Is Stapled Hemorrhoidectomy a Safe Procedure for Third and Fourth Grade Hemorrhoids? An Experience at Civil Hospital Karachi

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Abstract Hemorrhoids are amongst the most frequent anorectal conditions affecting approximately 4–36 % of the general population. The study was carried out to assess the clinical consequences of stapled hemorrhoidectomy comparing results with other published literature regarding postoperative pain, bleeding, incontinence, and other complications. A total of 120 patients were included in this study with symptomatic grade 3 or 4 prolapsed hemorrhoids, who underwent stapled hemorrhoidectomy from January 2006 to January 2012 at the Civil Hospital Karachi, Pakistan. In 92 patients (76.6 %), proctological examination showed grade 3 hemorrhoids. Fourth degree hemorrhoids were found in 28 cases (23.4 %). Hospitalization time ranged between 1 and 3 days (median time was 34 h). Seventy-eight patients were discharged on the first postoperative day, without severe pain, and the remaining 42 patients were discharge on the third day. Two cases of postoperative pain and thrombosis were found as postoperative complications. Stapled hemorrhoidectomy is a safe and quick procedure associated with less pain, better outcome, and early recovery with shorter hospital stay.

Keywords Hemorrhoids · Staple hemorrhoidectomy · Post operative pain · Post operative complications

Introduction

Hemorrhoids are amongst the most frequent anorectal conditions affecting approximately 4–36 % of the general population [1, 2]. Hemorrhoids are actually anal cushions that turn into pathological state, and they may present with anal bleeding, pain, and something coming out from the anus [1].

Although many advancements that have occurred in the management of colorectal diseases, there have been few amendments in the management of hemorrhoidal diseases yet. Usually, first- and second-degree hemorrhoids can be treated easily and effectively in a conservative approach by dietary modifications and appropriate medications [3]. But surgical interventions are required for more severe hemorrhoids (third- and fourth-degree hemorrhoids) for which open Milligan-Morgan [4] and the closed Ferguson [5] methods are standard surgical procedures. Unfortunately, these methods are associated with high incidence of complications, including urinary retention, hemorrhage, constipation and fecal impaction, prolonged wound healing, and significant postoperative pain because of the wide external wounds in the sensitive anal skin [2, 3].

To reduce the postoperative complications, Dr. Antonio Longo [6] in 1998 proposed a stapled procedure as an alternative for the surgical hemorrhoidectomy, also known as circular stapled rectal mucosectomy. The aim of this new operative approach is to reduce the size of internal hemorrhoids by interrupting their blood supply, therefore reducing the size of the vascular cushions and reducing the rectal mucosa for the potential of prolapse. This procedure is associated with less postoperative pain as there is no perianal wound and the rectal wall above the dentate line has an insensitive mucosa.

Several studies [6–9] have found that Longo's procedure is a simple, safe, and effective method that results in reduced postoperative pain, early recovery, and shorter hospital stay. Therefore, the rationale of this study was to assess clinical

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consequences of stapled hemorrhoidectomy comparing results with other published literature regarding postoperative pain, bleeding, incontinence, and other complications.

Patients and Methods

Total 120 patients were included in this study with symptomatic grade 3 or 4 prolapsed hemorrhoids, who underwent stapled hemorrhoidopexy in surgical units 2 and 3 from January 2006 to January 2012 of the Civil Hospital Karachi, Pakistan.

Preoperative evaluation included general physical and complete proctological examinations (including anorectoscopy or rectosigmoidoscopy) as well as routine laboratory tests. Patients presenting with thrombosed hemorrhoids, concomitant perianal fistula, fissures or abscess, psychiatric disorders, and those undergoing a second procedure were excluded from the study.

Patients were admitted 1 or 2 days before surgery due to hospital routine. On the day before surgery, all patients had phosphate solution enema per rectum. At the time of anesthesia, 500 mg of metronidazole and 500 mg of ciprofloxacin were given intravenously. Surgery was performed under spinal anesthesia in 85 cases and under general anesthesia in 35 cases by consultant surgeon or under supervision of a consultant surgeon.

