



ISSN NO. 2320-5407

Journal Homepage: - [www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/12005  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/12005>



INTERNATIONAL JOURNAL OF  
ADVANCED RESEARCH (IJAR)  
ISSN 2320-5407  
Journal Homepage: <http://www.journalijar.com>  
Journal DOI: 10.21474/IJAR01

### RESEARCH ARTICLE

#### AN OBSERVATIONAL COMPARATIVE STUDY OF STAPLER HEMORRHOIDOPEXY AND THE MILLIGAN MORGAN OPEN HEMORRHOIDECTOMY IN TERTIARY CARE CENTER OF CENTRAL INDIA

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#### Manuscript Info

##### Manuscript History

Received: 01 September 2020  
Final Accepted: 05 October 2020  
Published: November 2020

##### Key words: -

Hemorrhoids, Stapler  
Hemorrhoidopexy, Milligan Morgan  
Haemorrhoidectomy

#### Abstract

**Introduction:** Hemorrhoids also called piles. It is vascular structures in the anal canal. In their normal state, they are cushions that help with stool control. They become a disease when swollen or inflamed. The unqualified term "hemorrhoid" is often used to refer to the disease.

**Material and method:** The present study was conducted in the Department of Surgery, Sri Aurobindo Medical College & PG Institute Indore M.P over a duration of one and half years (November 2017 to May 2019). The study was a cross-sectional prospective study and it compares results between Milligan Morgan haemorrhoidectomy and Stapler haemorrhoidopexy for the management of grade 2, 3, and 4 hemorrhoids.

**Results:** In this study, most of the cases were between age group 30-50 [50%] years with the mean age being 43 years. Hemorrhoids more common in males 30 [65%], male: female ratio being 3:1. The most common presentation in hemorrhoids was bleeding per rectum in 47% followed by something coming out per rectum in 43 % & painful defecation in 10 % cases respectively. The duration of surgery was significantly low in the stapler group with meantime being 44.25 compared to open group 63 with the mean difference being 19 mins (P < 0.001). In 17 of 21 [85%] whereas in grade IV all 09 [100%] patients

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had open surgery grade III had mixed options 03/07 [30/70 %] stapler & open respectively. Postoperatively the mean duration of hospital stay in stapler group was  $4.15 \pm 1.03$  as compared to the open group  $6.05 \pm 1.84$  with the mean difference being 2 days ( $P < 0.001$ ). The duration of recovery was significantly faster in stapler group with the mean hospital stay being 7.55 as compared to the open group 12.45 with mean difference being 5 days ( $P < 0.001$ ). Postoperative bleeding was found in both the groups which eventually subsided completely in stapler group on POD - 7 and only 3 [7.5%]. Patients had bleeding on POD - 7 in the open group. ( $P < 0.001$ ). The findings were statistically significant as suggested by P-Value. Urinary Retention was found in both groups i.e. 5% and 7.5% in stapler and open group respectively. ( $P = 0.632$ ).

**Conclusion:** The results of this study concluded that Stapler hemorrhoidopexy had lesser operating time, lower duration of hospital stays, and quicker recovery with less postoperative pain & bleeding as compared to Open hemorrhoidectomy. Hence it was concluded that stapler hemorrhoidopexy is a better option as compared to open hemorrhoidectomy for grade II, grade III, & a few selected cases of grade IV hemorrhoids. patient's stapler procedure was choice in grade II haemorrhoids.

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## Introduction:-

Hemorrhoids, also called piles, are vascular structures in the anal canal. (1,2) In their normal state, they are cushions that help with stool control. (3) They become a disease when swollen or inflamed; the unqualified term "hemorrhoid" is often used to refer to the disease. (4) The signs and symptoms of hemorrhoids depend on the type present. (5) Internal hemorrhoids often result in painless, bright red rectal bleeding when defecating. (5)(6) External hemorrhoids often result in pain and swelling in the area of the anus. (5) If bleeding occurs it is usually darker. (5) Approximately 50% to 66% of people have problems with hemorrhoids at some point in their lives. (6,8) Males and females are both affected with about equal frequency. (8) Hemorrhoids affect people most often between 45 and 65 years of age (9). It is more common among the wealthy. Outcomes are usually good. (6-8) They are often assigned blame for purities ani, analfissures, condylomata acuminata, fistula in ano and incontinence. Treatment for hemorrhoids is only needed if they are truly symptomatic. the disease. The present study was designed to compare stapler hemorrhoidopexy and the Milligan Morgan open hemorrhoidectomy on a set of predetermined parameters.

