Preliminary results of postoperative pain and complications after hemorrhoidectomy with harmonic scalpel

Resultados preliminares de dor pós-operatória e complicações após hemorroidectomia com bisturi harmônico

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ABSTRACT

Objective: To assess pain and to describe the complications after hemorrhoidectomy (Milligan-Morgan technique) using the harmonic scalpel. Methods: The sample was composed of 108 patients. The hemorrhoidal tissue was dissected and the vascular pedicle was sectioned using the harmonic scalpel (no ligation technique). Pain and postoperative complications rates were calculated. Results: Significant postoperative pain occurred in 3.7% of cases (use of opioid drugs). The postoperative complication rate was 9.2%; bleeding was observed in three cases (2.8%), infection in one case (0.9%), anal stenosis in one case (0.9%) and transitory urgency evacuation in five cases (4.6%). Conclusions: The Milligan-Morgan hemorrhoidectomy with harmonic scalpel is an attractive surgical technique owing to the low frequency of pain and postoperative complications.

Keywords: Hemorrhoids/surgery; Surgical instruments; Pain, postoperative; Postoperative complications

INTRODUCTION

Hemorrhoidal disease comprises one of the most common diseases in the Western world, and is treated effectively by surgical methods⁴. In spite of the good functional results, the traditional technique of Milligan-Morgan is recognized as a method that causes significant postoperative pain. For this reason, new surgical techniques have been sought to facilitate the dissection of the hemorrhoidal tissue and to reduce pain².

More recently, the harmonic scalpel has been used as an alternative in the surgical treatment of hemorrhoidal disease. This is a device that vibrates at a frequency of 55000 Hz (vibrations per minute), promoting coagulation and sealing of small and medium vessels, with minimal tissue lesion. This property reduces edema and the local inflammatory process, with pain alleviation¹³. However, little is known about postoperative pain and complications arising from the resection of hemorrhoidal tissue using the harmonic scalpel⁵.

The aim of this paper was to evaluate the pain and to describe the complications after hemorrhoidectomy using the harmonic scalpel.
METHODS
This study included 108 consecutive patients admitted to a private clinic between January 1998 and February 2004, with clinical diagnosis of hemorrhoidal disease grades III and IV. All patients were submitted to hemorrhoidectomy (Milligan-Morgan technique) by a single surgical and anesthetic team. Three patients were submitted to two procedures at different times. The sample was made up of 46 men (42.6%) and 62 women (57.4%), with a mean age of 47 years.

The patients were admitted to hospital on the same day of the surgical procedure and were not submitted to any type of colon preparation. The anesthetic routine comprised spinal blockage with bupivacaine and sedation with midazolan. After anesthetic blocking, patients received an endovenous dose of antibiotic (cephalotine 1 g).

The hemorrhoidal tissue was dissected with a harmonic scalpel, starting at the cutaneous-mucosa transition and progressing cranially up to a few millimeters above the pectineal line, where it was sectioned. The harmonic scalpel was used to section the pedicle (no ligation was performed). Muco-cutaneous bridges were left intact among healthy areas to prevent anal stenosis. The anorectal dressing was soaked in cinchocaine and removed roughly six to eight hours after the procedure. Each surgical act lasted an average of 20 minutes.

Postoperative analgesia was carried out with endovenous nonsteroidal anti-inflammatory (tenoxicam 40 mg/day) and analgesic (dipyrone 4 g/day) drugs. An opioid drug (nalbuphine 10 mg) was prescribed only if necessary, to complement analgesia at patients’ request. While the patients were at hospital, they received endovenous doses of cephalotine (4 g/day).

All patients were discharged on the first postoperative day and received tenoxicam (40 mg/day), dipyrone (4 g/day) and cephalaxine (2 g/day) orally, up to the 5th postoperative day. For analgesic rescue, tramadol given orally (maximum 200 mg/day) was prescribed if necessary. Patients were also instructed to perform perineal hygiene by sitting in a warm-water bath and application of topical anesthetic (cinchocaine) up to the 5th postoperative day. To absorb surgical secretion, the patients were instructed to use female sanitary towels. The first outpatient follow-up visit was on the 7th postoperative day, when digital dilation of the anus was performed on all patients. Return to professional activities was released on the 5th postoperative day and physical exercises from the 15th day. The patients were followed-up for at least one year.

RESULTS
One hundred and four patients (96.3%) did not demand opioid drug and four cases (3.7%) needed opioid drugs while still at hospital, in the immediate postoperative period.