Stapled hemorrhoidopexy procedure was performed according to Longo's technique [6]. All patients were operated in lithotomy position. After insertion of an anal dilator in the anal canal, a purse-string suture is placed 4 cm above the dentate line [10]. Subsequently, a circular stapler is introduced transanally. The anvil of the device is positioned proximal to the purse-string suture, and the suture is tied down onto the anvil. Retraction of the suture pulls the attached rectal mucosa into the stapler. Closure of the anvil and firing of the circular stapler (PPH033 Ethicon Endosurgery) simultaneously excises a ring of mucosa proximal to the hemorrhoid(s), thus interrupting the blood supply [8] but maintaining continuity of the rectal mucosa [11]. After shutting, the stapler was kept closed for 30 s to help achieve hemostasis. The stapling line was then inspected, and when necessary, additional hemostatic suture with 3-0 polyglactin was performed. All removed materials were sent for histopathological examination.

Postoperatively, intramuscular injection of 75 mg of diclofenac or 1 g of dipyron given orally was used for analgesia within the first 24 h. For further analgesia, intramuscular diclofenac or tramadol was given when needed.

Pain was assessed using a visual analog scale (VAS) (0 indicates no pain and 10 indicates maximum pain) Pain scores were evaluated 12 h later and on the next two consecutive postoperative days by a doctor on duty.

At discharge from the hospital, the patients received lactulose (20 mL daily), oral antibiotic (metronidazole and ciprofloxacin), and basic analgesia (acetaminophen) prescribed as to be taken when needed and patients were advised

Table 1 Characteristics of patients

Characteristics	Number	Percentages
Male	83	69.1
Female	37	30.9
Degree of hemorrhoids		
3rd degree	92	76.6
4th degree	28	23.4
Total patients	120	100

Mean age 49.8 years (20–82)

to report the episode of pain; 90 % of patients were discharge from the hospital after 3 days. Patients were followed up 2 weekly in the first month, once a month for 6 months, and then every 4 months for 1 year.

Patient data on operative time, hospital stay, postoperative analgesic requirements, and complications such as perianal pain, bleeding, persistent prolapse, and patient's satisfaction were actively noted during follow-up on proforma. Descriptive statistics were computed and analyzed by SPSS.

Results

A total of 120 patients were included in this study. Patients' ages were between 20 and 82 years (mean age 49.8 years). There were 83 males (69.1 %) and 37 (30.9 %) females. The details are in Table 1.

Preoperatively, 84.4 % of patients complained of anal bleeding and 53.3 % of perianal tenderness. Complaint of constipation was in 82.2 % of patients. In 92 patients (76.6 %), proctological examination showed grade 3 hemorrhoids. Fourth-degree hemorrhoids were found in 28 cases (23.4 %). The details of preoperative symptoms are in Table 2.

Eighty-five patients were given spinal anesthesia, and the remaining 35 were operated under general anesthesia. Intraoperative additional hemostasis was required in 20 cases (16.7 %).

Operative time duration (from anesthesia up to final wound dressing) ranged between 15 and 50 min (median of 32 min). The longest operative time was observed in the case that showed severe bleeding.

Hospitalization time ranged between 1 and 3 days (median time was 34 h). Seventy-eight patients were discharged on the first postoperative day, without severe pain, and the remaining 42 patients were discharge on the third day.

Table 2 Symptoms before operation

Clinical symptoms	Percentages
Anal bleeding	84.4
Perianal tenderness	53.3
Constipation	82.2

Table 3 Reoperations

Reasons	Number	Percentages
Hemorrhoid recurrence	5	4.16
Anal stenosis	1	0.83
Bleeding	1	0.83

Postoperative pain was evaluated by the number of doses of analgesics (75 mg diclofenac given intramuscular or 1.0 g dipyron given orally). The median number of doses for pain control was 1.43 (range 0–5 doses). Only two patients reported postoperative pain after 48 h of procedure while on analgesics and discharged, and 12 patients required a single additional dose of diclofenac (eight cases) or tramadol (four cases) after discontinuation of analgesia in the first 24 h postoperatively during hospital stay. Four patients complained of occasional bleeding that stopped spontaneously in up to 3 days. Only one patient required intervention for bleeding control. The details of reoperations are in Table 3.

