

Comparison of outcomes, with and without lateral internal Sphincterotomy, in patients undergoing open Haemorrhoidectomy

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ABSTRACT

Background: Piles are considered to be a frequently occurring problem in local population. Haemorrhoidectomy is the procedure of choice which is performed to rectify the problem. Usually 3 rough areas are created in the anal area by this surgical modality. The significance of doing associated lateral internal sphincterotomy for pain control in patients who underwent haemorrhoidectomy remains controversial in the literature.

Aim: To conduct this study and compare the outcome with or without lateral internal sphincterotomy.

Methodology: So this randomized controlled trial was performed for 1 year. Sample size of 60 patients was enlisted through Non Probability, Convenient Sampling. Patients were divided in two equal groups. In group A, open haemorrhoidectomy was performed with LIS, whereas in group B, open haemorrhoidectomy was performed without LIS. After surgery, patients were followed-up for 48 hours and 2 weeks to assess post-operative pain, bleeding and incontinence.

Results: The mean age of all cases was 45.57±7.92 years and there were 40 (66.7%) male and 20 (33.3%) females. At 48 hours of surgery, 10(33.37%) cases with LIS and 26(86.67%) cases without LIS had pain with significantly lower pain with LIS (p-value < 0.001), bleeding was present in 2(6.7%) cases with LIS vs. 3(10%) cases without LIS (p-value>0.05) and incontinence was noted in 2(6.7%) patients with LIS vs. 1 (3.3%) without LIS (p-value>0.05). At 2 weeks after surgery, pain was observed in 0 (0%) case with LIS and 6(20%) cases without LIS (p-value=0.010), bleeding in 2(6.7%) cases with LIS and 1 (3.3) patient without LIS (p-value >0.05) and incontinence in 1(3.3%) patients with LIS and 0 (0%) patients without LIS (p-value >0.05).

Conclusion: Through the findings of this we found that better outcome after open haemorrhoidectomy with lateral Internal Sphincterotomy in terms of less pain, but bleeding rate and incontinence was similar in both groups.

Keywords: Piles, Piles, Haemorrhoidectomy, Lateral Internal Sphincterotomy, Postoperative Pain, bleeding,

INTRODUCTION

Anorectal problems are very common and are due to a variety of mostly benign anorectal diseases. Such conditions can be successfully managed by primary care physicians in the OPD setting, but mostly such patients are hesitant in seeking medical attention due to embarrassment or fear of cancer. As a consequence, presentation of the patients is with advanced disease after experiencing much decrease in quality of life¹. 30%–40% prevalence rate has been reported in other studies in the US^{2,3}. The existence of piles in 38.9%, with 44.7% of those patients suffering from piles manifestation have been seen in a recent prospective study by screening colonoscopy⁴.

In 2004, the National Institutes of Health noted that the detection of piles was associated with 3.2 million important care visits, 306,000 admissions in hospitals and 2 million outpatient prescriptions in the US⁵. Although it has been told that 50% of the population will suffer from disturbing piles at somewhere in their lives, the peak incidence is between the ages of 45–65 years⁶. Occurrence of piles is unusual before 20 years of age and in whites higher risk than in blacks^{3,6}. Increasing fibre intake, oral fluids to maintain hydration, pain killers to help with pain and rest are the initial measures for the management of mild to moderate disease. There are number of options in procedures that can be performed if

patient does not get relieve by conservative management. Haemorrhoidectomy is one of those but is reserved for those who do not improve with above mentioned measures or if 3rd or 4th degree piles occur. About half of people may experience problems with piles at some moment in their livings. Outcome is usually good⁷.

Haemorrhoidectomy is considered an effective treatment of late 2nd degree that is non-responsive to non-surgical methods or third-degree and fourth degree hemorrhoids⁸. Open haemorrhoidectomy is a main, optimal and effective method of choice for piles of late second, third and fourth degree. The fear of pain after operation is an important concern to deal due to which patients do not prepare for surgery⁹. Three rough areas are created in the anal region by this surgical procedure. Doing the additional procedure helping in treating these rough regions surely helps to reduce pain and unease after the procedure. Increased anal tone that is caused by spasm of anal sphincter in the sensitive anal area is considered to be a main factor in producing pain in the postoperative period⁹. The importance of doing sphincterotomy along with haemorrhoidectomy for better pain control still remains controversial in the literature. Haemorrhoidectomy with associated LIS did not reduce pain, and increased the risk of incontinence postoperatively¹⁰.

