STAPPLER HAEMORRHOIDECTOMY IS SAFE AND EFFECTIVE FOR III AND IV GRADE HAEMORRHHOIDS
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ABSTRACT: INTRODUCTION: Hemorrhoidectomy is one of the most commonly performed anorectal operations. The present study was designed to compare the results of stapler haemorrhoidectomy (SH) with Milligan- Morgan open Hemorrhoidectomy (OH). We evaluated the safety and effectiveness of SH and OH. Additional endpoints include operative time, postoperative pain, duration of hospital stay and time taken to resume normal work. METHODS: Patients who underwent surgery for symptomatic Grade III and Grade IV haemorrhoids were included in this study. Patients were divided in to two groups, SH and OH groups depending up on the type of surgery performed. Primary end points were operative time, postoperative pain, post-operative hospital stay and time taken to resume normal works. RESULTS: A total of 70 patients underwent haemorrhoidectomy, 21 females and 49 males, 38 underwent SH and 32 underwent OH. The mean age of patients who underwent SH and OH was equal, duration of surgery, pain scores measured at 24 hours, 48 hours, 72 hours and 7 days, duration of hospital stay and time taken to resume normal works were low in SH group when compared to OH group. CONCLUSION: The findings of our study confirm that SH is associated with shorter duration of surgery, less postoperative pain, shorter duration of hospital stay and a quicker recovery, earlier return to work as compared with OH. The procedure is not associated with major post-operative complications. There is no recurrence, residual prolapse or incontinence in the average follow up period of one year. We conclude that SH is safe with many short-term benefits. KEYWORDS: Haemorrhoidectomy, Open, Stapler, Grade –III, Grade-IV, Haemorrhoids.

INTRODUCTION: Hemorrhoids are one of the most common benign anorectal problems worldwide. Haemorrhoids have several treatment modalities. In early stages conservative treatments can be tried, but over a period if the haemorrhoids get worst, the disease should be treated by several non-operative treatments like, Sclerotherapy, rubber band ligation, infrared photocoagulation, cryotherapy, bipolar diathermy, and direct-current electrotherapy. When haemorrhoids cannot be addressed by conservative and non-surgical treatment, surgical excision is the treatment of choice. The treatment of third and fourth degree hemorrhoids is surgical.¹,² Surgical hemorrhoidectomy has a reputation for being a painful procedure for a fairly benign disease, causing postoperative pain needing about 2-3 days hospital stay with a convalescence of at least one month.³,⁴ Stapler hemorrhoidectomy is an exciting modality that represents a paradigm change in the management of hemorrhoids.⁵ However, this concept has been met with a mixture of sceptism and interest.⁶ Stapler hemorrhoidectomy, (SH) has been associated with improved short-term outcomes, including less postoperative pain, shorter operating times, earlier
return to work and greater patient satisfaction.\(^{7,8}\) We evaluated the safety and effectiveness of SH over conventional open hemorrhoidectomy (OH). Additionally, operative time, postoperative pain, duration of hospital stay and time taken to resume normal work was also evaluated.

**METHODS:** Both male and female patients above 18 years, who underwent hemorrhoidectomy for symptomatic Grade-III and Grade-IV haemorrhoids as confirmed by proctoscopy and/or flexible sigmoidoscopy, from August 2011 to July 2012, were included in the study. Patients with haemorrhoids due to anal pathology and not fit for surgery were excluded. All patients underwent a detailed clinical examination, blood investigations and pre anesthetic workup before surgery. Patients opted for either open hemorrhoidectomy (OH) (Milligan-Morgan technique) or stapler haemorrhoidectomy (SH) depending upon their socioeconomic status. Patients were operated under spinal anesthesia, in lithotomic position. Duration of surgery is calculated from the time of anoscopy to the time of completion of procedure. Duration of hospital stay is calculated from the day of surgery to the day of discharge from the hospital. Time taken to resume normal work is calculated from the day of discharge to the first day that patient had returned to their respective occupation. Postoperative pain was assessed using visual analogue scale (VAS) at 24 hours, 48 hours, 72 hours and one week postoperatively. It is a scale from 0 to 10, where 0 is no pain and 10 is the worst pain ever.