## Aim and Objectives:-

**Aim:** The purpose of this study is to compare between open Hemorrhoidectomy vs stapler hemorrhoidopexy outcome in terms of post operative complications and quality of life in a tertiary health centre.

## Objectives:-

The purpose of this study was to compare the outcome of stapler hemorrhoidopexy (SH group) performed using a circular stapler with that of the Milligan-Morgan open technique (MM group) under following criteria: -

1. To compare the duration of surgery.
2. To compare the postoperative complaints such as pain, bleeding or urinary retention.
3. To compare the time of recovery period.
4. To compare the Duration of hospital stay.

## Materials:-

The present study was conducted in the Department of Surgery, Sri Aurobindo Medical College & PG Institute Indore M.P over a duration of one and a half years (November 2017 to May 2019). The study was a cross-sectional prospective, to study & compare results between Milligan Morgan haemorrhoidectomy and Stapler haemorrhoidopexy for the management of grade 2, 3, and 4 hemorrhoids. The study was approved by the institutional ethics committee and in line with the declaration of Helsinki and followed the guidelines laid out by the Indian Council of Medical Research (ICMR). Written informed consent was taken from the patients participating in

the study. Total of 40 patients undergoing surgery for hemorrhoids at Sri Aurobindo Medical College & PG Institute Indore were included according to Inclusion & Exclusion criteria decided early. Group 1 of 20 patients underwent Milligan Morgan technique of open haemorrhoidectomy and Group 2 of 20 patients underwent Longo technique of Stapler hemorrhoidectomy. **Inclusion criteria:** All admitted patients of grade II, grade III, and grade IV hemorrhoids who are willing to participate in the study. Patients of age group between 18-60 years. Patients who are willing for regular follow-up. **Exclusion Criteria:** Patients were not willing to participate in the study. Patients of hemorrhoids <18 yrs of age. Patients of hemorrhoids who refuse admission, treatment, or operation. Patients who do not continue complete treatment because of financial or social constraints. Patients of hemorrhoids with pregnancy.

Patients were subjected to clinical examination and routine laboratory investigations preoperatively. All patients were operated on on an in-patient basis. The patient's hospital stay for analysis was calculated starting from the day of surgery. Preoperatively patients were kept nil per oral overnight prior to surgery. One dose of antibiotics was given at the time of anesthesia for surgery. All operations were performed in the lithotomy position under spinal anesthesia. Patients were reexamined under anesthesia to confirm the grade of hemorrhoids and to rule out associated anal pathologies like anal fissure and fistula in ano. Patients were operated on by prefixed operative procedure as per group 1 / 2. The patient was started on a soft oral diet within 4 hours postoperatively. The dressing is removed on the morning after surgery and a local external visual examination is done. Postoperative pain was managed according to the guidelines of the French anesthesia society. The pain was assessed using a visual analog scale (vas) where 0 represented no pain and 100 represented the worst pain ever. The pain score was recorded on a postoperative day 1 with the effect of analgesia, and postoperative day 3 without analgesia and at the end of the first week without analgesia. The aim was to keep the vas score below 50 with adequate analgesia. In addition to analgesics, patients have advised antibiotics and syrup lactulose 20 ml at bedtime for two weeks. Patients undergoing open hemorrhoidectomy were also advised sitz bath twice daily for two weeks. Patients were discharged when pain control and home circumstances permitted. An outpatient appointment for review was given one week after surgery. Patients were advised to report immediately in cases of emergency. On follow up patients were asked to rate the control of their symptoms, degree of continence to flatus and feces, duration to return to normal activities, and any other problems they had. A physical examination was also carried out at each follow-up. The outcome measures were postoperative pain, postoperative bleeding, analgesic requirement, operative time, hospital stay, time to return to normal activity, and complications. Patient data collection sheet was used for data collection.

