



The Effect of Lateral Internal Sphinctorotomy on Post-operative Pain Following Open Hemorrhoidectomy

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Abstract

Hemorrhoid, is one of the most common anal pathologies. It is considered as a big issue in our society, surgical treatment is one of the valid ways to treat hemorrhoids. Pain after surgery is the most important complication beside other complications.

Piles are removed with overlying skin removed with hemorrhoidectomy. Pain intensity varies, depending on the patient's pain threshold. This research attempts to see if open hemorrhoidectomy by itself or hemorrhoidectomy and internal sphinctorotomy were effective in treating post-operative pain.

Key Words: Hemorrhoid, Sphinctorotomy, Post-operative Pain.

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Introduction

Hemorrhoids is the most common pathological disease of the anal canal in the Western World. It is caused by the presence of a vascular, submucosal cushion in the anal canal that has shifted downward². The term did come from of the Latin (pila) which means pill or pillow or ball (Safwan A, 2003; Hosseini SV et al, 2007).

Hemorrhoids is classified into external and internal hemorrhoid according to the distance from dentate line, another classification according to degree of prolapsing (1st, 2nd, 3rd and 4th). There are many modalities for treatment of piles; non-surgical Which include injection sclerotherapy, rubber band ligation, infra-red photocoagulation, and surgical like Conventional hemorrhoidectomy, Harmonic scalpel, ligasure, Doppler hemorrhoidal plexus ligation and stapled hemorrhoidopexy (Mukadam P et al, 2017; Diana G et al, 2009).

Hemorrhoidectomy is an optimal for 3rd and 4th

degree piles³. Such procedure is associated with many complications like pain, urine retention, constipation, anal stenosis, soiling, nausea, vomiting and abdominal cramps. Pain represents the most nasty one that starts to appear post-operatively during the first passage of stool. It adversely affects the patient's outcomes through the prolongation in the hospital stay and in the period required to return to normal daily activity. It also increases the requirements for analgesia and readmission (Uzzaman MM et al, 2011).

Spasm of the internal anal sphincter explained the pathophysiology of post-haemorrhoidectomy pain, as did surgeon Eisenhammer, who additionally demonstrated the curative impact of surgical segment of internal sphincter. Most experts believe that there are five possible theories to explain why someone might feel pain after getting hemorrhoid surgery.

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It can cause discomfort by activating pain signals, which is more common with surgeries that cut or make an incision close to the dentate line (somatic and stretch) (Raza M et al, 2013).

The pedicle is impaled on 2 incarcerated smooth muscle fibres and mucosa, with fibres and mucosa being found in the pedicle.

Anesthesia used, post-operative analgesia, and proper education all influence how much pain is encountered after surgery.

Hemorrhoidectomy patients use several techniques to lessen the pain just after surgery. One of the very efficient tactics for relieving pain is clinical lateral sphincterotomy with hemorrhoidectomy. Anal sphincter spasm and post hemorrhoidectomy difficulties are greatly reduced as a result of repealing the hypertonicity (spasm/pressure) of the internal anal sphincter (Das DK et al, 2013).

We compared the postoperative pain experienced by two groups of patients: those who had only an open hemorrhoidectomy (which is traditional), and those who also had an internal sphincterotomy during their procedure (which is newer). Another complication associated to the surgery was also studied across both teams.

Patients and procedures

This was a Prospective survey published on 48 patients from April 2015 to February 2017 who attended Basra Community Hospital and complained of having 3rd and/or 4th degree haemorrhoids. Group A patients underwent traditional hemorrhoidectomy, while Group B underwent hemorrhoidectomy plus laser ligation of the sphincter to treat the anus. Abnormalities like pain, soiling, bloody oozing, and urine reliability were monitored from the first day after surgery to the 14th day after surgery (Marianne J et al, 2011). A prospective randomized study was conducted on patients admitted to Basra General Hospital from April 2015 to February 2017 who diagnosed clinically as a prolapsed piles (3rd or 4th) degree with or without bleeding as shown in picture (1).



Figure 1. Prolapse pile

Exclusion Criteria

Due to the presence of perianal fistula and anal fissure as well as thrombosed, afflicted, and reoccurring piles, many participants were treated from the present study. Patients who have unchecked hypertension, diabetes mellitus, and ischemic heart disease were excluded from the study.

Clinical examination and proctoscopic investigation found all patients to have illness. every patient was screened for routine procedures, such as lab tests and CT scans, and was fit for general anaesthesia. In a randomised controlled trial, patients were randomly assigned to two groups, with group A assigned to undergo a classical hemorrhoidectomy (Milligan-Morgan) and group B to a hemorrhoidectomy with lateral internal sphincterotomy (Alberto A et al, 2011).

