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Analysis of stapled hemorrhoidopexy outcomes: A single-institution based study

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Abstract

Background: Although traditional surgery is the gold standard treatment for hemorrhoids, stapled hemorrhoidopexy (SH) is an alternative surgical technique. However, this technique has concerns of recurrence. We conducted this study to assess the clinical outcomes and complications of SH in patients visiting our institution

Methods: A prospective study was conducted on 115 patients from 2010 to 2012 who underwent SH with PPH03 kit under spinal anesthesia. Clinical outcomes assessed included the operation time, hospital stay and rate of post-operative pain.

Results: SH had lower operative procedural time (30 minutes), post-operative pain and hospital stay (1.8 days) along with minimal procedural complications and were comparable to the previous reports.

Conclusions: Stapled hemorrhoidopexy is an effective alternative to traditional surgical technique in treating 3rd and 4th degree hemorrhoids, in terms of lesser operative procedural time, post-operative pain, use of analgesics and hospital stay along with reduced procedure related complication.

Keywords: Hemorrhoids; stapled hemorrhoidopexy; operative time; post-operative complication

Introduction

Hemorrhoids, commonly known as piles is a clinical condition affecting the anorectal region characterized by symptomatic enlargement and prolapsed anal cushion^[1]. It is a common condition affecting the adults with a global incidence ranging between 50 to 80% and in India about 75% of the population are diagnosed with hemorrhoids^[2].

Conventional excisional hemorrhoidectomy has been the most effective technique for patients with hemorrhoids. However, the efficacy of the technique is masked by the complication of significant postoperative pain, thereby leading to the deferral of treatment^[3]. To overcome this complication, Dr. Antonio Longo introduced stapled hemorrhoidopexy (SH) in 1998 and this procedure involves repositioning of the prolapsed hemorrhoidal tissue through a circular resection of the inner layers unlike the complete removal of the tissue followed in conventional methods^[4]. Further the mechanical anopexy interrupts the vascular supply to the hemorrhoid cushions thereby reducing the hemorrhoid tissue^[3]. SH is commonly indicated in circumferential grade II, hemorrhoidal prolapse, grade III and IV hemorrhoids^[4].

Evidences from clinical trials and meta-analysis studies have reported the safety and efficacy of SH in comparison to traditional excisional techniques^[6,7]. The advantages of SH include shorter operative time, reduced hospital stay, lesser pain with earlier recovery. However, the higher symptomatic recurrence rate reported with SH has raised concerns over this procedure especially in cases of larger and prolapsed grade IV hemorrhoids^[8]. Further, the eTHoS trial, a large, open-label multicenter, randomized controlled trial demonstrated traditional excisional surgery as appropriate treatment of choice especially in a tailored management plan^[9]. Based on negative effects reported with SH technique Giordano *et al.* suggested that the patients should choose the procedure either with higher risk of recurrence and additional operation or conventional hemorrhoidectomy associated with longer operation time and recovery time^[10].

In spite of the controversy regarding the use of SH, it has been successfully used for the surgical management of hemorrhoids by many clinicians including our institution. However, surgical indications for SH may not be the same of conventional excisional techniques. The aim of the current study was to report the data regarding type of analgesia, post-operative morbidity,

complication rate, the hospital stay, and the rate of recurrence observed with SH in our institutional experience.

Materials and Methods

This was a single-center prospective study conducted at ESIC MC PGIMSR, Bangalore. Data were collected prospectively for all consecutive patients with a diagnosis of hemorrhoids and were treated by SH in our institution between] 2010 and 2012.

Patients were included in the study if they had: i) symptomatic 2nd, 3rd or 4th degree hemorrhoids and preferred undergoing SH. Patients who reported acute hemorrhoidal episodes with thrombosis, prior hemorrhoidectomy and associated anal pathology were excluded from the study.

The medical history of all of the patients were recorded and the clinical examination included inspection, digital exploration and proctoscopy. Before the SH, patients were advised to undergo routine blood and urine examinations.

The study protocol was approved by the institutional review board (IRB), while confirming to the standards of the Declaration of Helsinki and its subsequent revisions. All the included patients signed the informed consent to participate in the study.

Treatment

All the patients underwent SH under regional anesthesia as

suggested by the anesthetist. The procedure was done in a lithotomy position. All the patients underwent SH using the procedure for prolapse and Haemorrhoids (PPH03) Proximate haemorrhoid stapler (Ethicon Endo-Surgery kit).

Post-operative follow-up

The follow up period ranged from 6 months to 32 months. All the patients were advised to have normal diet post operatively. They were also prescribed stool softener, mild analgesics and antibiotics for a period of 5 to 7days.

