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## Review Article

# Late Complications after Stapled Hemorrhoidopexy - A Single Surgeon's Experience - @

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## ABSTRACT

One hundred twenty eight patients underwent stapled hemorrhoidopexy under a single surgeon, using hemorrhoidectomy stapler, PROXIMATE PPH Set manufactured by ETHICON (part of Johnson-Johnson), between January 2004 and January 2008. During this period 320 patients were seen in the hospital with 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids. The mean age of the patient was 48.6yrs. There were 16 women and 112 men. 53% patients presented with bleeding and prolapsed piles, 47% of patients presented with only prolapsed piles, 18% patients presented with pain at anal verge. They were prospectively evaluated for development of late complications on a minimum follow up of five years. Late complications were defined as those occurring later than seven days after surgery. The major late complications were recurrence of prolapse (15.6%), persistence of skin tags (20.3%), persistent pain (9.4%), stenosis (4.7%), faecal urgency & tenesmus (4.7%), raw area on staple line (3.12%) and retained purse string suture (1.6%).

It was found that there was a considerable late post operative complication after stapled hemorrhoidopexy with hemorrhoidal prolapse and persistent skin tags requiring re-surgery.

**Keywords:** Stapled hemorrhoidopexy; Milligan and Morgan's Hemorrhoidectomy; Late complications; Haemorrhoidal recurrence; Anal Stenosis

## ABBREVIATIONS

SH: Stapled Hemorrhoidopexy; CH- (Milligan and Morgan's) Conventional Hemorrhoidectomy.

## INTRODUCTION

Milligan and morgan's hemorrhoidectomy has remained the surgical procedure of choice for most surgeons, for the 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids. The outpatient methods like Rubber-banding, infrared coagulation, injection sclerotherapy are the treatment modality for first and early 2<sup>nd</sup> degree hemorrhoids. Stapled hemorrhoidopexy as a procedure for treatment of hemorrhoids was introduced in 1998 by Longo of Italy [1]. The other new method Trans-anal hemorrhoidal dearterialization was introduced in 1995 by Morinaga [1] of Japan and Ligasure-hemorrhoidectomy was devised in 2001.

These methods appeared as good alternatives to the technique of conventional hemorrhoidectomy. These were devised to provide pain-free post operative period and early return to gainful activity at the same time comparing well with the conventional surgery, in recurrence of hemorrhoids.

Even though the early complications after stapled hemorrhoidopexy are well documented, the late complications after stapled hemorrhoidopexy and their incidence are not widely described. This prospective evaluation of single surgeon's experience with stapled hemorrhoidopexy looks at the long term recurrence rates and chronic pain as the primary objective and other late complications as the secondary objective.

## MATERIALS AND METHODS

One hundred and twenty eight patients underwent stapled hemorrhoidopexy under a single surgeon, using Hemorrhoidectomy stapler, PROXIMATE PPH Set manufactured by ETHICON, (part of Johnson-Johnson), between January 2004 and January 2008. During this period 320 patients were seen in the hospital with 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids. The prolapsed piles which reduced spontaneously were classified as early second degree and those which had to be reduced by manipulation as late second degree hemorrhoids. The permanently prolapsed or interno external hemorrhoids were graded as third degree. They were offered a choice between stapled hemorrhoidopexy and conventional hemorrhoidectomy having been informed about the degree and duration of pain with each method and the expenditure

involved. 128 patients chose stapled hemorrhoidopexy and the rest, conventional hemorrhoidectomy. All patients underwent the procedure by the author under spinal anaesthesia. In all the purse-string was taken at 4cms above the dentate line. In 15% of patients one or two 3-0 Vicryl sutures were taken on the staple line to control worry some ooze. The patients were periodically assessed for complications and followed up for recurrence at one yearly period for a minimum of five years. Early complications were described as those occurring on or before 7 days of surgery. Late complications were described as those occurring after 7 days of surgery. Pain was assessed by visual analogue scale of 1 to 10 on day 1, day 3 and day 7 and afterwards only on complaint.

## RESULTS

The mean age of the patient was 48.6yrs. There were 16 women and 112 men. 53% patients presented with bleeding and prolapsed piles. 47% of patients presented with only prolapsed piles. 18% patients presented with pain at anal verge. The distribution of grade of hemorrhoids in the 128 patients was as follows.

