

Study of Open Hemorrhoidectomy Versus Open Hemorrhoidectomy Along with Internal Sphincterotomy in the Management of Post - Operative Pain

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Abstract: *Objective:* To compare short term outcome of post - operative pain in patients operated for hemorrhoidectomy alone and hemorrhoidectomy along with internal sphincterotomy. *Study design:* Prospective comparative clinical study. *Source of sample:* Patients admitted in the surgical ward of all units of GREAT EASTERN MEDICAL SCHOOL & HOSPITAL who undergo open hemorrhoidectomy. *Study period:* January 2023 to February 2024. *Methodology:* 60 patients were divided in to two groups by using a random sampling technique. Group A underwent Milligan & Morgan open hemorrhoidectomy where as Group B was operated for Milligan & Morgan open hemorrhoidectomy with Lateral internal sphincterotomy. Post operatively, using the visual analog scale (VAS), pain will be assessed from 12 hour, 24 hours, and 48 hours after surgery. Postoperative bleeding and urine retention were noted. Regular follow - up will be done on the 7th day, 1 month, and 3 months after the surgery. *Results:* Patients who underwent LIS showed a significant reduction in post operative pain at 12 hours ($p=0.0006$), 24 hours ($p=0.0085$), 48 hours after surgery ($p=0.0098$); the time taken to request rescue analgesia was significantly lower after LIS ($p=0.045$). Side effects such as Post operative bleeding was similar between the two groups. Need for bladder catheterization to drain urine was significantly lower in patients who underwent LIS ($p=0.0016$). Post operatively, return to work & Hospital stay are assessed in all the patients with other complications. The difference between the both groups was significant i. e. $p < 0.05$. *Conclusion:* Lateral internal sphincterotomy combined with hemorrhoidectomy significantly reduces the post operative pain without increasing morbidity.

Keywords: Hemorrhoids, lateral internal sphincterotomy, open hemorrhoidectomy, post operative pain

1. Introduction

Hemorrhoids (Greek: haima = blood, rhoos = flowing; synonym: piles, Latin: pila= a ball). Hemorrhoids are dilatation of cushions of submucosa in anal canal containing venules, arterioles, and smooth muscle fibers [1] Usually located at 3, 7, 11 o'clock position [2]. i. e left - lateral, right - anterior, and right - posterior positions. lateral internal sphincterotomy is a commonly used procedure to relieve spasm and pain in a fissure in ano [4]

External hemorrhoids reside below dentate line and are lined by anoderm which is richly innervated. Internal haemorrhoids reside above dentate line and lined by anorectal mucosa. Internal hemorrhoids can bleed but they rarely become painful. Other than 3, 7 & 11 o'clock position, hemorrhoids may reside between the main pile masses which are internal hemorrhoids at the secondary position.

Grading of Internal hemorrhoids [1] based on the extent of prolapse: -

First degree - bulging into AC present and on straining can prolapse beyond dentate line

Second degree - prolapse at the time of defecation but reduce spontaneously.

Third degree - prolapse at time of defecation and reduced only manually.

Fourth degree - irreducible prolapse & are at risk of strangulation.

Usually Grade 1&2 hemorrhoids does not require surgical management. Grade 3 and grade 4 hemorrhoids and grade 2 not responding to medical treatment are treated surgically. Out of various techniques of surgery employed for hemorrhoids like rubber band ligation, infrared photocoagulation [5], sclerotherapy, cryosurgery, bipolar diathermy [6], closed hemorrhoidectomy [7], open hemorrhoidectomy [8] and stapled hemorrhoidectomy. Milligan & Morgan open hemorrhoidectomy is the best option for lifetime relief from symptomatic hemorrhoids [9] pain is common complication after hemorrhoidectomy in the 1st week of postoperative period which makes the patient uncomfortable.

The reason for pain in the postoperative period after hemorrhoidectomy is due to the exposed internal sphincter fibres spasm after open hemorrhoidectomy [7, 8, 9].

Sphincterotomy decreases pain postoperatively by reducing the hypertonicity of internal sphincter fibres and also decreases other complications after hemorrhoidectomy [10] include early complications such as primary hemorrhage, retention of urine.

Multiple studies conducted regarding the decrease in postoperative pain with help of lateral internal sphincterotomy. Role of LIS along with hemorrhoidectomy in reduction of postoperative pain is still a topic of discussion among many surgeons.