**STATISTICAL METHODS:** Descriptive statistical analysis has been carried out in the present study. SPSS 15.0 Statistical software was used for the analysis of the data and Microsoft word and Excel have been used to generate tables etc. Results on continuous measurements were presented as Mean±SD and categorical data as actual numbers and percentages. Unpaired t test, ANOVA and Chi-square test were used to test significance between two groups. P value is considered to be significant when it is less than 0.05 (P < 0.05).

**RESULTS:** A comparative study consisting of 70 patients divided into two groups, Thirty eight underwent Longo technique of Stapled hemorrhoidectomy and thirty two underwent Milligan Morgan technique of open hemorrhoidectomy. 52.7% patients had Grade-3 hemorrhoids in SH group and 50% in OH group, and 47.3% had grade-4 hemorrhoids in SH group and 50% in OH group. The mean ± SD age (years) was 40.5±8.59 in SH group and 40.5±9.5 in OH group, but Samples are age matched with \(P=1.00\). In OH group 62.5% were males and 37.5% were females. And in SH group 76.3% were males and 27.3% were females. The duration of surgery (minutes) was compared in the two groups. In the SH group 50% underwent within 20–30 min. The mean duration of surgery was 32 min, ranging from 21 to 51 minutes whereas it was in the OH group the mean of 44 minutes, ranging from 24 to 59 minutes. Duration of surgery is significantly low in SH group with \(P<0.0001\).

**DISCUSSION:** A comparative study consisting of 70 patients divided into two groups, Thirty eight underwent Longo technique of Stapled hemorrhoidectomy and thirty two underwent Milligan Morgan technique of open hemorrhoidectomy. Duration of surgery is significantly low in SH group with \(P<0.0001\). This is similar to the observation of other studies. However, the duration is 5 to 10 minutes longer than observed by many investigators.\(^{3,4,9,10}\)
Tjandra JJ, Chan MK., (2007) published systematic review on stapled hemorrhoidopexy of all randomized, controlled trials until August 2006. Stapled hemorrhoidopexy was associated with less operating time (weighted mean difference, -11.35 minutes; P = 0.006). In our study the mean difference was comparable (12 min). Stolfi, et al (2008) in a study involving one hundred seventy one patients comparing stapled hemorrhoidopexy and milligan morgan technique, mean surgical time was 28 min. Franc H. Hetzer, et al also observed a mean of 30 minutes. Dilatation of the anal sphincter before stapler introduction was routinely performed. The authors suggested this as a possible cause for the prolonged operating time.

In our study, post-operative pain was managed according to the guidelines of French Anaesthesia Society. Pain was assessed using a visual analog scale (VAS). VAS scores at 24 hours were 1.52±0.83 and 3.25±1.19 in SH and OH groups respectively, P value are less than 0.0001. VAS scores at 48 hours were 0.58±0.76 and 2.12±0.92 and OH groups respectively, P value is less than 0.0001. VAS scores at 72 hours were 0.19±0.45 and 1.4±0.71 and OH groups respectively, P value is less than 0.0001. VAS scores at 7 days were 0.1±0.71 and 0.93±0.35 and OH groups respectively, P value is less than 0.0001. Hence patients in SH group had experienced minimal postoperative pain when compared to OH group. Tjandra JJ, et al report less pain after stapled hemorrhoidopexy, as evidenced by lower pain scores at rest and on defecation and 37.6 percent reduction in analgesic requirement. Stolfi, et al reported postoperative pain on first two postoperative days was similar. Cheetham et al (Lancet, 2000) a controversial study that reported significantly more pain in stapled group. The pain was probably due to low staple line.