#### Statistical Methods:

Both descriptive and inferential statistics were used to identify the feature and characteristics of the data. Continuous variable was expressed as mean + / - SD or range. The non - continuous variable was expressed as the number of occurrence and percentage. Chi-square test was used to identify the association between variables. Microsoft Excel was used to prepare the master charts. A P-value less than 0.05 was considered as significant. Student T-test was carried out for continuous parameters if data found to be normal.

#### Observations and Results:

**Table 1:-** Age Distribution Of Patients In Stapler V/S Open Group.

AGE IN YEAR	STAPLER	PERCENT	OPEN	PERCENT	TOTAL	PERCENT
20 -30	<b>05</b>	<b>25</b>	02	10	07	17.5
31-40	<b>06</b>	<b>30</b>	06	30	12	30
41-50	04	20	<b>07</b>	<b>35</b>	11	27.5
51-60	02	10	<b>04</b>	<b>20</b>	06	15
>60	03	15	<b>01</b>	<b>05</b>	04	10
Total	20	100%	20	100%	40	100 %
Mean SD	42.1±13.86		44±10.55			

In this study out of 40 patients, the age distribution of patients is a total of 07 patients in the age group 20-30 years with the stapler/open distribution is 05/02. Next 12 patients in the age group 31-40 years with the stapler/open distribution 06/06. Followed by 11 patients in 41-50-year group with the stapler/open distribution 02/04. & 06 patients in the age group 51-60 with the stapler /open distribution 02/04. Last group of 04 patient patients in age group > 60 with the stapler/open distribution 03/01. Out of 40 patients group < 40 have undergone more stapler hemorrhoidectomy 11/20 [ 55%] as compared to age group >40 who have undergone more open surgery 12/20[60%] we have found Mean±SD. 42.1±13.86 in stapler group and 44±10.55 in open group & significant P-value 0.005

**Table 2:-** Gender Distribution of Patients Instapler V/S Open Group.

Gender	STAPLER		OPEN		TOTAL	
	No	PERCENT	No	PERCENT	No	PERCENT
Male	13	65	17	85	30	75
Female	07	35	03	15	10	25
<b>Total</b>	<b>20</b>	<b>100%</b>	<b>20</b>	<b>100%</b>	<b>40</b>	<b>100</b>

The above table shows in this study of 40 patients Total Males in the present study were 30 (75%) distribution in stapler /open group was 13/17 respectively while Total Females in the present study were 10 (10%) distribution in stapler /open group was 07/03 respectively. In this study group I of 20 patients of stapler male /female distribution was 13 (65%) / 07 (35%) & In group II of 20 patients of open male /female distribution was 17 (85%) / 03 (15%)

**Table 3:-** Comparison Of Duration Of Surgeries In Stapler V/S Open Group.

Duration of surgeries(minutes)	STAPLER	OPEN
20-30	02	00
31-40	04	00
41-50	14	02
>50	00	18
Total	20	20
Mean±SD	44.25±6.93	63±7.14

Table no 3 shows the duration of surgery in the stapler group of 20 patients was 20-30 minutes in 02 patients, 31-40 in 04 patients, 41-50 was in 14 patients. Whereas duration of surgery in an open group of 20 was 41-50 minutes in 03 patients & > 50 minutes in 18 patients. So, it was observed the duration of surgery is significantly low in the STAPLER group < 50 minutes in all 20 patients [100%] MEAN AVERAGE with significant.  $t = -8.427$ ,  $P < 0.001$  values. As compared to Open Group the duration of surgery is < 50 minutes in 02 patients [10%] only whereas >50 mins in 18 people. [90%]

