ORIGINAL ARTICLE

Effectiveness of Procedure for Prolapse and Hemorrhoids in Immediate Postoperative Period

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ABSTRACT

Objective — *To document the early outcome of stapled hemorrhoidopexy, the procedure for prolapse and hemorrhoids (PPH).*

Study design — *Descriptive case series.*

Place & Duration of study — *Rehman Medical Institute (RMI), Peshawar; from May 2012 to May 2013.*

Methodology — *A total of 24 patients requiring surgical treatment for prolapsing hemorrhoids of degree II and III were included in the study. Outcome measures were postoperative pain, bleeding, sepsis, urinary retention, relief of preoperative symptoms, operation time and length of hospital stay.*

Results — *Mean age of patients was 46.8 year. All surgeries were performed under spinal anesthesia. Mean surgical time was 22.5 minutes. The average distance between the stapling line and the dentate line was 2.6 cm. Postoperative pain at rest and during defecation was mild to moderate after PPH. Healing time was shorter after PPH and no patient had perioperative or postoperative bleeding.*

Conclusions — *Postoperative pain was mild to moderate in majority of patients. There were no intraoperative or postoperative complications. PPH was a safe procedure and resulted in swift recovery and earlier return to work.*

Key words — *Hemorrhoids, Stapled hemorrhoidopexy , Postoperative pain.*

INTRODUCTION:

Hemorrhoids are a common anorectal problem with a prevalence of 4% in general population.[1] Several surgical options are available. Some of them are named after their promoters e.g. Milligan-Morgan (MM), and Ferguson.[2,3] They have a well-known long-term efficacy but major drawbacks are postoperative pain, protracted wound healing, postoperative bleeding, postoperative discomfort and prolonged sick leave. In order to avoid the postoperative drawbacks of hemorrhoidectomy, a surgical treatment for prolapsing hemorrhoids has been described by Longo.[4] This technique has been named 'Procedure for Prolapse and Hemorrhoids' (PPH), also known as stapled hemorrhoidopexy.[5]

The principle of PPH differs from conventional techniques as it does not involve excision of hemorrhoidal cushion but instead there is excision of mucosa above the prolapsing cushion using a circular stapler device which devascularizes and relocates the mucosal cushion. There are several publications which have documented the advantages of this technique over conventional techniques.[6] There have been several reports which have documented various complication of this procedure as well.[7] There is little evidence regarding use of this technique in treating hemorrhoids in our local setup. The objective of this study was to evaluate effectiveness of PPH with regard to immediate and short-term postoperative complications.

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METHODOLOGY:

A descriptive case series was conducted in the Department of Surgery, Rehman Medical Institute Peshawar from May 2012 to May 2013. All patients with age greater than 18 years, ASA (American Society of Anesthesiologist) grade = 2 having internal hemorrhoidal disease with prolapse of degree II and/or III were included. Patients with hemorrhoids of degree I and IV, previous anal surgery, radiotherapy, inflammatory bowel disease or any concomitant anorectal diseases like anal fissure, anal fistula, anal tumor and perianal chronic dermatitis, were excluded.

All surgeries were performed under spinal anesthesia. The main outcome measures were postoperative pain, bleeding, sepsis, urinary retention, relief of preoperative symptoms, operation time and hospital stay. Postoperative pain was assessed using Visual Analog Scale (VAS). Pain scores between 2-4 was considered as mild, 5-7 as moderate and 8-10 as severe.

All patients received rectal enema as routine bowel preparation in morning of day of surgery. Surgery was performed in lithotomy position. Standard PPH technique was performed using Ethicon Endo-Surgery® device. After reduction of prolapse, the Circular Anal Dilator (CAD33) was inserted. A purse-string suture was taken using a purse-string suture anoscope (PSA33) with polypropylene 2/0, taking bites of mucosa only. The hemorrhoidal circular stapler (HCS33) was then introduced and closed so that the prolapse was reduced and the head of the stapler fully positioned in the anal canal. After maximal closure, the stapler was fired and awaiting time was observed before opening and removing the stapler. Hemostasis was secured by sutures, electrocautery or both, when needed. The position of the stapling line was recorded. Lignocaine gel packing was done at the end of procedure. The excised doughnut was examined to see whether it was complete or not.Patients were allowed to take orally 3 hours after procedure. Analgesics were dispensed as per need of the patient and intravenous ketorolac (30 mg) was used. The gel packing was removed 24 hours after procedure or earlier, if patient felt the desire to defecate.