In our study the mean duration of hospital stay (in days) was 2 days in the stapled group as compared to 3.5 days in the open group. 79% were discharged within 2 days in the SH group, whereas only 2% in the open group. 75% were discharged at the end of 4 days in the OH group. Duration of hospital stay is significantly low in Stapled group with P<0.0001. Our study supports the earlier findings of shorter hospital stay in patients undergoing stapled hemorrhoidopexy as reported by Tjandra JJ, et al (2007) (Weighted mean difference, -1.07 days; P = 0.0004). When comparing time taken for return to work in days in two groups of patients, a mean of 7.5 days in SH group and 13 in OH group was noted. About 52 % of SH group had returned to work at the end of one week and the rest by two weeks. Only one patient took 15 days to return to work. Franc, et al (2002) patients returned to work at an average of 6.7 days (range, 2-14 days) in the stapler group and 20.7 days (Range, 7-45 days) in the excision group (P = 0.001). The stapled hemorrhoidopexy allowed a faster functional recovery with shorter time off work (weighted mean difference, -8.45 days; P < 0.00001). No Major post-operative complications were reported in our study. Jayaraman S, et al (15) 79 patients on Stapled versus conventional surgery for hemorrhoids noted that though associated with comparable short term results, stapled hemorrhoidopexy is associated with a higher long term risk of hemorrhoid recurrence and the symptom of prolapse. The authors concluded that conventional excisional surgery remains the "gold standard" in the surgical treatment of internal hemorrhoids, if hemorrhoid recurrence and prolapse are the most important clinical outcomes. However Tjandra JJ, Chan MK., (2007) systematic review stated that although there was increase in the recurrence of hemorrhoids at one year or more after stapled procedure the overall need of surgical and nonsurgical re-intervention after the two procedures was similar.
The conclusion was stapled hemorrhoidopexy is safe with many short-term benefits and the long-term results are similar to conventional procedure.

CONCLUSION: The findings of our study confirm that stapler hemorrhoidectomy is associated with shorter duration of surgery, less postoperative pain, shorter duration of hospital stay and a quicker recovery, earlier return to work as compared with Milligan – Morgan Open Hemorrhoidectomy. The procedure is not associated with major post-operative complications. We conclude that stapler hemorrhoidectomy is safe with many short-term benefits.

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| Clinical Parameters            | SH  | OH  |
|-------------------------------|-----|-----|
| Age in Years                  |     |     |
| 21-30                         | 2   | 2   |
| 31-40                         | 20  | 18  |
| 41-50                         | 12  | 8   |
| 51-60                         | 3   | 2   |
| >60                           | 1   | 2   |
| Total                         | 38  | 32  |
| Gender                        |     |     |
| Male                          | 29  | 20  |
| Female                        | 9   | 12  |
| Total                         | 38  | 32  |
| Grading of haemorrhoids       |     |     |
| Grade III                     | 20  | 16  |
| Grade IV                      | 18  | 16  |
| Total                         | 38  | 32  |
| Operating Time in min         |     |     |
| 20-30                         | 19  | 3   |
| 31-40                         | 15  | 4   |
| 41-50                         | 3   | 17  |
| >50                           | 1   | 8   |
| Total                         | 38  | 32  |
| Duration of hospital stay in days |     |     |
| Up to 2 days                  | 30  | 10  |
| 2 – 4 days                    | 6   | 14  |
| > 4 days                      | 2   | 8   |
| Total                         | 38  | 32  |
| Time to normal work in days   |     |     |
| < 7 days                      | 20  | 0   |
| 7 – 14 days                   | 17  | 20  |
| > 14 days                     | 1   | 12  |
| Total                         | 38  | 32  |
**Complications**

|                  | SH  | OH  | P value |
|------------------|-----|-----|---------|
| Urinary retention| 4   | 10.5| 6       | 18.75  |
| Bleeding         | 2   | 5.25| 5       | 15.62  |
| Anal canal stenosis| 0  | 0   | 1       | 2.6    |

Table 1: Clinical parameters between Stapler and Open hemorrhoidectomy

| Clinical Parameters                  | SH           | OH           | P value   |
|-------------------------------------|--------------|--------------|-----------|
| Operation Time in min               | 31.57±7.67   | 44.8±8.8     | < 0.0001  |
| VAS 24 hours                        | 1.52±0.83    | 3.25±1.19    | < 0.0001  |
| VAS 48 hours                        | 0.58±0.76    | 2.12±0.92    | < 0.0001  |
| VAS 72 hours                        | 0.19±0.45    | 1.4±0.71     | < 0.0001  |
| VAS 7 days                          | 0.1±0.71     | 0.93±0.35    | < 0.0001  |
| Duration of hospital Stay in days   | 1.89±0.83    | 3.65±1.5     | < 0.0001  |
| Time to normal work in days         | 7.46±3.25    | 13.1±3.4     | < 0.0001  |

Table 2: Endpoints between Stapler and Open Hemorrhoidectomy

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