**Table 4:-** Comparison Of Duration Of Hospital Stayin Days In Stapler V/S Open Group.

Duration of Hospital stay in Day	STAPLER		OPEN		Total	
	NO	Percent	NO	Percent	NO	Percent
< 2	01	5	00	00	01	2.5
2-4	12	60	03	15	15	37.5
>4	07	35	17	85	24	60
Total	20	100 %	20	100 %	40	100%
Mean±SD	4.15 ±1.03		6.05 ±1.84			

In this table Duration of hospital stay in Stapler group of 20 patients, the postoperative stay was less than 4 days in 13 cases (65%) which is significantly low with  $t = 4.029$ ,  $P < 0.001$  which is significant in comparison to open Group of 20 patients less than 4 days post operatively stay was in 03 patients only (15%), in 17 cases post operative stay was > 4 days (85%)

**Table 5:-** Comparison Of Recovery In Days In Stapler V/S Open Group.

Recovery in	STAPLER		OPEN	
	No	Percent	No	Percent
<10days	17	85	1	5
>10 days	03	15	19	95
<b>Total</b>	<b>20</b>	<b>100 %</b>	<b>20</b>	<b>100 %</b>
Mean±SD	7.55±1.27		12.45±2.32	

Table 5 shows Total Recovery in stapler group of 20 patient was < 10 days in 17 (85%) cases & was > 10 days in 03 patients (15%) whereas in open group of 20 patients the recovery was >10 days in 19 cases (95%) & was 10 days in 01 patients (05%) with  $t=10.571$ ;  $P<0.001$  which is significant. Also, we have found Mean $\pm$ SD 7.55 $\pm$ 1.27 in the stapler group and 12.45 $\pm$ 2.32 in the open group.

**Table 6:- Comparison Of Grade Of Hemorrhoids In Stapler V/S Open Group.**

GRADE OF HEMORRHOIDS	STAPLER	%	OPEN	%	TOTAL
GRADE II	17	85	04	20	21
GRADE III	03	15	07	35	10
GRADE IV	00	00	09	45	09
TOTAL	30	100%	20	100%	40

Above table document group I of stapler hemorrhoidopexy of 20 patients 17 patients (85%) were grade II hemorrhoids & 03(15%) were grade III hemorrhoids. Whereas in group 2 of 20 patients open hemorrhoidectomy 09 patients (45%) were of grade IV hemorrhoid, 07 patients (35%) were grade III hemorrhoids & 04 patients (20%) were of grade II. The present table also documents of 21 patients with grade II hemorrhoids 17 underwent stapler hemorrhoidopexy & 04 had open surgery whereas out of 09 cases of grade IV hemorrhoids all 09 patients had open hemorrhoidectomy. In 10 patients of grade III hemorrhoid 03 patients had stapler & 07 patient had open surgery.

**Table 7:- Comparison Of Post Defecation Pain Scores With Analgesic On Pod-1 In Stapler V/S Open Group.**

PAIN SCORE 1 <sup>ST</sup> DAY	STAPLER	OPEN
<30	15	12
30 to 40	05	05
<40	00	03
Total	20	20
Mean $\pm$ SD	22 $\pm$ 4.97	35.5 $\pm$ 7.59

Table shows on POD 1 In the stapler group patients reported significantly less pain as compared to open group with mean & standard deviation as follows. We have found Mean $\pm$ SD 22 $\pm$ 4.97 in the stapler group and 35.5  $\pm$  7.59 in the open group. P-Value <0.001 which is significant.

**Table 8:- Comparison Of Post Defecation Pain Scores Without Analgesic On POD -3 & POD-7 In Stapler V/S Open Group.**

PAIN SCORE	STAPLER	OPEN	P VALUE
3 <sup>RD</sup> DAY	2.5 $\pm$ 4.44	16.5 $\pm$ 7.45	P<0.005, significant
7 th Day	00 $\pm$ 00	4 $\pm$ 5.02	

In the present table - on POD -3 Resolution of Pain was significantly more in Open Group We have found Mean $\pm$ SD 2.5 $\pm$ 4.44 in stapler group and 16.5 $\pm$ 7.45 in the open group as compared to Mean $\pm$ SD 22 $\pm$ 4.97 in stapler group and 35.5  $\pm$  7.59 in the open group on 1st POD. There was no Pain on POD - 7 in the stapler group where as in the open group We have found Mean $\pm$ SD 4 $\pm$ 5.02. P Value is <0.005, which is significant.