3<sup>rd</sup> degree- 64

Late 2<sup>nd</sup> degree -30

Early 2<sup>nd</sup> degree- 34

Co-morbidity associated with hemorrhoids in this group was as follows: Diabetes - 6, Hypertension - 8, Epilepsy -4, Asthma -2, CRF-2, IHD-2, co existing ano - rectal disease 6. 50 patients were subjected to the procedure in knee chest position and 78 patients in lithotomy position. In the knee chest position complete doughnut was recovered in 72% (no-36) and incomplete doughnut in 28% (no-14). In lithotomy position 64% (no-50) had complete doughnut and 36% (no-28) had incomplete doughnut. Hence totally 86 (67%) patients had complete doughnut and 42 (33%) patients had incomplete doughnut.

### Early Complications

#### 1. Post-op Pain

The pain distribution is shown in Table-1. It was noted that all patients complained of pain on the day-1 and 64% complained pain on the day 2. This reduced to 18.8% by the 7<sup>th</sup> day.

#### 2. 30/ 128 patients amounting to 23.4% had retention of urine.

#### 3. Post operative bleeding was seen in 18 patients (14%) and in

4 of them it was severe. All stopped bleeding within nine days of surgery.

**Late complications**

(Table 2) On a follow-up of minimum of five years, we observed the following complications: The primary outcomes documented were

1. Recurrence of hemorrhoidal prolapse (15.6%)
2. Persistent skin tags/ external hemorrhoids (20.3%)
3. Persisting (chronic) post-op pain (9.4%)

**The secondary outcomes documented were**

1. Recurrent bleeding per rectum (6.25%)
2. Mild stenosis (4.7%)
3. Faecal urgency/ tenesmus (4.7%)
4. Raw area on staple line (3.12%)
5. Post-op fever (3.12%)
6. Retained purse-string suture (1.6%)
7. Mild faecal incontinence (1.6%)

**Table 1:** Post operative distribution of pain score on Visual Analogue Score in the first week.

Visual Analogue score	Day 1 Number	Day 3 Number	Day 7 Number
1	44	10	
2	4	30	
3	40	30	12
4	36	8	8
5			
6			
7			
8	4	4	4
9			
10			

**Table 2:** Incidence of late complications of Stapler hemorrhoidopexy in the cohort of 128 patients.

Sl.No.	Complications	Number	Percentage	Outcome
1	Bleeding per rectum	8	6.25%	Persisting
2	Recurrence of prolapse	20	15.6%	Persisting
3	Faecal urgency, tenesmus	6	4.7%	Persisted for 3 months
4	Persistent skin tag/ external piles	26	20.3%	Persisting
5	Mild faecal incontinence	2	1.6%	Resolved with time at 6 months
6	Raw area in staple line	4	3.12%	Resolved in 1 month,
7	Remnant of purse string sutures	2	1.6%	Equipment failure
8	Mild stenosis	6	4.7%	Cured by dilatation
9	Post op fever for 3 to 4 days	4	3.12%	Reason not clear, but responded to antibiotics
10	Pain >7 days	12	9.4%	Persisted for >1 month in 4, the rest were pain-free at 15 days.

Though the patients with persisting prolapsed internal hemorrhoids and external hemorrhoids were offered surgery, only four agreed for the same. Late post-op pain resolved within a month in eight patients and in four persisted even after 1 month. Faecal incontinence and tenesmus responded to conservatism but prevailed for two months. Mild stenosis responded well to dilatation and the persistent raw area on the staple line resolved within 15 days. The retained purse-string suture which indicates equipment failure was addressed by suture removal as day-care during the first post-operative visit. Post-op fever though resolved with introduction of antibiotics, source could not be identified.

**DISCUSSION**

In 90% of cases, early hemorrhoids can be treated by outpatient methods. For the 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids surgical intervention will be necessary for long term relief. Over the years many surgical options have been proposed which are closed or open hemorrhoidectomy, stapled hemorrhoidopexy, ligature excision of hemorrhoids, Doppler based intra anal hemorrhoidal arterial ligation, anomucosal flap circumferential hemorrhoidectomy, Farag’s operation [1]. Given the number of these surgical options it is clear that still there is no single surgical procedure which can be called the “gold standard”.