RESULTS:

Twenty-four patients were included in the study. There were 20 males and 4 females. The preoperative complaints were bleeding per rectum (49%), constipation (45%), perianal itch/pain (4%) and prolapsed hemorrhoid (2%). The mean age of patients was 46.8 year. The minimum age was 21 year and maximum 72 year. The mean surgical procedure duration was 22.5 minutes, which ranged from 14 minutes to 35 minutes. In all surgeries, the mucosal doughnut was circular in shape and complete. The average distance between the stapling line and the dentate line was 2.6 cm. Additional hemostasis on the staple line, either by suture or electrocautery was not required in any patient.

Twelve patients (50%) complained of mild pain, eleven (46%) patients complained of moderate pain while one patient complained of severe pain. No patient had bleeding from the suture line or sepsis in the postoperative period. Two patients complained of urinary retention but that resolved spontaneously. All patients were discharged on the next day of surgery.

DISCUSSION:

This study confirmed the short-term postoperative advantages of PPH in terms of decreased postoperative pain, leading to shorter time to healing and earlier return to work. Decreased postoperative pain can be postulated to have been caused by a number of factors including stapled hemorrhoidopexy technique itself, use of spinal anesthesia causing persistence of anesthesia for 1-2 hours postoperatively and lignocaine impregnated packing after the procedure. But all these measures are also taken while performing conventional hemorrhoidectomy. In comparison, PPH involves resection and stapling in rectal mucosa which has splanchnic innervation which makes it pain free compared to conventional procedures, in which procedure is performed in area having somatic innervation.

Senagore et al in their prospective multicenter randomized controlled trial demonstrated that patients in PPH group had better immediate postoperative pain scores, required less analgesia and experienced less pain at first bowel movement compared to patient treated with conventional Ferguson hemorrhoidectomy.[8] Iqbal et al in their study compared short term outcomes of PPH versus excisional hemorrhoidectomy. They concluded that PPH was associated with improved postoperative pain, early recovery and improved patient satisfaction.[9] Tijandra et al observed similar findings in their systemic review of PPH in terms of short-term benefits over conventional hemorrhiodectomy.[6] The short term benefits include decreased pain, decreased analgesia requirement, earlier return to bowel function, shorter hospital stay, early wound healing and earlier return to work.

There were no intraoperative and postoperative complications in any patient in this study. PPH is an effective technique but requires extreme care and expertise during operation as this may lead to devastating complications like rectal perforation, retropneumoperitoneum.[10] Urinary retention is a well-known complication after anal surgery especially associated with spinal anesthesia; in PPH the reported rate is up to 12%.[11] In this study, two patients developed urinary retention but it resolved spontaneously. There have been few studies in which internal anal sphincter damage has been reported by the insertion of 33-mm PPH device into the anal canal.[12] No patient in our study had any sphincter damage and all patients were continent at the last follow up.

This study mainly focused on immediate postoperative outcomes but 15 patients (62%) had minimum follow-up of 3 months. No patient in this study had complication like persistent pain, rectal stenosis or fecal urgency at later follow up. Cheetham et al in their study reported persistent pain and fecal urgency after stapled hemorrhiodopexy.[7] They postulated that this could be due to incorporation of smooth muscle in the doughnut that is excised with the stapling gun. Rowsell et al in their study observed that 69% of the excised doughnut contained smooth muscle and one patient who developed fecal urgency had smooth muscle in the excised doughnut while other patients had no such complaints.[13] Long term complications can include rectal stenosis as observed by Yao et al in their retrospective review of 554 PPH procedures. The mean time to development of stenosis was about 4 months. All patients with this complication were successfully treated with balloon dilatation through colonoscopy.[14]

The position of purse string suture in this procedure is very important. This should ideally be placed just above the anorectal ring i.e. between 2-3 cm of the dentate line.[15] In our study, the average distance of staple line was 2.6 cm from dentate line. A lower staple line will cause pain while a higher suture line would be less effective in prolapse reduction and hemorrhoidal devascularization.

The principle of PPH is that it involves reduction of prolapsed and/or dilated piles and disconnection from their rectal vascular supply only. The external piles can still be vascularized by subcutaneous vessels originating from pudendal pedicles which may lead to recurrences. There was no recurrence of hemorrhoids in any patient in this study at the time of last follow-up. There are number of studies reporting clinically significant recurrences of hemorrhoids following stapled hemorrhoidopexy requiring another surgery.[16] In a randomized controlled trial conducted by Senagore et al, it was observed that only 2.6% patients who underwent PPH required a secondary procedure within one year of initial surgery.[8] A major drawback related to use of this technique is the high cost associated with the disposable stapling device.

There were number of limitations in this study. The excised circular doughnut was not sent for histology to check for incorporation of smooth muscles. The patients were not followed up for one year and therefore we were unable to find any long-term complication of this procedure.

CONCLUSIONS:

There were no intraoperative or postoperative complications. Postoperative pain was mild to moderate in majority of patients. PPH was found to be a safe procedure that resulted in quick recovery and early return to work.

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