**Table 9:- Comparison Of Post Operative Bleeding In Stapler V/S Open Group.**

POST OPERATIVE BLEEDING IN DAYS	STAPLER			OPEN		
	Noticeable	Significant	No bleeding	Noticeable	Significant	No bleeding
Day 1	13	02	05	10	08	02
Day 3	02	00	18	05	03	12
Day 7	00	00	20		00	17
Total	15	02	43	18	11	31

This table shows on a post-operative day 1 bleeding as observed in the stapler group was noticeable in 13 & significant in 02 cases whereas it was noticeable in 10 & significant in 08 cases. this significantly reduced in both groups on 3rd pod bleeding as observed in stapler group was noticeable in 02 only whereas it was noticeable in 05 & significant in 3 cases in the open group. On pod 7 none of the patients in the stapler group had bleeding whereas 3 patients in the open group still had noticeable bleeding.

**Table 10:-** Comparison Of Urinary Retention Instapler V/S Open Group.

URINARY RETENTION	STAPLER	PERCENT	OPEN	PERCENT	TOTAL
Absent	18	90	17	85	35
Present	02	10	03	15	05
<b>Total</b>	20	100	20	100	40

Urinary Retention in the stapler group was present in 2 cases whereas in the open group 3 patients went into urinary retention. P-value = 0.632 which is Not significant.

### Discussion:-

Hemorrhoidectomy is the accepted method for the treatment of large symptomatic piles. Conventional hemorrhoidectomy is an effective operation that has withstood the test of time however, the problem of postoperative pain has never been satisfactorily addressed. The postoperative pain related to Conventional hemorrhoidectomy is well known. Patients will frequently avoid definitive treatment of their disease for many years so as to avoid this very problem. Also, the high postoperative morbidity and long recovery have prompted the need for an alternative procedure. Several techniques, including diathermy haemorrhoidectomy, dilatation with banding, and cryo-haemorrhoidectomy have been tried. Stapler hemorrhoidopexy offers a significantly less painful alternative that provides patients definitive treatment of their disease in a single sitting. Stapler hemorrhoidopexy was introduced in 1995 by Longo. A novel technique in dealing with the management of hemorrhoidal disease, it has emerged as an alternative to open hemorrhoidectomy, long considered the "gold standard". It treats the mucosal prolapse, with concurrent disruption of the blood supply to the hemorrhoidal tissue. The technique has been standardized and the indications, contraindications, and operative technique have been defined. Several randomized trials have shown the efficacy and safety of the procedure. There has been some concern and reluctance in accepting Stapler hemorrhoidopexy as few serious complications have been reported. These include persistent postoperative pain, fecal urgency, recto-vaginal fistula, rectal obstruction, perforation peritonitis, and pelvic sepsis. These have all been seen by most investigators in the early part of the learning curve. Numerous controlled studies have already demonstrated that this technique is associated with less postoperative pain and a quicker recovery. Right from the earliest study, there is a high patient satisfaction rate. However, most of these studies were conducted in highly specialized centers. The present study was designed to compare the short-term results of Stapler hemorrhoidopexy with Milligan- Morgan Hemorrhoidectomy. In our study 40 patients of Grade II, III, IV hemorrhoids were admitted and operated in Sri Aurobindo Institute of Medical Science between November 2017 to May 2019. they were reviewed, recorded on prefixed proforma & results studied in context with defined aims & objectives of the study & compared with other similar studies available.

