

STAPLED HEMORRHOIDECTOMY FOR THE TREATMENT OF HEMORRHOIDS

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ABSTRACT – *Background* – The use of circular staplers in the treatment of hemorrhoidal disease is known as a simple procedure, with low morbidity, less post-treatment pain and with the same efficacy when compared to the classical hemorrhoidectomy. *Aim* – Analyze the operative technique, intra-operative and immediate postoperative complications and late results in 100 patients treated for hemorrhoid disease by stapling technique. *Patients and Methods* – The group included 53 males and 47 females with mean age of 49.8 years, operated during the period June 2000 to June 2002 in the “Hospital Universitário” (São Paulo University Hospital) and “Hospital Sírio Libanês”, in São Paulo, SP, Brazil. *Results* – The majority of patients (78%) were discharged on the first post-operative day. Eight patients required supplementary analgesia and were given intramuscular diclofenac sodium and four of them received intramuscular tramadol. One intraoperative complication was bleeding which was difficult to control and required a blood transfusion. One patient was reoperated on the first postoperative day due to intermittent and persistent bleeding, however without hemodynamic changes or a drop in hematocrit. Two patients presented hemorrhoidal thrombosis in the early postoperative stage. The postoperative follow-up displayed: recurrence of prolapse, five cases (5%); anal sub-stenosis, two cases (2%); anal fissure, one case (1%); persistent pain, two cases (2%). Seven reoperations were performed: one due to bleeding, one due to sub-stenosis and five due to recurrence of hemorrhoidal prolapse and persistence of symptoms. *Conclusion* – Stapling is simple to accomplish, has low postoperative pain and rate of complications, however, the incidence of late reoperations is rather high and therefore major follow-up for better analysis is required.

HEADINGS – Hemorrhoids, surgery. Surgical staplers. Suture techniques. Pain, postoperative.

INTRODUCTION

Most of the patients affected by hemorrhoidal disease complain of prolapsing hemorrhoids and bleeding in the stool. They are often anxious and concerned about a surgical approach for their condition. Nevertheless after criterious anamnesis and a thoroughful proctologic examination, the vast majority of these patients can be conveniently and adequately treated in a conservative manner on the basis of a high fiber diet, and proper toilet habits and anal cleaning after passing stool and topical medication.

Surgery is offered when clinical treatment and/or minor ambulatory procedures (i.e. rubber band ligation, sclerotherapy or photocoagulation) have failed.

Formal indication takes place in more advanced disease (grades 3 and 4 of prolapsing hemorrhoids).

Excision of all hemorrhoidal tissue with somatic enervation is achieved with conventional hemorrhoidectomy, either with an open technique as described by MILLIGAN and MORGAN⁽¹⁰⁾, in 1937, or in a closed manner, as described by FERGUSON et al.⁽⁴⁾, in 1959. Despite low complication rates and high efficacy of these procedures, severe pain may arise

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postoperatively due to manipulation and removal of innervated anoderm below dentate line.

This may become a major issue, delaying patients return to work and usual activity.

Aiming to reduce postoperative pain and still following THOMPSON's⁽¹⁶⁾ concept about hemorrhoids physiopathology, LONGO⁽⁸⁾, in 1998, proposed a stapled procedure as a radical alternative for the surgical treatment of prolapsing hemorrhoids. The goal of this new form of operative approach is not to excise hemorrhoids but to replace prolapsed anorectal mucosa in its original anatomical position by means of removing and stapling redundant mucosa and thus decreasing hemorrhoidal vessels load flow. Less postoperative pain is there expected since there is no perianal wound and rectal wall above the dentate line has no somatic endings.

Great enthusiasm followed the procedure's description⁽¹⁾ and many essays⁽⁵⁾ comparing it to earlier approaches were published. They showed evidence of effectiveness together with pain reduction and earlier return to work and every day activity. Long term results and complications are not get well established⁽¹⁴⁾, with a number of publications showing prolonged post-operative pain⁽⁶⁾, hemorrhoidal prolapse and anal stenosis in the follow-up.