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3. Results

A total of 60 haemorrhoids cases from this study were randomly divided into two groups about 30 in each group, Group A and Group B. In group A, an open hemorrhoidectomy was performed, and in group B, a lateral internal sphincterotomy was done along with hemorrhoidectomy. In both groups, all the parameters were monitored both during and after surgery. Randomization done by lottery method.

Gender Distribution

After randomization and allocation of patients into groups – A & B, the male & female patients in each group are tabulated

Gender	Male	Female	Total
A	15	15	30
B	13	17	30
Total	28	32	60
P Value	0.6047		

P value obtained is 0.6047, significant at < 0.05. This study in relation to gender is not significant.

Age Distribution

After random distribution of patients into two groups - A & B, patients in both groups were tabulated according to their age groups

Age in years	A	B	Total
< 20	1	0	1
21 - 30	0	5	5
31 - 40	11	7	18
41 - 50	7	9	16
51 - 60	6	7	13
61 - 70	4	2	6
71 - 80	1	0	1
Total	30	30	60
P Value	0.1802		

Obtained p value is 0.1802 Study is significant at p < 0.05 So age has no significant relation.

Pain

After 12 HRS of Surgery:

Pain	A	B
Mild	3	13
Moderate	10	13
Severe	17	4
P Value	0.0006	

After 24 Hours of Surgery

Pain	A	B
Mild	4	13
Moderate	13	13
Severe	13	4
P Value	0.0085	

After 48 Hours of Surgery:

Pain	A	B
Mild	10	20
Moderate	20	10
Severe	0	0
P Value	0.0098	

Use of analgesics

After giving the analgesic inj. tramadol on the operated night to all the patients, they were given chance to intake analgesic on demand depending on their tolerance for pain Given drug – tab. tramadol 100mg orally Pain, based on analgesics requirement categorized into: -

0 - 2 tabs for 48 hrs	Mild
3 - 4 tabs for 48 hrs	Moderate
4 tabs for 48 hrs	Severe

Based on analgesic requirement, no of persons in each category in both groups were tabulated:

Analgesics	A	B
Mild	6	15
Moderate	14	10
Severe	10	5
P Value	0.045	

Obtained p value is 0.045 < 0.05. So, requirement for analgesic was lesser in B group

Bleeding:

Based on observation, postoperatively bleeding categorized into: -

Minimal loss of blood, bound to occur	Confined
Blood loss Above or equal to 20 ml	Moderate
Blood loss = pre - operative bleed	Severe

After categorization number of patients in each group tabulated as: -

Bleeding	A	B
Confined	24	26
Moderate	6	4
Severe	0	0
P Value	0.4884	

Obtained p value is 0.4884

Significant p value for this study is 0.05

Hence, no difference noted statistically between the 2 groups

Urine Retention:

Retention of urine after open hemorrhoidectomy on POD - 1 & POD - 2 may be either due to usage of spinal analgesia or due to pain

All the patients with urine retention i. e those who cannot voluntarily pass the urine were catheterised.

No of Patients with bladder catheterization requirement and those without requirement were tabulated in both groups

Urinary Retention	A	B
Yes	14	3
No	16	27
P Value	0.0016	

Resulted P value is 0.0016, significant

Hence, to drain urine, there is more requirement for bladder catheterization in group - X patients

Incontinence:

Excessive anal dilatation before the surgery and the damage to the IAS muscle fibres extensively results in the incontinence of bowel (both fecal & gas). No of patients with bowel incontinence noted in both groups and tabulated

Incontinence	A	B
Yes	0	1
No	25	24
P Value	0.312	

Only 1 person noted with incontinence in group - B. There is no incontinence noted in group - A. P value - 0.312, Hence not much significant.

Patient Satisfaction:

Symptoms of hemorrhoids include pain, bleeding P/R at time of defecation, pruritis in peri anal region, discomfort at time of walking, difficulty in maintaining personal hygiene.

Post operatively patients are assessed in view of relief of symptoms and satisfaction levels.

It is subjective analysis

Very much satisfied – good

Satisfied & happy - satisfactory

Patient Satisfaction	A	B
Good	20	28
Satisfactory	10	2
P Value	0.0098	

Result p value is 0.0098 < 0.05 & significant

Group – B patients had better standard of living, comfort and good satisfactory levels than Group - A.