### Age & Sex Distribution:

In our study age group < 40 have undergone more stapler hemorrhoidectomy 11/20 [ 55%] as compared to age group >40 who have undergone more open surgery 12/20[60%] we have found Mean±SD 42.1±13.86 in the stapler group. In Sachin ID et al 2017 in a comparative study consisting of 100 patients divided into two groups, 50 in stapled hemorrhoidopexy and 50 in open hemorrhoidectomy was undertaken to study the short-term results. (9) The mean age of the patients was 39.69±9.49 years and 39.2±11.03 years in the stapled hemorrhoidopexy and open hemorrhoidectomy groups respectively. In the stapled hemorrhoidopexy group, 54% were males and 46% were females. In the open hemorrhoidectomy group, 66% were males and 34% were females. (10) In Stolfi, et al (2008) in a study involving one hundred seventy-one patients comparing Stapler hemorrhoidopexy and milliganmorgan technique, Onehundred seventy-one patients (95 cases in SH group and 76 cases in MMH group) entered the study. (11) In the Grade of hemorrhoids study of 21 patients with grade II hemorrhoids, 17(81%) underwent stapler hemorrhoidopexy & 04(19%) had open surgery whereas out of 09 cases of grade IV hemorrhoids all 09(100%) patients underwent open hemorrhoidectomy. In 10 patients of grade III hemorrhoid 03(30%), patients underwent stapler & 07(70%) patients underwent open surgery. In P. Krishna Kishore, B. ManjuSruthi, G. Obulesu. (2016) Out

of the total number of 100 patients 73 patients had grade III hemorrhoids and 27 patients had grade IV hemorrhoids. (12)

#### **Operating time:**

In our study, Stapler hemorrhoidopexy was associated with less operating time meantime was 44 minutes Open Hemorrhoidopexy was associated with more operating time and its mean time was 63 minutes. In Sachin ID et al 2017 study the stapled hemorrhoidopexy group, 38% underwent surgery within 20 - 30 min. The mean duration of surgery was 33 min, ranging from 25 to 55 minutes. In the open hemorrhoidectomy group, the mean duration was 44 minutes, ranging from 25 to 55 minutes. (10) Kirsch JJ et al (1998/1999) study showed that the length of surgery for both types of operation was the same (13) In Ng KH, et al (2006) study published recently the largest trial describing experience with 3,711 Stapler hemorrhoidopexies. The median duration of operation was 15 minutes (range 5 to 45 minutes), much lower than most studies (14)

#### **Post Operative Pain:**

Postoperative pain was managed according to the guidelines of the French Anaesthesia Society. The pain was assessed using a visual analog scale (VAS). In our study, a Comparison of Pain scores in two groups of patients was carried out. The pain scores were significantly higher in the open group at post opt. day 1,3,7. Analgesics were given on Post opt. day 1 in both the group. In the stapler group, patients reported significantly less pain as compared to the open group with meanSD  $22 \pm 4.97$  in the stapler group and  $35.5 \pm 7.59$  in the open group on POD - 1 following administration of analgesics. On POD -3 and POD -7 Resolution of Pain was significantly more in Open Group on POD - 3 We have found Mean  $\pm$  SD  $2.5 \pm 4.44$  in stapler group and  $16.5 \pm 7.45$  in the open group. There was no Pain on POD - 7 in the stapler group whereas in the open group We have found Mean  $\pm$  SD  $4 \pm 5.02$ . In Sachin ID et al 2017 study showed the pain scores were significantly higher in the open group on POD -1 at the time of the first defecation with pain score being  $1.89 \pm 0.80$  in the open group as compared to the stapler group in which pain score was  $1.42 \pm 0.62$  (10) In Kirsch JJ et al (1998/1999) In comparison with the conventional open excision, patients with a stapled haemorrhoidectomy required considerably fewer analgesics. (13)

#### **Duration of Hospital Stay:**

In our study the Duration of hospital stay in Stapler group postoperative was less than 4 days in 13 (65%) cases which is significantly low as compared to open Group less than 4 days post operatively stay was in 03(15%) patients only, in 17(85%) cases post operative stay was > 4 days. Sachin ID et al 2017 In this study the mean duration of hospital stay (in days) was 2 days in the stapled group as compared to 4 days in the open group (10). In P. Krishna Kishore, B. ManjuSruthi, G. Obulesu (2016) in this study the average post-operative stay for patients who underwent stapler hemorrhoidectomy was 3 days, whereas for open hemorrhoidectomy 4.6 days (12). In Tjandra JJ, et al (2007) reported findings of shorter hospital stay in patients undergoing Stapler hemorrhoidopexy (weighted mean difference, -1.07 days; P = 0.0004) (15).