The rationale of the study is to compare the result of open haemorrhoidectomy with and without lateral Internal Sphincterotomy (LIS). Many studies has been conducted which confirmed that LIS has less morbidity in terms of less postoperative pain as compared to conventional haemorrhoidectomy but contradiction has also been observed in literature. So, through this study we want to

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prove that haemorrhoidectomy with LIS is a safe and useful method than conventional method.

The objective of the study was to compare the outcome after open haemorrhoidectomy with and without lateral Internal Sphincterotomy.

METHOD AND MATERIALS

Study design: This randomized Controlled Trial was conducted in the Department of Surgery, Central Park Teaching Hospital affiliated Central Park Medical College Lahore during a period of 1 year (January 2017 to December 2017). Of 60 cases; 30 cases in either group, is calculated with 5% level of significance, 90% power of test and taking expected percentage of post-operative pain that is 29.6% in open haemorrhoidectomy with LIS and 70.4% in open haemorrhoidectomy without LIS. Non Probability, Convenient Sampling technique was used.

Inclusion criteria:

- Patients of age 30-60 years of either sex.
- Patients having clinical diagnosis of 3rd and 4th degree hemorrhoids.
- Patients with MRP of anal canal >60mmHg.

Exclusion criteria:

- Renal disease (creatinine > 1.2mg/dl), bleeding disorders (INR > 2)
- Patients with any concomitant perianal pathology such as perianal fissure, perianal fistula, rectal prolapse

Data Collection Procedure: 60 patients fulfilled the selection criteria were included from surgical ward after getting approval from hospital ethical committee. Patient's demographic data (name, age, gender and duration of hemorrhoids) was noted after obtaining informed consent. Patients were divided in two similar groups randomly by using N number table. All the patients were subjected to elective open haemorrhoidectomy under spinal anesthesia (S/A) and aseptic measures were taken by a single surgical team. Open haemorrhoidectomy was performed with LIS in group A, whereas in group B, open haemorrhoidectomy was performed without LIS. Diathermy, knife and scissors were used to carry out dissection and definitive hemostasis was secured in the dissection area in all the patients. After completion of classical open haemorrhoidectomy in patients in group A, patients were directed to LIS through the left sided open haemorrhoidectomy wound up to about one cm. (Dentate line) upwards. At the end of surgery, the wound was covered with a T-bandage after placing a small piece of gauze soaked in lignocaine jelly to pack the anal canal lightly in all the patients and on 2nd post-operative day, gauze piece was removed and bleeding was noted. All patients were given inj ceftriaxone 1g and flagyl 500mg intravenously 3 doses; 1st dose was given at the time of induction of anesthesia. Then patients were followed-up for 48 hours and then after 2 weeks and was asked for level of post-operative pain. If pain was >3 then post-operative pain was labeled. Then patients were assessed for bleeding and asked for fecal incontinence (complaint of patient about unintentional loss of feces). On a patient's proforma, data for each patient was recorded.

Data Analysis: SPSS version 21.0 was used to analyze the data. Quantitative variable like duration of hemorrhoids,

age and duration of surgery were expressed as mean ± standard deviation. Qualitative variables like post-operative pain and gender were expressed as percentages and frequency. For the comparison of the post-operative pain, bleeding and incontinence in both groups, Chi-square test was used. P-value ≤ 0.05 was considered as significant.

RESULTS

The mean age of cases in with LIS group was 44.00 ± 8.15 years and mean age of cases in without LIS group was 47.13 ± 7.49 years. There were 40 male (22 with LIS and 18 without LIS) and 20 females (8 with LIS and 12 without LIS). The male to female ratio was 2:1. According to degree of hemorrhoids there 30 cases with 3rd and 30 with 4th degree of hemorrhoids. With LIS there were 14 (46.7%) who had 3rd and 16 (53.3%) had 4th degree of hemorrhoids while without LIS there were 16 (53.3%) cases who had 3rd and 14 (46.7%) had 4th degree of hemorrhoids. Table 1

At 48 hours of surgery, 10 (33.37%) cases with LIS and 26 (86.67%) cases without LIS had pain with significantly lower pain with LIS (p-value < 0.001), bleeding was present in 2 (6.7%) cases with LIS vs. 3 (10%) cases without LIS (p-value > 0.05) and incontinence was noted in 2 (6.7%) patients with LIS vs. 1 (3.3%) without LIS (p-value > 0.05). At 2 weeks after surgery, pain was observed in 0 (0%) case with LIS and 6 (20%) cases without LIS (p-value = 0.010), bleeding in 2 (6.7%) cases with LIS and 1 (3.3%) patient without LIS (p-value > 0.05) and incontinence in 1 (3.3%) patients with LIS and 0 (0%) patients without LIS (p-value > 0.05). Table 2

