístula intestinal.

Study carried out at the Hospital Santa Rosa de Cuiabá – Cuiabá (MT) – Brazil.
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INTRODUCTION

Colon preparation is largely used as a preoperative procedure for elective colon and rectal surgery. In the United States[1], almost 99% of the surgeons use this practice, seeking to reduce the septic content of the colon. The purpose of the mechanical bowel cleansing is to prevent the potential risk of infection with the presence of stool during the surgery and problems affecting the healing process and the anastomotic integrity[2,3]. Therefore, the preoperative preparation would reduce the chances of stool leakage during the surgical procedure and, consequently, the risk of peritoneal cavity contamination[4].

However, the preparation is not well tolerated by patients and demands considerable time of the nursing team[5]. In addition, several randomized studies have shown that mechanical colon cleansing does not improve postoperative morbidity and may increase surgical site infection, anastomotic fistulas and hydroelectrolytic disorders[6-9]. Also, some randomized studies and meta-analyses have shown results that favor no preparation of the colon in several variables, such as wall infection, septic complications and anastomotic fistulas[10-13]. A recent randomized and multi-center study conducted in Europe with 250 patients also confirmed inefficiency of preoperative colon preparation in the prevention of postoperative complications. Among us, Santos et al.[14] and Fillmann et al.[6], in pioneer studies, showed more than ten years ago that colon preparation in colorectal surgery could be dispensable.

Although these recent studies show that colorectal preparation may be dispensable in elective surgery, most surgeons are insecure about abolishing the prescription of such procedure. This article shows the experience of our group in elective colorectal surgery without conventional colon preparation.

PATIENTS AND METHOD

The study retrospectively analyzed 54 patients that were submitted to elective colon and rectal surgery, without conventional preparation, at the Hospital Santa Rosa de Cuiabá (MT), between January 2003 and December 2006.

The patients were admitted between 6 pm and 8 pm the day before the procedure, and received antibiotic prophylaxis with metronidazole (500 mg, oral administration, each 8 hours) and liquid diet without residue. For colorectal lowering surgery, a 500 mL fleet enema was applied at 8 pm. During the induction of anesthesia, 1 g of cefotaxime and 500 mg of metronidazole were infused in all patients and this regimen was kept for 24 hours – cefotaxime each 12 hours and metronidazole each 8 hours.

The outcome variables analyzed were: length of stay and postoperative complications. Tables 1 to 3 show the diagnoses and respective procedures.

Table 1. *Distribution of cases by indication.*

Disease or Condition	Number of cases (%)
Cancer	27 (50)
Colonic diverticular disease	20 (37)
Crohn’s disease	2 (3.7)
Colostomy closure	2 (3.7)
Telangiectasia	1 (1.9)
Endometriosis	1 (1.9)
Colovesical fistula	1 (1.9)

Table 2. *Surgeries performed and number of cases.*

Surgeries	Number of cases (%)
Left colectomy	22 (40.7)
Rectosigmoidectomy with lowering	15 (27.8)
Right colectomy	11 (20.4)
Total colectomy	2 (3.7)
Hartman colostomy closure	2 (3.7)
Miles surgery	2 (3.7)

Table 3. *Type of Anastomosis.*

Anastomosis	Number of cases (%)
Mechanical	45 (83.3)
Manual	4 (7.4)
No anastomosis	5 (9.3)

All complications were observed up to day 30 after the surgery.

The statistical analysis of data used SSPS 8.0 pack. Comparisons were made between the results from the beginning of the investigation (2003) and the results obtained in the other years (2004–2006).

Length of stay between the two periods was evaluated using the Mann-Whitney test and expressed as median and variation values.

RESULTS

Between January 2003 and December 2006, 54 patients were submitted to elective colorectal resection, without conventional colon cleansing, at the Hospital Santa Rosa de Cuiabá (MT). Mean age of patients was 59 years (34–87 years), 36 (66.7%) were females and 18 (33.3%) were males.

Malignant neoplasm of the colon (n=27; 50%) was the most frequent indication, followed by colonic diverticular disease (n=20; 37%). The most frequent procedures were: left colectomy in 22 (40.7%) cases, rectosigmoidectomy with lowering in 15 (27.8%) cases and right colectomy in 11 (20.4%) cases. Mechanical anastomosis, with circular and/or linear stapler, was performed in 83.3% (n=45) of the cases.

Median length of stay was four (2–12) days and mode was three days (n=17; 31.5%). When comparing the year to length of stay, median of 5.5 days was obtained in 2003 and four days between 2004 and 2006 (p=0.01, Mann-Whitney test).

No case of anastomotic fistula was observed. In this study, only one death occurred due to multiple organ failure. Postoperative complications were observed in six (11%) cases: serous collection of incision (two cases), partial dehiscence of abdominal wall requiring re-suture (two cases) and prolonged ileus (two cases).

DISCUSSION

The results from the initial experience with the group without conventional colon cleaning showed that this practice is dispensable and that good clinical safety is ensured in colon and rectal surgery without using preoperative cleansing, even when involving anastomosis. Indeed, no mortality occurred and the incidence of morbidity was comparable to the current literature. In addition, the hospitalization period was short and patient was discharged from hospital around four days after admission. Thus, no convincing aspect was found based on the results of this study attesting the importance of preoperative colon cleansing in colorectal surgery.

Most surgeons that adopt colon cleansing justify that it reduces bacterial colonization and, consequently, the risk of infection and complications in anastomosis, due to the absence of solid stool[15]. However, several randomized studies[6-9,13,14] and meta-analyses[10-12] have consistently shown the opposite, i.e., that colon cleansing does not improve the results and that it may even increase the possibility of anastomotic dehiscence. Wille-Jørgensen et al.[10], for instance, when analyzing 9 controlled and randomized studies involving total 1,592 patients, 789 of them submitted to surgery without preoperative cleansing and 803 with colon cleansing, observed that the occurrence of anastomotic fistula occurred twice more often in the group submitted to preoperative cleansing (6 versus 3.2%; odds ratio (OR): 2.03; confidence interval (CI) 95%:1.28–3.26; p=0.003). Ram et al.[16], after obtaining similar results from 329 patients randomized for cleansing (n=164) or no cleansing (n=165) of the colon, recommend colon cleansing in two situations only: when small (<2 cm) polypoid lesions are present and when intraoperative colonoscopy is required to identify such lesions, and in resections with colorectal lowering. On the other hand, they recommend attention when performing colon cleansing in cases of tumors that occupy more than half the intestinal lumen, due to the risk of distension leading to acute abdomen.

In this study, 27.8% of the procedures performed were anterior resection with colorretal lowering, but no case of anastomotic fistula or septic complication was observed. Although not performed in this study, cleansing dehydrates the patient and, for this reason, it may lead to higher infusion of perioperative fluid. Patients that receive more perioperative intravenous fluid tend to have more postoperative complications[17].

Then, the conclusion of this study is similar to results presented in recent medical literature, which indicate that the practice of preoperative conventional and mechanical cleansing of the colon is dispensable and that colorectal surgery without preparation is safe.

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