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Surgery

A COMPARATIVE STUDY OF OPEN HAEMORRHOIDECTOMY WITH MINIMALLY INVASIVE PROCEDURE FOR HAEMORRHOIDS (M.I.P.H)

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ABSTRACT

Background: The most common method of surgical treatment for hemorrhoids is haemorrhoidectomy; the most common operative technique used in it is Milligan-Morgan open haemorrhoidectomy. The other technique is minimally invasive procedure for haemorrhoids is relatively newer technique.

Objectives: To compare open haemorrhoidectomy with minimally invasive procedure for haemorrhoids with special reference to operative time, post operative pain, post operative bleeding, duration of hospital stay and recurrence.

Material and Methods: This was a prospective study comparing the two types of surgical procedures for haemorrhoids ie. Milligan-Morgan haemorrhoidectomy, and Minimally invasive Procedure for haemorrhoids in 50 patients admitted and underwent surgery in with complaints of bleeding per rectum, pain during defecation, mass per rectum, discharge and irritation.

Results: Haemorrhoids were common in the age group of 40yrs and above with mean age of presentation 45.8±13.8 years. There are less number of patients above 60 yrs. Male (69%) patients are more in number than female (31%) patients. Bleeding, pain and mass per rectum were the most common complaints as majority of patients operated are grade III and grade IV. In this study, 51% of the patients are grade III and rest are grade II &IV. The operating time in present study for stapler haemorrhoidectomy was 28.76±3.5min and for open haemorrhoidectomy 36.2±6.5min. Stapled haemorrhoidectomy was significantly faster than open haemorrhoidectomy (21min versus 31 min). Mean score of pain for MIPH group is 3.5±2 and for Milligan-Morgan group is 5.7±2.2. Pain usually appeared after weaning off of the spinal anaesthesia for which NSAIDs or Tramadol was used. Bleeding in the post-operative period was in 9.5% of the cases of stapler haemorrhoidectomy where as bleeding was seen in 20.8% of the cases of open haemorrhoidectomy which ranged from dressing soakage to about few drops of blood during defecation.

Conclusion: Stapler haemorrhoidopexy is thus a viable alternative to to open haemorrhoidectomy in it's indicated group of patients who can afford the stapler with distinct advantages.

KEYWORDS : Stapler haemorrhoidopexy, Milligan-Morgan Haemorrhoidectomy, Minimally invasive procedure

Background:

Haemorrhoidal disease is one of the oldest illness known to mankind, perhaps since the time he assumed upright position. It leads to significant pain, discomfort, and decreased quality of life. It is one of the common aliments to afflict mankind, but it is impossible to give an accurate figure of prevalence, because although many patients present with symptoms, many don't & some never bring it to notice of clinicians. The word haemorrhoid derived from Greek, which means flow of blood, the word pile is derived from Latin which means a pill or ball, indicating two cardinal symptoms of this disease bleeding per rectum and mass per anum. The most common method of surgical treatment is haemorrhoidectomy; the most common operative technique used in it is Milligan-Morgan open haemorrhoidectomy. The other technique is minimally invasive procedure for haemorrhoids is relatively newer technique.

Aim and Objectives:

This study aimed to compare both Milligan-Morgan haemorrhoidectomy with minimally invasive procedure for haemorrhoids in reference to operative time, post operative pain, post operative bleeding, duration of hospital stay, and recurrence.

Material and Methods:

This was a prospective study comparing the two types of surgical procedures for haemorrhoids in 50 patients admitted and underwent surgery in Career Institute of Medical Sciences and Hospital Lucknow, Uttar Pradesh" between May-2016 to May-2017. In the present study 50 cases of 2nd, 3rd and 4th degree haemorrhoids were chosen with complaints of bleeding per rectum, pain during defecation, mass per rectum, discharge and irritation.

Inclusion Criteria: Patients with complaints of bleeding per rectum, mass per rectum, pain, irritation, discharge per rectum. Patients with 2nd, 3rd and 4th degree haemorrhoids who were suitable for surgery.