Statistical analysis

Statistical analysis

All statistical analyses were performed using SPSS version 22.0 (IBM software suite; Armonk, NY). Data are expressed in its frequency and percentage as well as mean and standard deviation.

Results

Baseline characteristics

The study included a total of 115 patients with a mean age of 40 years (range: 21-70 years). Majority of the patients were in the age group of 41 to 50 years and were predominantly males (M: F=70:30), figure 1 and 2.

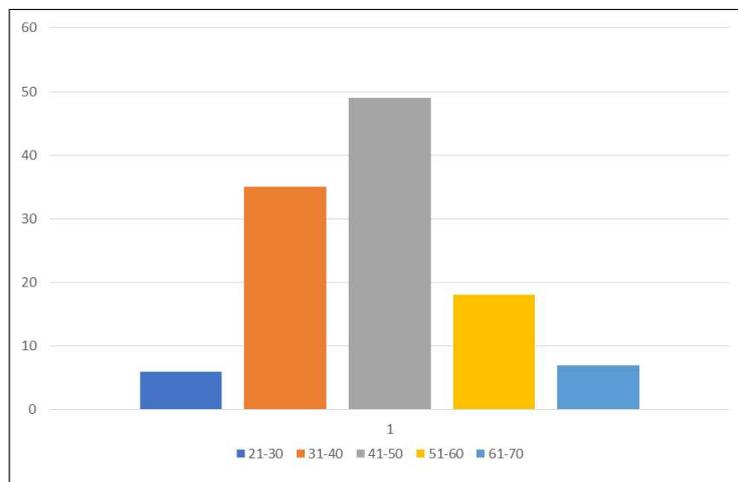


Fig 1: Incidence of hemorrhoids according to age in the study population

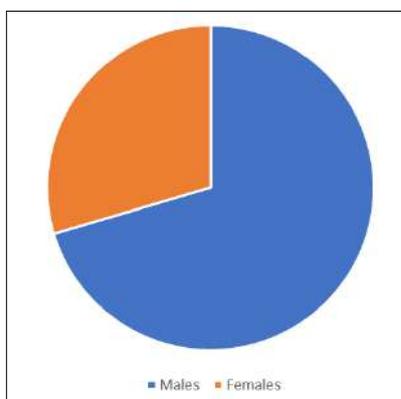


Fig 2: Incidence of hemorrhoids according to gender in the study population

or >35 minutes of surgery time, figure 3.

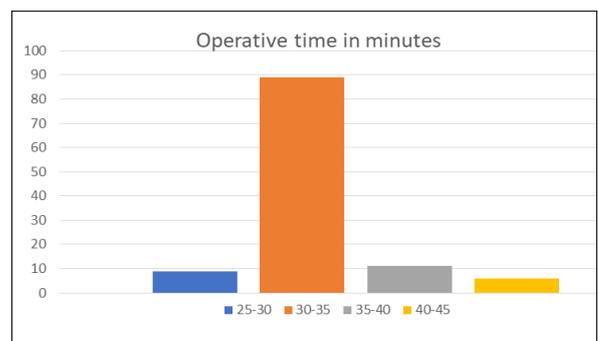


Fig 3: The different operative time within the Study Population

Operation time

The mean duration of surgery was 30 minutes, with a range of 25 to 45 minutes. About 81% of the patients had a surgery time of 30 to 35 minutes while the remaining patients either had < 30

Hospital stay

The mean hospital stay in our study was 1.8 days. About 85% of the patients had ≤ 2 days of hospital stay following SH, while the remaining 15% of the patients had 2 to 5 days of hospital stay, figure 4.

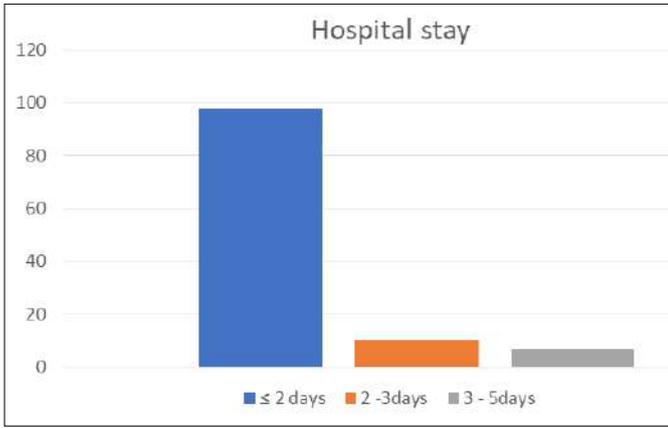


Fig 4: No of hospital stay in the Study Population

Post-operative analgesia

Pain was assessed using a visual analogue scale (VAS) in which 0 corresponds to “no pain” and 10 to “severe pain”. In our study, most of the patients complained scheduled analgesia following SH and only 6.9% were reported severe pain and were treated with opiates.