Return to Work:

Postoperatively return to work & hospital stay duration are assessed in all the patients along with other complications. Results of return to work are tabulated in terms of mean, SD, SE

Return to Work	A	B
Mean	19.7	14.63
SD	3.22	2.63
P Value	<0.0001	
SE	0.759	

P value is < 0.0001

Significant difference noted b/w 2 groups

Hospital Stay:

After the surgery, duration of hospital stay in both groups were calculated and tabulated in terms of mean, SD, SE

Hospital Stay	A	B
Mean	7.53	5.53
SD	1.19	1.35
P Value	<0.0001	
SE	0.329	

P value is < 0.0001, implies significant difference between the two groups

4. Discussion

Hemorrhoids are one of the common diseases of anal canal. Different modalities of treatment are described since the ages including conservative management for grade 1 and grade 2 hemorrhoids and surgical management like open hemorrhoidectomy (MILLIGAN & MORGAN), closed hemorrhoidectomy procedures like Park’s method, Ferguson’s method, stapled hemorrhoidopexy, Doppler guided hemorrhoid artery ligation. However, open hemorrhoidectomy; mainly for grade 3 and 4 hemorrhoids is still widely used, it is considered as the gold standard procedure for the management of hemorrhoids. The most commonly encountered complications after hemorrhoidectomy are pain in post operative period, urinary retention, bleeding in the post operative period.

During the study, 60 patients with grade - 3/4 haemorrhoids were prospectively randomized for Milligan - Morgan procedure (MMH) and MMH+LS. MMH groups included 30 patients, while the MMH+LS group had 30 patients. All patients had a lower gastrointestinal investigations prior to operation to exclude other colorectal pathologies. All patients had the same kind of preoperative preparation and analgesia during the post operative course.

Postoperatively satisfaction in terms of Pain was measured using a VAS from 0 to 10. Patient satisfaction was defined as decrease or abolition of symptoms and return to normally daily activities. mean, SD, SE of their values have been arrived and tabulated. From the values the test of statistical significance were calculated and inference were obtained.

The regular follow up of all patients was done during 7 day after surgery, 1 month after surgery, 3 month after surgery looking for complications. The pain in the post operative period was assessed using VAS in the 1st 12 hours, 24 hours and 48 hours after surgery. Number of patients experiencing the pain were listed, tabulated and the statistical significance was tested.

The resulted p values were 0.0006 in 12hrs, 0.0085 in 24 hours and 0.0098 in 48 hours after the surgery indicating that there is significant difference in pain between the 2 groups. Further, analgesic usage on demand was studied based on number of tablets used for the 48 hours’ time interval by patients, they were graded and findings were tabulated. These were tested by statistical significance. The p value came out to be 0.045 which implied that the two groups were statistically different in analgesia usage.

Internal sphincterotomy with Milligan & Morgan seemed to have better results in relation to pain and analgesia in post operative period. There is no statistically significant difference between two groups in relation to age, gender, haemorrhoidal degree. There is statistically Significant difference in amount of analgesic usage in both groups at 1 week.

Multiple studies conducted regarding the reduction of pain in post operative period following open hemorrhoidectomy. Of all the study many studies concluded that LIS in addition to open hemorrhoidectomy has proven to reduce the pain in post operative period following hemorrhoidectomy since the cause of pain has been attributed to internal sphincter muscle fibres spasm which is the hypothesis accepted routinely for pain in post operative period following open hemorrhoidectomy technique. Also various complications of hemorrhoidectomy like urinary retention, bleeding, bowel incontinence, return to work, duration of hospital stay studied in all patients. In case of urinary retention the findings were taken by the number of people requiring catheterization in the post operative period and test for significance was taken. The p value came out as 0.0016 implying that the Group B people had less incidence of urinary retention than Group A people. LIS with Milligan & Morgan is significant than Milligan & Morgan alone in relation to pain and urinary retention postoperatively. There is no statistical significance in bleeding between two groups. Duration of hospital stay and average day of return to work was observed and the mean for average hospital stay was 7.53 in Group A and 5.53 in Group B and the p value was < 0.0001 implying the presence of difference between the two. The mean of return to work after surgery was 19.7 in Group A and 14.63 in Group B with p value of <0.0001 indicating the statistical difference between the procedure.

5. Conclusion

This study show that haemorrhoidectomy with LIS is better in terms of less pain but bleeding rate was similar in two groups. It also has proven that the quality of life is improved after surgery by reducing the hospital stay and return to work early after surgery. But incidence of fecal incontinence following internal sphincterotomy noted in some patients. However, follow - up of all those patients for 6 months showed incontinence was temporary and resolved spontaneously. Anal stenosis was not found in any patient in this study. So, lateral internal sphincterotomy, combined with haemorrhoidectomy, can be adopted as a regular surgical technique to reduce pain to achieve maximum patient satisfaction.

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