Exclusion Criteria: Haemorrhoids associated with complications (ulceration, recurrent cases, strangulation. Patients divided as two groups in which 25 patients treated with Milligan-Morgan haemorrhoidectomy (M-M) and 25 patients with Minimally invasive Procedures for haemorrhoidectomy(MIPH). Patients were prepared the previous day, perianal region, perineum and back were shaved. 0.5 ml of tetanus toxoid injection was given intramuscularly, written consent was taken, Pre anaesthetic evaluation was done and a soap water enema was given the night before and on the morning of the surgery. Patients were kept nil orally from the previous night. Antibiotics were given on the day of surgery, before the procedure. Patient was explained about the effects and complications of the procedure. A detailed history of each patient was taken with personal history, family history, diet history with systemic examination of respiratory, cardiovascular, per abdominal examination to know any associated disease and to rule out any cause predisposing to haemorrhoids and local examination including proctoscopy was done as per proforma made for the study and the data entered in the proforma. Investigations included haemoglobin, total count, differential count, erythrocyte sedimentation rate, blood sugar, bleeding time, clotting time, blood urea, serum creatinine and urine routine. Other investigations like Chest x-ray, electrocardiogram, sigmoidoscopy and colonoscopy were done only in selected cases. The patients were explained in detail about their disease and the various modalities of treatment as Open haemorrhoidectomy, Stapler haemrrhoidopexy, Rubber band ligation, cryotherapy, sclerotherapy with the advantages and disadvantages of each. Willing patients were selected and examined and investigated as per proforma. Analysis was made on basis of percentages, mean, standard deviation, T-test and chi-squre test using **SPSS** software version 20.0, p value < 0.005 taken as statistically significant.).

Results:

In the present study, more patients belong to 41-50 years group, with male predominance, with mean age of presentation 45.8 ± 13.8years. 70% are male patients and 30% are female patients.

Age in years	Male	Female	Total
≤30	6	2	
31-40	8	2	
41-50	7	6	
51-60	7	3	
>61	7	2	
Total	35	15	
N=50			
MIPH	18	8	
Milligan-Morgan	17	7	
Total	35	15	50

Table 1: Age, sex distribution of patients

No of Patients	No.	%
Bleeding per rectum	40	80%
Mass per rectum	25	50%

Painful defecation	15	30%
Constipation	13	26%
Pruritus ani	07	14%

Table 2: Presenting symptoms of study group
Bleeding per rectum is most common symptom with 80%, followed by mass per anum & painful defecation with 50% and 30% respectively.

Duration of operative time in mins	MIPH	MIPH %	M-M	M-M %
20-30 min	16	76	6	25
31-40 min	5	24	13	54
41-50 min	0	0	5	21
Post Operative Pain Scores				
Mild (0-3)	14	66.66	6	25
Moderate (4-7)	5	23.8	12	50
Severe (8-10)	2	9.5	6	25
Post Operative Bleeding				
Number of patients who had post-operative bleeding	2	9.5	5	20.8
Post Operative Urinary Retention				
Number of patients who had post-operative urinary retention	2	9.5	3	12.5
Post Operative Stay				
0-1 Days	18	86	6	25
2-3 Days	3	14	15	62.5
>4 Days	0	0	3	12.5

Table 3: Variables in comparison of both procedures
Table 3 shows Stapler haemrrhoidopexy is relatively faster with mean operative times as (28.76±3.5mins vs 36.2±6.58 mins) with p value of <0.005. Pain is assessed with visual analogue score from 0-10 more patients of MIPH had mild grade pain and more percentage of patients Milligan-Morgan group had higher grade pain. Mean score of pain for MIPH group is 3.5±2 and for Milligan-Morgan group is 5.7±2.2, With p value < 0.005. Pain usually appeared after weaning off the spinal anaesthesia for which NSAIDs or Tramadol was used. 9.5% of MIPH patients had post op bleeding & 20.8% of Milligan-Morgan patients had post op bleeding with p value >0.005. Post-operative urinary retention in MIPH and Milligan-Morgan groups are 9.5% and 12.5% respectively. There is no significant difference between two groups in post operative urinary retention with p value>0.005. MIPH group patients 86% are discharged in 0- 1 day, and 62% of Milligan-Morgan group are discharged in 2-3 days. 0% patient stayed ≥4 days in MIPH group, and 12% of Milligan-Morgan group stayed for ≥4 days. Mean post-operative stay for MIPH group is 1.1±0.35 days, for Milligan-Morgan group is 2.3 ±1.2 days with p value <0.005.