Post-operative complications

In our study, about 9.5% of the patients reported post-operative bleeding, 11.3% had incontinence to flatus and 1.7% had faecal impaction. However, there were no cases of recurrences noted in our study. Further there were no other complications of rectal perforation and pelvic sepsis, rectal diverticulum and others as reported in other global studies.

Discussion

Hemorrhoids are one of the most common benign diseases and the management of this benign condition depends upon grade or degree of disease. Usually the grade I and II are treated by conservative measures while grade III and IV are managed surgically. Currently hemorrhoidal surgeries are performed by various intervention methods including Milligan-Morgan, Parks, and Ferguson and these procedures are still considered as gold standard treatment [11]. Stapled hemorrhoidopexy is an alternative to excisional surgery that is associated with clinical benefits including lesser surgical time and reduced time for recovery. This study was conducted to compare the results of SH performed in our institution with those reported in world literature.

The duration of surgery is less with SH in comparison to conventional methods. In our study the mean duration was about 30 minutes. This is similar to the duration reported by Panigrahi *et al* (28 minutes) but is higher than that reported by Vineet *et al* and Ng KH *et al* where the surgery duration was 22 minutes and 15 minutes respectively [11, 12]. The varying difference in the duration of surgery may be due to the different grades of haemorrhoid patients included in different studies.

SH is usually performed as a day care procedure wherein the patients are discharged from hospital within a day. In our study, the mean hospital stay was 1.8 days. Our results were in line with that of Ganio *et al*, where they reported a mean hospital stay of 1 day [13]. Panigrahi *et al* reported a mean hospital stay of 2.08 days [5]. The slight differences noted in hospital stay with different studies is the reflection of differences in hospital discharge protocols and the way in which the length of hospital stay is determined in different studies.

The postoperative pain reported with SH is generally lesser compared to the traditional excisional biopsy. In our study only

a limited number of patients had severe pain and had opiates had to be prescribed. Panigrahi *et al* had described a significantly lower pain score in SH patients compared to excisional method. Usually a purse string suture placed too close to the Dentate line or a low placed staple line can cause persistent postoperative pain following SH [14, 15].

In the current study, the common post-operative complication was incontinence to flatus followed by post-operative bleeding and faecal impaction. The rates of de novo incontinence to flatus reported in various prospective studies range between 3% to 19% [16, 17]. The use of anal dilator devices or stretching of the anal canal during insertion or firing of the stapler has been proposed as the cause of incontinence [18, 20]. Further, the use of an Eisenhammer retractor for inserting purse string suture has been shown to reduce the incidence of incontinence [21, 22].

Another common complication of SH include bleeding, however this is lower when compared to the other methods of hemorrhoidectomy [23]. The rates of rectal bleeding after PPH for second-, third- and fourth-degree piles without thrombosis range between 1% and 11% [16, 17] and in our study it was observed to be 9%. Bleeding following stapled hemorrhoidopexy mostly occur immediately after surgery or later from the seventh day. Bleeding following SH usually occurs secondary to an arteriolar bleed along the staple line, either from defective techniques resulting in mucosal injury or due to the rejection of the staples [24]. The introduction of PPH03 has greatly reduced the incidence of early bleeding following SH.

In our study a minor group of patients accounting 1.1% reported faecal impaction. However, some of the studies have reported an occurrence of about 1% to 6.6% [25-28].

Though previous studies have reported higher recurrences following SH, in our study there was no cases of recurrence reported during the follow-up. Recurrence following SH has been reported up to 58.9% with a median recurrence rate of 6.9%.²⁹ Grade IV hemorrhoidal disease is usually associated with recurrence.²⁹ The meta-analysis study by Giordano *et al* reported recurrence rates following stapled hemorrhoidopexy in 4th degree hemorrhoids up to 22%, when compared to 3.6% in conventional hemorrhoidectomies [10]. Recurrence is believed to occur secondarily to the irreducibility of the prolapse preventing the lifting effect of the stapled hemorrhoidopexy [22, 29].

The limitation of our study is that it is a single arm study. We did not compare the SH procedure with the gold standard technique to get the definite difference between the two procedures.

Conclusion

In conclusion, stapled hemorrhoidopexy is a safe and efficacious surgical procedure in treating grade III and IV haemorrhoids. Most of the results obtained in our study were comparable with the currently available literature. However, the treating proctologist should be adequately and appropriately trained in this method of hemorrhoidectomy to achieve the best patient outcomes. Further studies with higher sample size reporting minimal recurrence are required to validate stapled hemorrhoidopexy as a gold standard treatment for hemorrhoids.

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