Informed consent was obtained from all patients and all patients were informed of their diagnosis.

Surgical Technique

Under general anesthesia, in a lithotomy position classical open hemorrhoidectomy (Milligan-Morgan) was done for group A by dissection of each pile from the muco-cutaneous junction to the pedicles which were transfixed and excised along with the mucosa that overlies. After that and only for group B an anal retractor inserted and open method for lateral internal sphincterotomy done (Suchdev S et al, 2014).

Hemostasis was done for all patients by using a gauze soaked with xylocaine gel followed by gauze dressing.

Post-operative complications like pain, soiling, urine retention and bleeding were evaluated at day zero, 1st day, 7th day and 14th day. While digital anal examination started on day seven looking for stenosis (Setaren S et al, 2009).

All the operations were done by the same surgical

team and the post-operative evaluation were assessed by another team. Severity of post-operative pain assessed rendering to numerical rating scale⁸ as shown in (Fig2).

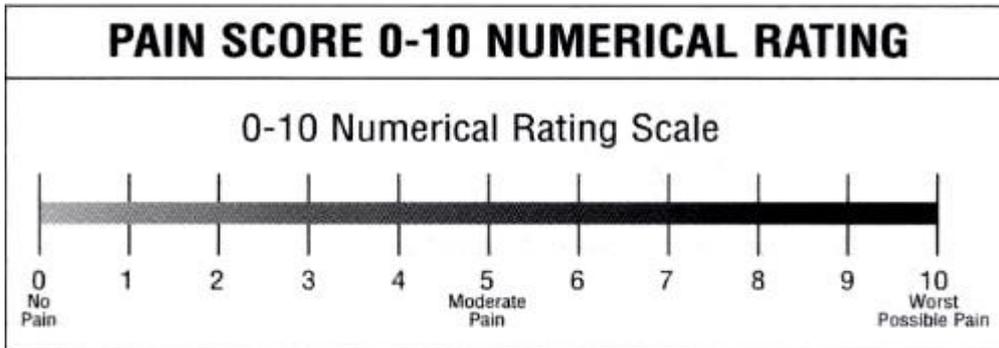


Figure 2. Numerical rating scale

Assessment of requirements for analgesia depends on severity of pain. Mild pain (Safwan A, 2003; Hosseini SV et al, 2007; Mukadam P et al, 2017) was treated with simple oral analgesia, moderate pain (Diana G et al, 2009; Uzzaman MM et al, 2011; Raza M et al, 2013) was treated with NSAIDs injections and severe pain (Das DK et al, 2013; Marianne J et al, 2011; Alberto A et al, 2011; Suchdev S et al, 2014) treated by narcotic injection, while patients without pain was given zero score (Galizia G et al, 2000).

Starting since day seven, all subjects showed digital anal evaluation to determine whether anal stenosis or dilation was required. All data were processed with software from the past three years. The significance level of P < 0.05 was judged to be substantial.

Results

There was a significant difference in pain between group A and B at zero, 1st and 7th post-operative day, while at day 14 there was no significant difference. For other associated complications such as anal stenosis, soiling and bloody oozing there was a significant differences between group A and B, while for urine retention there was no significant difference between A and B.

Fifty seven patients were included in the study, nine of them lost from the study during the follow up. Fifty nine percent (59%) of our patients were female and 41% were male. Female: Male ratio (1:0.7) as shown in Table(1) which shows also the age distribution in both groups. Most of them are

between 40-59 years. The average age of the female patients was 48 years and for males was 40 years.

Table 1. Distribution of patients according to age group

Age group	Number of	Female	Male
20-29	5	1	4
30-39	8	3	5
40-49	18	8	10
50-59	14	7	7
60-70	3	1	2

3

Post operatively, the patients were followed for the early complications like pain, bloody oozing, urine retention and fecal soiling in the zero, first, seventh and fourteenth post-operative day.

Pain stands as the most common complications. it was observed in all patients in the first post-operative day as shown in Table (2) which showed also that most of group A (71%) had severe pain as compared to group B (29%) Over all, there is a statistically important drop in pain severity in group B as compared with group A.

Table 2. Frequency of pain at day 0. *=statistical significant at p<0.05

Groups	Mild	Moderate	Sever	Total
A	2	5	17*	24
B	5	12	7*	24
Total	7	17	24	48

Day 1

The allocation of pain across both groups can be seen in Table (3). In comparison to group A, a numerically substantial reduction in pain was shown in group B.



Table 3. Frequency of pain at day 1 *=statistical significant at p<0.05

Groups	Mild	Moderate	Sever	Total
A	1	9	14*	24
B	7	9	8*	24
Total	8	18	22	48

Day 2

Table (4) shows the distribution of pain at day 7 in both groups. It shows a statistically significant drop in pain in group B as related to group A.