Complications	MIPH	M-M
Anal Stenosis	-	2
Relapse	1	1
Incontinence	-	-

Table 4: Long term Complications
Patients had been followed for 6months to 24 months, found 1 case of relapse in MIPH and 1 case of relapse in Milligan-Morgan has been identified with 4.76% vs 4.16 %with p value of >0.005. 2 cases of anal stenosis identified in Milligan-Morgan group and no cases in MIPH group with 8.3% vs 0%. No cases of incontinence seen in both groups.

Discussion:
The prospective study that was conducted in our hospital showed that haemorrhoids were common in the age group of 40yrs and above with mean age of presentation 45.8±13.8 years. It is as per the conventional teaching. There are less number of patients above 60 yrs. Male (69%) patients are more in number than female(31%) patients. Bleeding, pain and mass per rectum were the most common complaints as majority of patients operated are grade III and grade IV. In this study 51% of the patients are grade III and rest are grade II &IV, It is as per the conventional teaching. The operating time in our study for stapler haemorrhoidectomy was 28.76±3.5min and for open haemorrhoidectomy 36.2±6.5min. It is in concordance with the study conducted in France by Dr. Jean François Gravié[1]. Stapled haemorrhoidectomy was significantly faster than open haemorrhoidectomy (21min versus 31 min). The time taken for stapler haemorrhoidectomy was more as the procedure is relatively new in our hospital and there is a learning curve involved. In this study more patients of MIPH had mild grade pain and more percentage of patients Milligan-Morgan group had higher grade pain. Mean score of pain for MIPH group is 3.5±2and for Milligan-Morgan group is 5.7±2.2. It is in concordance with the study conducted by Dr. Jean François Gravié et al1, Dr. Kim JS et al[2]; Dr.Ammaturo C et al[3], Dr. Tjandra JJ & others[4],Dr. Nisar PJ & others[5].Dr. Raahave D et al[6], Dr. Ganio E et al[7], Dr. . Mehingan BJ et al[8], Dr. Rowsell M et al[9],Dr. Ho YH, Cheong WK, Tsang C, et al[10],Dr. Shalaby R[11],Dr. Boccasanta P et al[12],Dr. Wilson MS et al[13],Dr. Pavlidis T et al[14]. Pain usually appeared after weaning off of the spinal anaesthesia for which NSAIDs or Tramadol was used. In this study Bleeding in the post operative period was in 9.5% of the cases of stapler haemorrhoidectomy where as bleeding was seen in 20.8% of the cases of open haemorrhoidectomy which ranged from dressing soakage to about few drops of blood during defecation. It is in accordance to the Trial by DR. JUSTIN DAVIS[15],; in which the post operative bleeding was significantly lower. But in this study the difference is statistically not significant as p value is > 0.005. Urinary retention in our study is 9.5% in MIPH group and 12.5% in Milligan-Morgan group which is not differed significantly, with p value > 0.005, which is in accordance with the Dr. Kim JS et al[2], and as per the Trial by DR. JUSTIN DAVIS[15] in which the problem of urinary retention was 15% and 20% respectively. In this study mean post operative hospital stay in MIPH group is 1.1±0.35 days and 2.3±1.2 days in Milligan-Morgan group, which is statistically significant with p value < 0.005, which is in accordance with the studies of Dr . Jean François Gravié et al[1], Dr. Ammaturo C et al[3],Dr. Nisar PJ et al[5],Dr. Raahave D et al [6],Dr. Hetezer FH et al[16]. Several randomized trials published have revealed that the results of the stapler haemorrhoidopexy were less favourable than Milligan-Morgan haemorrhoidectomy in terms of recurrence, controversy is started when there are other studies or articles based on systematic reviews in which similar or better clinical results were obtained in patients treated with Stapler haemorrhoidopexy compared to Milligan-Morgan haemorrhoidectomy.. In this study patients has been followed for 6months to 24 months, found 1 case of relapse in MIPH and 1 case of relapse in Milligan-Morgan has been identified with 4.76% vs 4.16% with p value of >0.005. It is in accordance with the studies of **Dr. Kim JS et al**[2] in which the recurrence rates for stapled and open haemorrhoidectomy were 23% and 18% respectively but in discordance with Dr. Jean François Gravié et al 1 in which the recurrence was 7.5% for stapler and 1.8% for open. Milligan-Morgan procedure is associated with anal stricture as complication(41), in this study 2 patients of anal stenosis has been identified with 8.5% and no cases in stapler haemorrhoidopexy with p value >0.005. Many studies have been reported regarding haemorrhoids which are **Dr. Kim JS et al** (2013)[2] compared Stapled hemorrhoidopexy with Milligan-Morgan hemorrhoidectomy in circumferential third-degree hemorrhoids for long term results. Concluded stapled hemorrhoidopexy is as effective as the Milligan-Morgan procedure in patients with circumferential third-degree hemorrhoids, with similar rate of recurrence in the long term. **Dr. Ammaturo C et al (2012)[3]:** conducted a randomized clinical trial comparing Stapled hemorrhoidopexy with Milligan-Morgan hemorrhoidectomy for grade III haemorrhoids. Concluded Stapled hemorrhoidopexy offers greater short term benefits with reduced pain, shorter length of hospital stay, earlier return to work and high patient satisfaction, but less effective than Milligan-Morgan hemorrhoidectomy as a definitive cure of grade III haemorrhoids.