Table-1: Demographic details of patients

	With LIS	Without LIS
Age (years)	44.00 ± 8.15	47.13 ± 7.49
Gender (M:F)	22 / 8	18 / 12
3 rd Degree of hemorrhoids	14	16
4 th Degree of hemorrhoids	16	14

Table-2: Comparison of outcome in both groups on follow-up

Outcome	Study group		P value
	With LIS	Without LIS	
Follow up after 48 hours			
Pain	10 (33.37%)	26 (86.67%)	<0.001
Bleeding	2 (6.7%)	3 (10%)	0.640
Incontinence	2 (6.7%)	1 (3.3%)	0.554
Follow up after 2 weeks			
Pain	0 (0.0%)	6 (20%)	0.010
Bleeding	2 (6.7%)	1 (3.3%)	0.554
Incontinence	1 (3.3%)	0 (0.0%)	0.313

DISCUSSION

Hemorrhoids are one of the commonest presentations of the anal disorders¹¹. Accurate data showing prevalence of hemorrhoids are absent. In an international study, 38.73% suffered from hemorrhoids. In 72.89% patients, grade I piles were found, 18.42% patients has grade II, 8.16% patients has grade III, and 0.53% has grade IV hemorrhoids. About 44.64% patients complained about problems associated with hemorrhoids, whereas 55.26% patients were asymptomatic⁴.

Out of all the management options including injection sclerotherapy, infrared photocoagulation, RBL, open

hemorrhoidectomy is the gold standard operation against which the outcomes of the other treatment strategies are compared. Like any other operation open hemorrhoidectomy needs counseling to the patient regarding postoperative pain and other possible postoperative issues. The magnitude of postoperative pain is thought to be the major issue due to which people run away from surgery. Therefore it is not strange that surgeons are adopting new methods with the common purpose of decreasing postoperative pain¹².

The actual ubiquity of symptomatic piles is hard to estimate, because most of the patients do not pursue attention for their disease or depend on domestic treatment, whereas others assign their anorectal issues as being a result of piles. The epidemiology of piles has been studied through many different methods, each of which has methodological restrictions as noted in a recent American Gastroenterological Association review. Surveys that are dependent on patient or diagnosis offered by physician or hospital discharge data are nonspecific and not confirmed. Thus, there can be variations in epidemiologic data. Occurrence of symptomatic piles in the United States ranges from 10 million people, a 4.4% prevalence rate, to a National Centre for Health Statistics report of up to 23 million people or 12.8% of U.S. adults^{13,14}.

The open hemorrhoidectomy technique has been compared with closed method but no considerable difference in outcomes has been found. In the postoperative period increased anal tone in the area of sensitive anal skin is considered to be a major pain producing factor^{15,16}. Review of literature showed that various methods to reduce post hemorrhoidectomy pain have been tried like MDA (manual dilatation of anus), using GTN cream etc. But with the passage of time, it has been found that lateral internal sphincterotomy was a good addition to the open hemorrhoidectomy for pain control postoperatively and less complications¹⁷. Lateral internal Sphincterotomy reduces hypertonicity of the internal sphincter so reducing post-surgery pain and other related post hemorrhoidectomy complications as well^{17,18}.

In this study the mean age of all cases was 45.57±7.92 years whereas mean age of cases with LIS was 44.00±8.15 years and mean age without LIS was 47.13±7.49 years. In a study, patients were of the mean age of 37.8 years in without sphincterotomy group, and 38.1 in with sphincterotomy group¹⁹. In our study, the mean age is higher than that of the compared study. The reason may be that they included younger patients in their study. In this study there were 40 male 22(73.3%) with LIS and 18(60%) without LIS) and 20 females 8(27%) with LIS and 12(40.0%) without LIS). our study is comparable to Harish et al study in which the number of females in the study group were 22 in without sphincterotomy group and 21 in with sphincterotomy group, i.e., 44% and 42%, respectively and number of males in the study group were 28 in without sphincterotomy group and 29 in with sphincterotomy group, i.e. 56% and 58%, respectively¹⁹ showing the preponderance of males.