The present study aims to evaluate immediate results and follow-up of stapled hemorrhoidectomy comparing our results with published data, as far as technical difficulties, postoperative pain, bleeding, continence, complications and patient's satisfactions are concerned.

PATIENTS AND METHODS

The authors operated 100 patients with symptomatic hemorrhoids with grade 3 or 4 of prolapse in the surgical clinic of the "Hospital Universitário", of University of São Paulo (HU-USP) and the "Hospital Sírío Libanês", in São Paulo, SP, Brazil between June, 2000 and June, 2002.

Preoperative evaluation included anamnesis physical and complete proctological examinations (including ano-rectoscopy or rectosigmoidoscopy) as well as routine laboratory tests. Patients presenting anal fissure, fistulas, hemorrhoidal thrombosis, psychiatric disorders and immunosuppression conditions were excluded.

Patients were admitted the evening before surgery at the HU-USP due to hospital routine and, on the day of surgery when at the "Hospital Sírío Libanês". In the morning of the surgery a phosphate solution enema was administered preoperatively. At the time of anesthesia, the majority of patients were given 500 mg of metronidazole or, according to surgeons preference, ciprofloxacin intravenously. Surgery was performed under epidural anesthesia in 85 cases and under general anesthesia in 15 cases.

Patients were operated in lithotomy position. An anal retractor was used for prior investigation of piles followed by insertion of the device's anal dilator. Purse-string suture with 2-0 polypropylene was performed at least 2-4 cm above the dentate line, including mucosa and submucosa. The 33 mm circular stapler (PPH 33 mm, Ethicon, Endo-Surgery, Ohio, USA), lubed and totally open was introduced in the anal canal, up to a level above the suture previously performed. Next, suture was tightened and the device closed, so as to incorporate part of the rectal mucosa. After shutting, the stapler was kept closed for 30 seconds to help achieve hemostasis. The stapling line was then inspected and, when necessary, additional hemostatic suture with 3-0 poligalactin was performed. All removed material was sent for hystopathological examination.

Postoperatively, 100 mg ketoprofen intravenously twice a day was used for analgesia within the first 24 hours.

Per oral 1,0 g dipirone was administered according to patient's needs for additional analgesic. Each dose was registered and total amount needed counted in the end of the first postoperative week.

For further analgesia, either 50 mg sodium diclofen or tramadol every 8 hours was administered when required. Postoperative discharge was allowed in the absence of severe pain and did not depend on bowel movements.

Patients were followed weekly in the first 2 months and once a month after the initial period. Data on perianal pain, bleeding, temperature, analgesic use, persistent prolapse and patient's satisfaction were actively asked on all times during follow-up.

RESULTS

Patient's age ranged between 20 and 82 years (median 49.8). There were 53 males and 47 females (Table 1).

Preoperatively, 84.4% of patients complained of anal bleeding and 53.3% of perianal tenderness. Constipation was referred in 22.2% of patients (Table 2). In 82 patients proctological examination showed grade 3 hemorrhoids. Fourth degree hemorrhoids was found in 18 cases (Table 3).

All patients were operated on lithotomy or gynecological position – 85 patients were given epidural anesthesia and the remaining 15 were operated on under general anesthesia.

Intraoperative additional hemostasis was required in 20 cases (20%).

In one case there was severe arterial bleeding that required blood transfusion.

Operative time duration (from anesthesia up to final wound dressing) ranged between 15 and 150 minutes (median of 38 minutes). The longest operative time was observed in the case that showed severe bleeding.

TABLE 1 – Sex

Sex	n	%
Male	53	53
Female	47	47
Total	100	100

Mean age = 49.8 years (20-82)

TABLE 2 – Symptoms

Clinical presentation	%
Bleeding	84.4
Pain	53.3
Obstipation	22.2

TABLE 3 – Classification of the hemorrhoids

Hemorrhoids	n	%
Grade 3	82	80.0
Grade 4	18	20.0
Total	100	100.0

Hospitalization time ranged between 1 and 3 days (median time was 34 hours). Seventy eight patients were discharged on the first postoperative day, without severe pain.

In 45 cases (45%) the first bowel movement occurred while patients were still in hospital.

