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Original Research Article

SELF MECHANICAL ANAL DILATATION, A PREVENTIVE MEASURE TO RELIEVE PAIN AFTER HEMORRHOIDECTOMY_ - A CROSS SECTIONAL STUDY IN A TERTIARY CARE

Abinasha Mohapatra[1], Sudarsan Sethy[2], Bhupesh Kumar Nayak[3], Himansu Shekhar Mishra[4], J Rajesh Kumar[5]

[1]Associate Professor, Department of General Surgery, Fakir Mohan Medical College and Hospital, Balasore, Odisha, India.
[2]Associate Professor, Department of General Surgery, Veer Surendra Sai Institute of Medical Science and Research (VIMSAR), Burla, Sambalpur, Odisha, India.
[3]Assistant Professor, Department of General Surgery, Bhima Bhoi Medical College & Hospital, Balangir, Odisha, India,
[4]Assistant Professor, Department of General Surgery, Shri Jagannath Medical College and Hospital, Puri, Odisha, India.
[5]Junior Resident, Department of General Surgery, Veer Surendra Sai Institute of Medical Science and Research (VIMSAR), Burla, Sambalpur, Odisha, India.

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Corresponding Author:
Dr. Himansu Shekhar Mishra, Junior Resident, Department of General Surgery, Veer Surendra Sai Institute of Medical Science and Research (VIMSAR), Burla, Sambalpur, Odisha, India.
Email: himansumishra83@gmail.com

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ABSTRACT

Background: Hemorrhoid is very common ano rectal disease causing painless bleeding after defecation. Hemorrhoidectomy is still the most effective surgical treatment for hemorrhoidal disease, but it is, however, associated with complications such as pain in post-operative period. **Aim of this study:** is to evaluate to break the "vicious circle" of "pain–sphincteric spasm–pain" with the postoperative use of self-mechanical anal dilation.
Materials and Methods: 30 patients undergoing hemorrhoidectomy as suffering from hemorroids were divided randomly in two groups by odd & even method, one group was assigned as dilator group where self-mechanical 33 mm Anal Dilator for 15 mins was used for a period of 02 weeks and in another group no anal dilator used although both had fibre diet amd laxative with sitz bath in post-operative period. Pain, oedema, discharge, bleeding and incontinence was observed on Ist, 3rd, 7th and 15th day.
Results: 15 Patients who had undergone self-mechanical anal dilator showed less pain compaired to no dilator group (P<0.05). Bleeding, discharge and oedema was significantly low in both group, faecal incontinence was present in dilator group for 7 days but disappeared on 15th day(P=050).
Conclusion: This prospective study confirms that self-mechanical anal dilatation reduce pain after haemorrhoidectomy. No faecal incontinence noticed.
Keywords: Hemorrhoids, Hemorrhoidectomy, Self-Mechanical Anal Dilatation, Pain.

INTRODUCTION

Hemorrhoidectomy is still the most effective surgical treatment for hemorrhoidal disease, but it is, however, associated with complications such as pain in post-operative period. Post-operative pain is one of the main issues of very concern after hemorrhoidectomy and remains a distressing problem, for patients and physicians.[1] This is the reason instead of conventional hemorrhoidectomy patient and surgeon prefer ligaion, cryosurgery, Doppler ablation of feeding vessel in haemorrhoid, stapler or radiofrequency hemorrhoidectomy to treat hemorrhoids A sufficient pain management can lead to higher satisfaction, earlier mobilization, faster recovery, and lower health care cost. Several methods have been described in combination with conventional hemorrhoidectomy to reduce pain. Several studies were using pharmacological approaches and minimal invasive methods to reduce postoperative pain.[2,3] In this study, a simple method was done using self-mechanical anal dilatator to

reduce post-operative pain. Self-Introduction will not cause more pain or any other injury while introducing or removal as self-done by patient. Anal dilatation was first described by Lord. PH to treat hemorrhoids and anal fissures using six fingers. However, anal dilatation alone often results in relapse of symptoms and other complications including fecal incontinence. In this study, we modified the original Lord's anal dilatation procedure using a dilator, followed by hemorrhoidectomy. Furthermore, post-operative pain, discharge, bleeding, edema, and fecal incontinence were observed. After performing hemorrhoidectomy internal anal sphincter smooth muscle activity, is often raised. This may contribute to the pain and localised ischaemia of the traumatised anal lining, perpetuating ulceration and preventing healing. Self-Mechanical Anal Dilators break the "vicious circle" of "pain–sphincteric spasm–pain" due to straining in defecation as post-operative oedema causes significant spasm of anal sphincters.[4,5]