Table 4. Frequency of pain at day 7 *=statistical significant at p<0.05

Groups	Mild	Moderate	Sever	Total
A	12	10	2*	24
B	17	7	0*	24
Total	29	17	2	48

Day 3

There is no statistically significant change on pain severity in both groups in day 14 as shown in table (5).

Table 5. Frequency of pain at day 14

Groups	No pain	Mild	Moderate	Sever	Total
A	1	18	5	0	24
B	5	15	4	0	24
Total	6	31	9	0	48

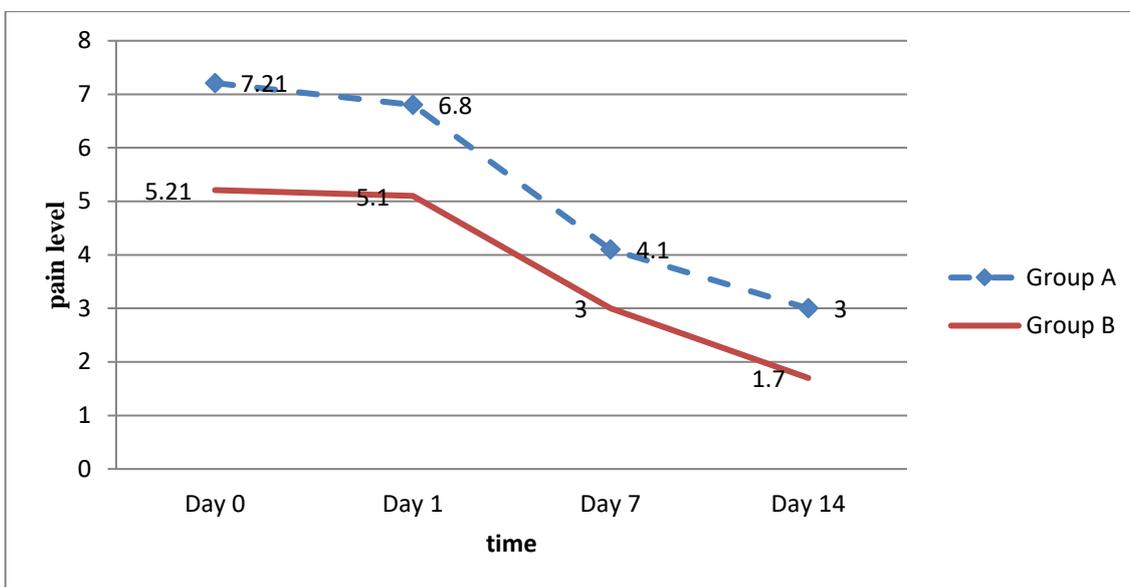


Figure 3. Shows the other average pain score in both groups during the times of follow up.

We observed that pain level decreasing with time throughout the study for both groups but it more with group B.

Table 6. Post-operative complications

Complications	day 0		day1		day 7		day 14	
	A	B	A	B	A	B	A	B
Bloody oozing	4(16.7%)	6(25%)	0(0%)	3(12.5%)	0(0%)	0(0%)	0(0%)	0(0%)
Soiling	0(0%)	2(8.3%)	2(8.3%)	3(12.5%)	0(0%)	6(25%)	0(0%)	3(12.5%)
Urine retention	1(4.2%)	0(0%)	1(4.2%)	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Need for dilatation					6(25%)	2(8.3%)	2(8.3%)	0(0%)

Bloody Ooze

At the follow-up time frame, ten patients in each products that appear minor bloody ooze. There

were six in group B and four in group A. While it decided to continue in 3 patients in group B, none of the patients in group A in the next day have still bloody ooze. Bloody ooze is now significantly more prevalent in group B as compared to group A. no one required a blood transfusion (Holzheimer RG, 2004).

Fecal Soiling

In As the clock ticked over from zero to one, no patients of Group A developed faecal soiling. Conversely, two patients in Group B did. At the beginning of the study, two patients in group A experienced faecal soiling, while for group B there were three additional patients. while 6 patients developed soiling at group B, only one patient from Group A was found to have soiling. Three patients in group B developed soiling at day 14, but no



patient in group A did (Di BF et al, 1990). The discovery shows that in group B, the occurrence of small faecal soiling has increased significantly in comparison to group A.

Urine Retention

Urine retention appeared in a 65 years old male in group A in the first 24 hours. Catheterization done and stay for seven days, no other patients developed urine retention. There is no statistical significant differences between the two groups (Galizia G et al, 2000).