Dr. Giordano P et al (2009)[17] conducted *a* meta-analysis of randomized controlled trials in long-term outcomes of Stapled Hemorrhoidopexy vs Conventional Haemorrhoidectomy. Concluded Stapled hemorrhoidopexy is a safe technique for the treatment of haemorrhoids but carries a significantly higher incidence of recurrences and additional operations compared with Conventional Haemorrhoidectomy. It is the patient's choice whether to accept a higher recurrence rate to take advantage of the short-term benefits of Stapled Hemorrhoidopexy.

Dr. Burch J et al (2008)[18] conducted a systemic review and economic evaluation in stapled haemorrhoidopexy for haemorrhoids. Concluded Stapled Hemorrhoidopexy was associated with less pain in the immediate postoperative period, but a higher rate of residual prolapse, prolapse in the longer term and re intervention for prolapse. There was no clear difference in the rate or type of complications associated with the two techniques. The absolute and relative rates of recurrence and re intervention for Stapled Hemorrhoidopexy and Conventional Haemorrhoidectomy are still uncertain.

Dr. Jayaraman S et al (2007)[19] conducted a systematic review to

compare the long-term results of stapled hemorrhoidopexy with conventional excisional hemorrhoidectomy in patients with internal hemorrhoids. Concluded Conventional hemorrhoidectomy is superior to stapled hemorrhoidopexy for prevention of postoperative recurrence of internal hemorrhoids. Fewer patients who received conventional hemorrhoidectomy complained of haemorrhoidal prolapse in long-term follow-up compared with stapled hemorrhoidopexy.

Conclusion:

Haemorrhoids are a common problem worldwide, a penalty paid by human beings for their erect posture. Lack of fibre in diet and chronic constipation are the root causes for this problem. The common mode of presentation is painless bleeding, prolapsing pile mass and pain when complicated. Surgery for haemorrhoids has evolved over a period of time. Time tested open haemorrhoidectomy (excision ligation) is still the gold standard all over the world. Every newer procedure is compared with open haemorrhoidectomy for its efficacy. Stapler haemorrhoidectomy though expensive has distinct advantages of shorter operating time with minimal intraoperative bleed, lessened postoperative complications like pain, urinary retention, and bleeding. Additional benefits include shorter hospital stay and early return to the work. Although various international studies showing increased recurrence in stapler haemorrhoidopexy, there is no difference of recurrence in either procedures in this study. Stenosis is almost negligible in comparison to open haemorrhoidectomy. Stapler haemorrhoidopexy is thus a viable alternative to open haemorrhoidectomy in its indicated group of patients who can afford the stapler with distinct advantages. The procedure is reproducible, easy to perform and different operators can achieve comparable outcomes as long as they follow the underlying principles and have a sufficient degree of experience.

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