Postoperative complications directly related to surgery were: bleeding, infection, stenosis and urgency evacuation (table 1). Significant postoperative bleeding occurred in three cases (2.8%) after discharge from hospital (around the 4th-5th day). One patient was seen at a private hospital (emergency service), and there was no need for admission or transfusion. Conservative treatment (compression and local ice) was sufficient for clinical control of bleeding.

In only one patient (0.9%) infection occurred at the surgical site. In this case especially, the patient presented a history of repetitive cryptitis before surgery. The patient was clinically treated at home with oral antibiotic therapy (ciprofloxacin 1.0 g/day + metronidazol 1.2 g/day, 7 days).

Postoperative stenosis of the anus occurred in one patient (0.9% of procedures), who had been submitted to hemorrhoidectomy six months before. In the first surgery, the hemorrhoidal tissue was not completely resected because it was huge, making it difficult to preserve the muco-cutaneous bridges.

No fecal incontinence was observed. Five patients (4.6%) referred urgency to defecate in the first three months, but without incontinence. The majority of patients reported improvement in intestinal constipation after hemorrhoidectomy. No case of postoperative anal fissure was observed.

A slight pinkish secretion was observed in the surgical wound up to three weeks after the procedure in all patients.

DISCUSSION
There are many options to treat hemorrhoidal disease described in the literature, ranging from simple clinical treatment (nutritional and hygienic information) to more complex surgical techniques, like the use of circular staplers\(^{(3,5)}\). Currently, surgical treatment is considered as the standard treatment for grade III and
IV hemorrhoids. The choice among the various surgical techniques available depends on the type of disease and the experience with a certain technique.

The pain after hemorrhoidectomy is universal and it is of unknown cause. It is believed that, in addition to the direct tissue lesion at the surgical site, the pain is also related to the involuntary reflex spasm of the internal sphincter (sacral plexus) and by the voluntary spasm of the external sphincter (pudendal nerve). The harmonic scalpel was initially used in laparoscopic procedures and, because of its excellent haemostatic capability, extended to the treatment of hemorrhoids. Due to high vibration frequency, this device promotes hemostasis and sealing of small and medium vessels, with the advantage of producing minimal tissue injury. The scalpel tip presents temperatures lower than 100°C. Like other authors, we believe that the smaller tissue lesion promoted by the harmonic scalpel, as well as the lack of ligation of the hemorrhoidal pedicle with suture, partly explain the low percentage of patients that needed opioid drugs to complement postoperative analgesia.

In this series, the time to return to activities after hemorrhoidectomy was short, ranging from five to seven days, almost half the period described in other studies (12 to 14 days). The rate of postoperative complication arising directly from hemorrhoidectomy was 9.2%. The most common complication was transitory urgency to defecate (4.6%), followed by spasm of the external sphincter (pudendal nerve). Infection at the surgical wound and anal stenosis were rare events. No complication was harmful to any patient. The complication rate was similar to that presented in the literature.

When comparing the harmonic scalpel with other hemorrhoidal resection techniques (Milligan-Morgan, resection by electrocauterization, resection with bipolar tongs), there was lower postoperative pain intensity and less medication consumption. However, there are other studies that did not manage to demonstrate the benefit of using the harmonic scalpel in reducing postoperative pain.

The circular stapler presents some advantages in relation to the harmonic scalpel. In the first week, the postoperative pain seems to be less intense with the use of staplers. However, this advantage disappears over time and the intensity of pain is the same approximately 4-6 weeks after hemorrhoidectomy. The other advantage of the stapler is related to postoperative secretion. While the harmonic scalpel promotes an exudation (in this series, up to a maximum of three weeks), this phenomenon does not occur with the use of staplers.

We believe that the great disadvantage of circular stapler for treating hemorrhoidal disease is the occurrence of potentially serious complications, which were described in the literature: hemoperitonium, lesions to neighboring structures, permanent damage to the sphincters and pelvic sepsis. Multicenter studies have shown that complications occur even at the hands of experienced surgeons accustomed to the technique. Although this technique is feasible, further studies should be conducted to better characterize the complications arising from the use of stapler.

To sum up, we believe that resecting the hemorrhoidal tissue with the harmonic scalpel represents an advance in the treatment of hemorrhoids due to technical easiness, reduced surgical time and the low rate complications. Furthermore, this technique does not cause intense postoperative pain, which is controlled, in the majority of cases, with topical anesthetic, anti-inflammatory and analgesic medications.

CONCLUSIONS

The Milligan-Morgan hemorrhoidectomy with harmonic scalpel seems to be an attractive surgical technique owing to the low frequency of pain and postoperative complications. However, further prospective controlled studies are needed for more precise conclusions.

REFERENCES

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