No evidence of internal sphincter muscle was found in any of the specimens submitted to histopathology.

Postoperative pain was evaluated by number of doses of analgesics (1.0 g orally dipirone). Median number of doses for pain control was 1.43 (range 0-5 doses). Twelve patients needed either diclofenac (eight cases) or tramadol (four cases) for additional analgesic. Four patients complained of discrete bleeding that stopped spontaneous by in up to 3 days. Only one patient required intervention for bleeding control.

There was no perianal or suture infection or temperature postoperatively.

Late postoperative complications are related on Table 4.

TABLE 4 – Postoperative complications

	n	%
Perianal thrombosis	2	2
Prolapse recurrence	5	5
Anal stenosis	2	2
Fissure	1	1
Persistent pain	2	2
Bleeding	2	2

Anal stenosis arose in two cases. One was treated conservatively with laxatives and fiber intake and the other required anal dilatation on the 60th postoperative day under anesthesia.

In five cases with symptom recurrence, further surgery was required around the 4th month of follow-up (Table 5).

TABLE 5 – Reoperations

	n	%
Hemorrhoids recurrence	5	5
Bleeding	1	1
Anal stenosis	1	1
Total	7	7

DISCUSSION

Easier postoperative pain control held the stapling procedure widely accepted by surgeons. Lack of data concerning effectiveness and safety in the late follow-up period brought criticism into the scenario.

As expected, the foremost advantage of the procedure was pain reduction.

Eighty-six point six per cent of patients used only ordinary analgesics to enhance pain relief. Additional medication was required in 13.3% and 2.2% persisted with pain into the late postoperative follow-up, with chronic use of analgesics and anti-inflammatory medication. In these patients examination enabled to note that the suture line was too close to the dentate line.

Several randomized essays proved that stapled hemorrhoidectomy was superior to conventional techniques in terms of postoperative pain, duration of hospital stay and time to return to normal activities.

MEHIGAN et al.⁽⁹⁾ used a visual scale for pain scoring. They confirmed that stapled hemorrhoidectomy patients showed the least mean values on the scale when compared to open Milligan-Morgan hemorrhoidectomy. Nevertheless, functional results and symptom's relief were similar for both procedures. ROSWELL et al.⁽¹³⁾ also compared open hemorrhoidectomy with the stapled procedure and found significant postoperative pain reduction and a relevant decrease in hospital stay and time to return to work. KHALIL et al.⁽⁷⁾ studied 40 patients who were randomized either to conventional closed Ferguson's technique on to stapled hemorrhoidectomy and found similar results. In our study there were no stapling failures, however, 20% of our patients required further hemostatic procedures and, in one case, bleeding was severe and difficult to manage, and another case was reoperated at 1st postoperative day. Four patients had slight bleeding in the first postoperative days with spontaneous resolution. LONGO⁽⁸⁾ in their series had a 3.4% hematoma in the submucosa.

MOLLOY and KINGSMORE⁽¹¹⁾ reported a case of sepsis following stapled hemorrhoidectomy and suggested routine prophylactic antibiotics. In our trial, all patients received either metronidazole or ciprofloxacin prior to the procedure and we had no septic complications. None of our patients developed fever or suture line infection.

SHALABY and DESOKY⁽¹⁵⁾ in their series of 200 patients, randomized either to conventional Milligan-Morgan hemorrhoidectomy or stapled hemorrhoidectomy, observed significant reduction in anal canal pressures and continence to saline solution in the conventional group but not in the stapled group. KHALIL et al.⁽⁷⁾, however, found significant rest and squeeze pressure reduction with stapled hemorrhoidectomy but there were no clinical manifestations of incontinence in their series. None of our patients had any complain concerning continence disorders in the follow-up.

Long term results and complications with stapled hemorrhoidectomy are still uncertain. SHALABY and DESOKY⁽¹⁵⁾, after 1 year of follow-up, observed a 1% rate of prolapse incurrence, 2% of anal stenosis and 3% of perianal thrombosis in the stapled patients, compared with 2% recurrence rate, 5% anal stenosis and 3% anal thrombosis in the conventional excised group.