There was no perianal or suture infection or temperature postoperatively. The details of postoperative complications are in Fig. 1.

Discussion

The most important disadvantage of conventional hemorrhoidectomy is postoperative pain [12] while our study found only two cases of postoperative pain, which has always been the most imperative dilemma for surgeons and it signifies one of the most worried conditions for surgical treatment of anorectal conditions like hemorrhoids. Postoperative complications other than pain include urinary retention, postoperative bleeding, sepsis, wound breakdown, and unhealed wound and loss of anal sensation, mucosa prolapse, anal stricture, and fecal incontinence [12].

A new method to specifically gain patients' satisfaction and less pain, introduced by Longo [6] in 1998 is "stapled hemorrhoidectomy" which showed better results and early recovery. Due to less postoperative pain, this procedure has been widely accepted by most surgeons. Different clinical trials between stapled and the Milligan-Morgan procedures have shown that stapled hemorrhoidectomy (SH) is associated with less complications, post operative pain, early recovery, earlier return to work, and high patient satisfaction with this procedure [8, 9].

An improvement in regard to postoperative pain and patient comfort has been found for stapled hemorrhoidopexy compared with other conventional methods in many studies [8, 9, 13]. The literature reveals controversial opinions about stapled hemorrhoidopexy; some suggested that it is less efficient than the conventional hemorrhoidectomy and others suggested that it is more efficient, but one thing is consistent with both comparisons—that SH is associated with less postoperative pain and with patients' satisfaction regardless of the other complications [8, 9]. Its advantage is lying mainly in the less postoperative pain, reduced total operation time, and earlier recovery, but several studies found higher rates of reoperation and recurrent prolapse [14, 15]. The rate of prolapse in our study is 4.16 %, and other complications were less significant for stapled hemorrhoidectomy.

The widespread conversation of stapled hemorrhoidectomy has also been provoked by several publications regarding complications. A systemic review published in 2006 has reported seven cases of sepsis after stapled hemorrhoidectomy [16]. Another study reported that a case of sepsis was found following stapled hemorrhoidectomy and that study suggested routine preoperative antibiotics [17]. In our study, all patients received metronidazole or ciprofloxacin undergoing for procedure, so none of our patients developed sepsis or any other infection.

The complications after stapled hemorrhoidectomy as reported by Shalaby and Desky [18] include the recurrence rate of prolapse in 1 %, anal stenosis in 2 %, and perianal thrombosis in 3 % of patients after stapled hemorrhoidectomy which

Fig. 1 Postoperative complications

is comparable to our study. In our study, two patients had a complication of bleeding but transfusion was not required. Thrombosis was found in two (1.6 %) patients as a complication of SH. A study conducted by Ravo et al. [19] has showed that thrombosis as an immediate complication was found in 2.3 % and as a late complication in 0.4 % patients.

A study conducted by Eric et al. [20] showed that out of 37 patients who underwent the SH procedure, only three patients were readmitted to the hospital for postoperative complications, two for bleeding, and one for urinary retention, and no patient had a complaint of postoperative pain; while in our study, four patients had postoperative bleeding problem, two patients reported postoperative pain, and none had urinary retention.

As anticipated, the primary advantage of the procedure was pain reduction. Mehigan et al. [8] have shown that stapled hemorrhoidectomy patients showed the least mean values for pain on the visual analog scale when compared to the Milligan-Morgan procedure. Another study also found similar result when comparing both SH and MMH [9]. A study conducted by Riaz et al. [21] reported that out of 66 patients, 65 (98.48 %) were discharged on the day of operation after SH, and that study have shown interest in adopting this procedure for further hemorrhoid surgeries.

On the basis of our study results, we recommend that stapled hemorrhoidectomy is a safe and quick procedure associated with less pain and shorter hospital stay.

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