But it is well documented that Stapled Hemorrhoidopexy is associated with less post-operative pain and shorter convalescence compared to Milligan and Morgan’s hemorrhoidectomy [1-3,15]. Jong Sun Kim, et al. [3] evaluated 130 patients in each group of SH and CH for third degree hemorrhoids. They observed that the pain score assessed on VAS scale was 3.1 at one week and 0.5 at the end of the second week for SH group. In our group of 128 patients undergoing SH, 90.6% had no pain after the first week and 9.4% had persistent pain, of grade 3 or more on VAS scale of 10. But this persistent pain lasting for more than 7 days, reduced to 3.2% after 1 month.

Prevalence of persistent pain has been reported to be in the range of 1.6% to 31% though most recover from it [4]. Lelpo B, et al. [5] have noted the incidence of chronic pain to be around 14.3%. They attribute this pain to two reasons

- 1) Hemostatic sutures taken on the staple line and
- 2) Retained staples.

Salman yousef, et al. [6] reported chronic pain incidence to be around 7%. Carlos Walter, Fueglistner P, et al. [2,7] have reported persistent anal pain incidence of 25%. Brusciagnol, et al. [8] have reported that the most important reason for re-intervention after SH in their case series of 232 patients was persistent severe pain of 7 on a VAS scale. Hence it is clear that there is a definite incidence of persistent severe pain after SH which has a wide range of 4.6 to 25%.

The recurrence of hemorrhoidal prolapse was 15.6% in our experience. Fueglistner P, et al, Brusciagnol, et al and Hortiz, et al [7-9,] have reported a higher incidence of recurrent prolapse though the incidence seems to be less in others experience [10]. Persistent skin tags were present in 20% in our series. Generally, this seems to be a common occurrence and some authors have advocated excision of skin tags at the time of index surgery [2,11-13]. Pasquale Giordano et al reviewed 15 RCTs enrolling 1201 patients where CH was evaluated against SH on long term follow up for recurrence. The outcome at one year in this review article showed clearly a higher rate of prolapse in SH and these patients were more likely to seek corrective surgery than



those undergoing CH [14]. So also Jayaram et al. [15,16] reported that the persistence of symptomatic hemorrhoids was five times more likely with SH than with milligan and morgan's Hemorrhoidectomy. Jong sun kim, et al. [3] have observed a cumulative recurrence rate of 18% at five years in patients with third degree hemorrhoids undergoing SH. Complete recurrence was seen in two of our patients and both were chronic alcoholic. But the incidence of recurrence as described by persistence of hemorrhoidal prolapse was 15.6% at five years. Liesel J Porrett, et al. [22] have on systematic review where 78 publications enlisting 14, 232 patients, have reported late complications to range from 2.5% to 80% with a median of 23.7%. Recurrence of hemorrhoids was noted in up to 58.9%, on a follow-up ranging from 1 month to 7 years. Marlise mello Cerato, et al. [23] in a critical appraisal of surgical treatment of hemorrhoids found on a systematic review, that long term outcome of stapled hemorrhoidopexy is insufficiently documented, particularly the incidence of persistent skin-tags and recurrent prolapse. In a meta-analysis of 2000 patients they found a late complication rate of 20% for SH, with a higher rate of re-surgery and Tenesmus. AV goustou et al. [24] in a 14 years experience with 800 patients found that 3% developed recurrence after SH for II and III degree hemorrhoids.

Faecal urgency with tenesmus was seen in 4.7% in our series and lasted for 2 months in these patients. These patients were not happy with the outcome and were last to follow up when offered re-surgery. A PPH syndrome has been hypothesised by a few authors [4,17,18].

Stenosis is a rare long term complication of SH. The incidence is reported to be 2% in SH and 5% in conventional hemorrhoidectomy [19,20,25]. Mongardini M, et al. [21] have reported a case of stenosis due to retained purse string suture material in a patient undergoing STARR. We have encountered this complication in two patients in the present series which resolved after removal of the stitch. Minor stenosis was seen in 4.7% in our group of patients but responded well to dilatation.

In summary, we have observed a considerable incidence of late post-operative complication after stapled hemorrhoidopexy particularly hemorrhoidal prolapse, persistent skin-tags and chronic anal pain on long term follow-up resulting in a need for re-surgery. Patient should be counseled about the above complications while offering stapled hemorrhoidopexy for 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids.

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