Anal Stenosis

Per rectal digital anal examination was routinely started in the seventh post-operative day to all patients entered the study in order to assess anal tone and the need for further dilatation. Anal dilatation is needed in six patients in group A and in 2 patients in group B at day 7. In the next visit at day 14 only two patients needed further dilatation in group A while no patient needed dilatation in group B. such differences show a statistically significant drop in the need for anal dilatation to group B as compared to group A (Suchdev S et al, 2014).

Discussion

We found a preponderance of female participants in our study. This result contradicts the majority of global data, which shows that 60% of males and 40% of females were observed 2,3,7,9,10. Regardless of whether the disease was equally prevalent among both genders, our findings showed that women came in earlier for surgery and presented earlier on the day of their surgery.

According to the previous data, the age demographics of both genders is similar.

The rate of complications, and the level of pain they cause, is comparable to that found in other research studies. 4,9. The most intense pain generally occurs with the first movement of stool.

Because pain after surgery is a common problem, performing anal dilatation (internal sphincterotomy) and improved surgical wound healing is an important aspect of post-operative care. Although based on careful but firm dilatation, dilatation was first described by Lord in 1989. Possible damage to internal sphincter muscle fibres may be a side effect of this technique. According to Notaras, other treatments should include a lateral internal sphincterotomy in the year 1981,2,6.

Internal sphincterotomy removed pain by reducing sphincter tonicity, according to Di Bella and Estienne in 1990. However, there is no documented evidence that internal sphincterotomy has any effect on the frequency of post-surgical pain 6,1.

According to this research, internal sphincterotomy and hemorrhoidectomy were compared with hemorrhoidectomy alone.

Although everyone in both the treatment and control groups was constantly whining of ongoing anal pain on day 0, 1, and 7 post-surgery, group A reported more intense pain. This was found to have a statistically substantial and also very clear in our research: a combined effect of internal sphincterotomy and hemorrhoidectomy is better than hemorrhoidectomy alone at relieving post-operative pain. These

The major culprit of post-hemorrhoidectomy pain is the relieving effect of sphincterotomy to the internal sphincter spasm. Many scientists have claimed in the past that reducing the amount of pain experienced by haemorrhoids after surgery and accompanying infections can be accomplished by combining hemorrhoidectomy with sphincterotomy. Finally, the authors pointed out that routine internal sphincterotomy performed during hemorrhoidectomy decreases the pain of haemorrhoids as well as other complications that may occur.

In contrast, Khubchandani and other authors claim that internal sphincterotomy has no impact on the concentration of postoperative pain. initiation of an anal fissure in the vicinity of one of the excised haemorrhoids could be the reason.

After few days post-operatively, we found that post-haemorrhoidectomy anal pain decreased significantly in both groups reaching to an insignificant differences at day 14, a finding that is consistent with others (Alberto A et al, 2011; Suchdev S et al, 2014; Setaren S et al, 2009).

Contributing factors must not be ignored as postoperative pain management options, like raising the foot end, infiltration of Xylocaine-adrenaline (1:100,000), avoiding the use of trying to pack the anal canal after surgery, and the implementation of a lotion containing lidocaine 3 percent, hydrocortisone 0.25 percent, zinc oxide 5 percent, and allantoin 0.5 percent (Di BF et al, 1990).

It is very hard to assess the internal sphincterotomy's individual role in pain relief without taking into consideration the rest of the procedure. Though this research demonstrates that



pain relief could have been greatly affected by these other variables, it does not mean that these other factors were the only factors contributing. This study was contextual as pain cannot be evaluated with quantifiable parameters and only clinical judgement and questionnaires were used.

Between the two groups, there are dramatic differences in the incidences and types of post-hemorrhoidectomy pain.

In groups A and B, anal stenosis that mandates digital anal enlargement is much less common. In general, a technical failure will occur during the performance of the operation (Das DK et al, 2013).

Another post-operative complication discovered in our study included bloody oozing, faecal soiling, and urinary frequency.

Faecal soiling was significantly lower in our study than in studies by Graviè et al. Once after 14 days had passed, the follow-up took place (6 percent vs. 8.8 percent). Despite this, it was numerically more prevalent in Group B than Group A. This can be attributed to the temporary detrimental impact of sphincterotomy on the sphincter, which was found to drop by 50% of our patients since two weeks.

The anal sphincters were temporarily damaged, according to some authors. such dreaded complications led them to suggest a surgical procedure to cut away the sphincter. Due to the lack of accessibility of the device in our hospital, anal manometry was not included in this investigation (Galizia G et al, 2000; Holzheimer RG, 2004; Di BF et al, 1990).

Conclusion

Tending to reduce post hemorrhoidectomy pain after the procedure in the initial cycle, the use of a lateral internal sphincterotomy may decrease stenosis hence the need for postoperative anal dilatation, but it can lead to faecal soiling and mild bloody ooze. In general, we advise to avoid it unless a fissure or comparable anal stenosis is present.

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