In this study at 48 hours of surgery, 10(33.37%) cases with LIS (Open hemorrhoidectomy with LIS) and 26(86.67%) cases without LIS (Open hemorrhoidectomy without LIS) had pain with significantly lower pain with LIS,

p-value < 0.001. In a study, it has been reported that there were 84% patients who had postoperative pain after haemorrhoidectomy without LIS however, only 12% cases showed postoperative pain after haemorrhoidectomy with LIS. The difference was observed to be highly significant (P<0.01).²⁰ Another study also supported the evidence and reported that there were 70.4% patients who had postoperative pain after haemorrhoidectomy without LIS however, only 29.6% cases showed postoperative pain after haemorrhoidectomy with LIS. The difference was observed to be highly significant (P=0.000).²¹ The findings are in agreement to our series regarding less pain with LIS group. In 2014, another study is performed to see the role of internal sphincterotomy in addition to routine open haemorrhoidectomy to reduce postoperative pain. The result of the study showed that most of patients complained about only mild pain or pain that is well tolerable in the postoperative course. The rate of complication was also minimal. Therefore, this study suggested that the addition of internal sphincterotomy along with open haemorrhoidectomy was well appreciated by patients and it decreased the discomfort level of the patients successfully⁹. Raza et al conducted a study on 108 patients in which 54 in open haemorrhoidectomy (group A) and 54 in haemorrhoidectomy with lateral internal sphincterotomy (group B) were treated. Patients who were completely pain free were 15 in group A and 38 in group B (p value=0.000). So, the result of the study has concluded that lateral internal sphincterotomy, combined with haemorrhoidectomy, is associated with less pain postoperatively²¹.

Similarly Das et al conducted a prospective randomized study to evaluate the outcome of open haemorrhoidectomy that had been combined with internal Sphincterotomy in reduction of postoperative pain. So two groups were made. In group I (control group) classical open haemorrhoidectomy while in group II (study group) open haemorrhoidectomy with internal sphincterotomy was done. The study result has showed that mean post-operative pain score in study group (Gr- II) was 1.60 and in control group (Gr- I) it was 2.32 (P< 0.01)²⁰. Furthermore in 2005, a similar study with the same objective has been done. From 1998 to 2003, 78 patients with 4th degree hemorrhoids were included in the prospective randomized trial. The number of patients who suffered severe pain in the non-internal sphincterotomy group than in the internal sphincterotomy group (25 vs. 18) were more; these differences were statistically significant (p = 0.034)²².

We found that at 2 weeks after surgery, none of the case with LIS and 6(20%) cases without LIS had pain with significantly lower pain with LIS, p-value < 0.001 but a study has reported that LIS reduces pain only in the initial postoperative period, but not in the medium-long term follow up; does not have any effect on the occurrence of the other postoperative complications²³.

In a randomized trial, pain was present in 11.6% with LIS and 15% without LIS in patients underwent haemorrhoidectomy. The mean pain score was statistically same in both groups (p=0.18)²⁴. This is not consistent with our findings. In our study at 48 hours, 2(6.7%) cases with LIS and 3(10%) cases without LIS had bleeding with no significant difference, p-value > 0.05. In a study the rectal

bleeding was found to be 55% with LIS while 56.6% without LIS.²⁴. The frequency of bleeding in our study is quite lower than this study. In a study the frequency of rectal bleeding was 1(2.0%) and 6(12%) in patients who were treated with and without sphincterotomy respectively. On Post-Operative Day-2, rectal bleeding (P = 0.05) was significantly more in without sphincterotomy group when compared to with sphincterotomy group¹⁹. The results of this study are not consistent with our findings as we didn't find any difference between both groups.

At 48 hours of surgery 2(6.7%) patients with LIS and 1 (3.3%) without LIS had incontinence with no significant difference, p-value > 0.05. In a study faecal incontinence was seen in 8.3% with LIS while 1.6% without LIS. This is similar to our study as less number of patients without LIS developed incontinence²⁴ similarly another study showed that faecal incontinence was nil whether LIS done or not.²⁰. Kanellos et al didn't find any significant difference in the Wexner Incontinence Scale between the groups (p = 0.228)²². In a study no patient who had LIS developed incontinence of faeces.²⁵ Amorotti et al. reported that None of the patients treated by surgical sphincterotomy developed incontinence²⁶. All the above cited studies are in agreement with our findings.

CONCLUSION

Through the findings of this we found that better outcome after open haemorrhoidectomy with lateral Internal Sphincterotomy in terms of less pain, but bleeding rate and incontinence was similar in both groups. So, Lateral internal Sphincterotomy, combined with haemorrhoidectomy, can be adopted to reduce pain to achieve maximum patient's easiness and satisfaction.

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