BEATTIE and LOUDON⁽²⁾ hold insufficient mucosal resection responsible for stenosis and propose simple anal dilatation as mean of treatment.

CHEETHAM et al.⁽³⁾ reported persistent pain and urgency in 31% of patients 15 months following stapled hemorrhoidectomy.

The reason was not well elicited, although smooth internal sphincter muscle incorporated in the removed specimen and purse-string suture confectioned close to the dentate line may play an important role.

In our trial, there was persistent pain in two cases (2%) and one patient reported urgency. Histopathology of removed specimens showed submucosa and muscularis mucosal in all cases, but no sphincter fibers in any of them. In the two patients with persistent pain, we suspected of excessive proximity of the suture line to the dentate line (<2 cm).

Other late complications observed in our series were close to SHALABY and DESOKY's⁽¹⁵⁾ reported data, with 4.4% rate of anal stenosis (that required anal dilatation in one case) and 4.4% rate of perianal thrombosis. NAHAS et al.⁽¹²⁾ in a series of 473 patients undergoing open conventional hemorrhoidectomy reported on a rate of 1.2% of infection, 1.4% of bleeding and 0.2% of substenosis, however they did not report on their recurrence rate.

Most trials have showed that stapled hemorrhoidectomy is superior to conventional procedures as far as less postoperative pain, earlier discharge and return to daily activities, and less analgesics required are concerned. Earlier discharge from the hospital and return to work seem to compensate for the high cost of the stapling device. Long term results have been successful provided the surgical technique is meticulously followed. There is some evidence that early enthusiasm and fast acceptance of this new procedure by the surgeons may have masked the existence of a learning curve, enhancing some of the earlier difficulties encountered to match or even superate conventional procedure's results.

Nahas SC, Borba MR, Brochado MCT, Marques CFS, Nahas CSR, Miotto-Neto B. Tratamento da doença hemorroidária pela técnica de grampeamento: análise de 100 casos. *Arq Gastroenterol* 2003;40(1):35-39.

RESUMO – Racional – O uso dos grampeadores circulares no tratamento da doença hemorroidária é tido como simples, de baixa morbidade e pouca dor pós-operatória, associado à eficácia semelhante ao da hemorroidectomia clássica. **Objetivo** – Análise da técnica operatória, as complicações transoperatórias, pós-operatórias imediatas e os resultados tardios de 100 pacientes tratados de doença hemorroidária pela técnica de grampeamento. **Pacientes e Métodos** – Foram operados 53 homens e 47 mulheres com idade média de 49,8 anos, no período de junho de 2000 a junho de 2002 no Hospital Universitário da Universidade de São Paulo e no Hospital Sírio Libanês, São Paulo, SP. **Resultados** – A maioria dos pacientes teve alta hospitalar no 1º dia do pós-operatório. Oito pacientes receberam analgesia complementar com diclofenaco sódico intramuscular e quatro doentes receberam tramadol intramuscular. Como complicação transoperatória houve um sangramento de difícil controle, sendo necessária transfusão sangüínea. Um paciente foi reoperado no primeiro pós-operatório por apresentar sangramento intermitente e persistente, porém sem alterações hemodinâmicas ou queda do hematócrito. Dois pacientes apresentaram trombose hemorroidária nos primeiros dias após a cirurgia. No seguimento pós-operatório encontraram-se: - recidiva do prolapso: cinco casos (5%); - sub-estenose anal: dois casos (2%); - fissura anal: um caso (1%); - dor persistente: dois casos (2%). Foram realizadas sete reoperações: uma por sangramento, uma por subestenose e cinco por recidiva do prolapso hemorroidário e persistência dos sintomas. **Conclusão** – A técnica de grampeamento é de fácil execução, apresenta pouca dor pós-operatória e baixo número de complicações, porém a incidência de reoperações tardias não é pequena e necessita de período de acompanhamento maior para melhor avaliação.

DESCRITORES – Hemorróidas, cirurgia. Grampeadores cirúrgicos. Técnicas de sutura. Dor pós-operatória.

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Recebido em 27/8/2002.

Aprovado em 5/12/2002.