#### **Recovery Days:**

In our study When comparing time taken for return to work in days in two groups of patients, a mean of 7.55 days in the Stapler group and 12.45 days in the open group was noted. About 50 % of the Stapler group had returned to work at the end of one week and the rest by two weeks. Only one patient took 16 days to return to work. In Sachin ID et al study 80 % were discharged within 2 days in the stapled group, whereas only 2 % in the open group. 74% were discharged at the end of 4 days in the open group. (10). In Franc, et al (2002) study 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 = .001). The Stapler hemorrhoidopexy allowed a faster functional recovery with shorter time off work (weighted mean difference, -8.45 days; P < 0.00001). (16)

#### **Post Operative Bleeding:**

No Major postoperative complications were reported in our study. In our study on POD 1 bleeding as observed in the stapler, the group was noticeable in 13 (65%) & significant in 02(10%) cases whereas in the open group it was noticeable in 10(50%) & significant in 08(40%) cases. This significantly reduced in both groups. As on 3rd pod bleeding as observed in the stapler, the group was noticeable in 02(10%) only whereas it was noticeable in 05(25%) & significant in 3 (15%) cases in the open group. On pod 7 none (0%) of the patients in the stapler group had bleeding whereas 3(15%) patients in the open group still had noticeable bleeding. In Sachin ID et al 2017 Study bleeding was seen in 14% of patients in the stapled hemorrhoidopexy group and 22% of patients in the open hemorrhoidectomy group. (17). In Stolfi, et al (2008) study there were no differences in analhemorrhage

among the 2 groups. (18). In P. Krishna Kishore, B. ManjuSruthi, G. Obulesu. (2016) study Bleeding in the postoperative period was nil in the cases of stapler hemorrhoidectomy whereas bleeding was seen in all the cases of open hemorrhoidectomy which ranged from dressing soakage to about few drops of blood during defecation (19)

#### **Urinary Retention:**

In our study, Urinary Retention in the stapler group was present in 2(10%) cases whereas in the open group 3(15%) patients went into urinary retention. There was no significant difference between the two groups. In Sachin ID et al 2017 study, Urinary retention was seen in 16% of patients in stapled hemorrhoidectomy group and 30% of patients in open hemorrhoidectomy group. (17). In Stolfi, et al (2008) study there were no differences in Urinary Retention among the 2 groups. (18)

#### **Conclusion:-**

Hemorrhoids is one of the most common diseases suffered by mankind causing significant discomfort and most common clinical presentation being bleeding and prolapse per rectum. Surgery is deferred by patients to the last limits due to fear & morbidity of surgery there has always been scope for the patient-friendly procedure which gives permanent cure with minimum morbidity & discomfort. The commonly done surgical procedure is Milligan–Morgan Open hemorrhoidectomy. This study was done to compare the above procedure with stapler hemorrhoidectomy popularized by Longo. to confirm its supremacy over the open procedure in terms we have discussed in paragraph one. The results of this study concluded that Stapler hemorrhoidectomy had lesser operating time, lower duration of hospital stay, and quicker recovery with less postoperative pain & bleeding as compared to Open hemorrhoidectomy. Hence it was concluded that stapler hemorrhoidectomy is a better option as compared to open hemorrhoidectomy for grade II, grade III, & a few selected cases of grade IV hemorrhoids.

#### **Funding:**

No

#### **Conflict of interest:**

No

#### **Ethics approval:**

Yes

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