MATERIAL AND METHODS

In this study 30 Patients undergoing hemorrhoidectomy of age group 28-55, between years 2021 to 2023 at Department of General Surgery, Shri Jagannath Medical College & Hospital, Puri, Odisha were included. It was a randomized prospective trial. Patients are off with a 3rd to 4th grade hemorrhoid with 2 to 3 piles were selected. However, patients with preoperative fecal incontinence, history of colorectal cancer, anal fissure, colitis, previous anorectal bleeding, previous hemorrhoidectomy, hemorrhoid with thrombus, and other anorectal surgery were excluded from the study. The patients were divided randomly in two groups by odd & even method, one group was assigned as dilator group where self-mechanical 33 mm Anal Dilator for 15 mins was used for a period of 02 weeks and in another group no anal dilator used although both had fibre diet and laxative with sitz bath in post-operative period. Pain, oedema, discharge, bleeding and incontinence was observed on Ist, 3rd,7th and 15th day. Anal Dilator was lubricated with water based sterile gel by patient before self-insertion into anal canal. A Post-operative anal pain was evaluated using the Visual Analog Scale (VAS), categorized as mild pain (VAS 1–4), moderate pain (VAS 5–6), and severe pain (VAS 7–10. We used single blind examination by examining the pain scale without knowing any dilatation. In addition, both groups received the antibiotic as amoxyclav and analgesic as mefenamic acid 500mg thrice daily for 03 days orally.

RESULTS

30 patients of hemorrhoidectomy showed no significant diff erence in age, sex, and body mass index (BMI) between dilatation and no dilatation groups. (Table-1). Post-operative pain was significantly lower in post-operative anal dilatation group with p-values of all days of observation < 0.05. In the bivariate analysis, differences between the anal dilatation and nonanal dilatation groups in the first, third, seventh, fifteenth days after surgery presented in (Table2). The variables were analyzed using chi-square tests. There was only two post-operative bleeding observed in this study, which was found in the group without post-operative anal dilatation (pvalue > 0.05). post-operative edema was lower in the post-operative anal dilatation group of all days of observation, which were statistically insignificant with p-value > 0.05. In addition, fecal incontinence was higher in the preoperative anal dilatation group with p values 0.011 and 0.004 for the first and second day, respectively. However, the result of the seventh day and fifteenth day showed insignificant result with pvalue 0.500. In addition, the severity of fecal incontinence found in this study was only minor with flatus and liquid stool incontinence. Multivariate analysis showed that on the first day of observation, preoperative anal dilatation contributed 46.9% for the reduction of anal pain with p-value < 0.001 (Table-3). On the third, seventh day of observation, post-operative anal dilatation contributed 37.2% for the reduction of anal pain and the occurrence of fecal incontinence with p-values 0.005 and 0.018, respectively. In addition, on the last day of observation, post-operative anal dilatation contributed 70% for the reduction of anal pain.

Statistical Analysis

Table 1: Age & Sex Wise Cases

Variables	Number (%)	Mean +/- SD	Median (Min-Max)
Sex	Male – 24 (80%)		
	Female – 06 (20%)		
Age - 20-35 yrs	18 (60%)	35 +/- 1.25	35(25-57)
36-50 yrs	09(30%)		
51-60 yrs	03(10%)		

Table 2: Bivariate Analysis of Anal Dilatation versus no Anal Dilatation

Day of Exam	Variables	Dilatation	No Dilatation	p-Value
Day 1st	Oedema	10(Yes)	12	0.525
		05 (No)	03	
	Pain	04(No)	09	< 0.001
		06(Mild)	04	

		09(Moderate)	02	
		00(Severe)	00	
	Bleeding	05(Yes)	03	0.500
		10(No)	12	
	Incontinence	10(Yes)	10	0.011
		05(No)	05	
Day 3rd	Oedema	04(Yes)	08	0.500
		11(No)	07	
	Pain	06(No)	04	0.004
		06(Mild)	08	
		03(Moderate)	03	
		00(Severe)	00	
	Bleeding	02(Yes)	03	0.500
		13(No)	12	
	Incontinence	09(Yes)	03	0.004
		06(No)	12	
Day 7th	Oedema	02(Yes)	05	0.500
		13(No)	09	
	Pain	02(No)	06	0.031
		09(Mild)	06	
		01(Moderate)	02	
		00(Severe)	01	
	Bleeding	01(Yes)	02	0.500
		14(No)	13	
	Incontinence	04(Yes)	00	0.500
		11(No)	00	
Day 15th	Oedema	00(Yes)	00	0.500
		15(No)	15	
	Pain	15(No)	15	0.021
		00(Mild)	00	
		00(Moderate)	00	
		00(Severe)	00	
	Bleeding	00(Yes)	00	0.500
		15(No)	15	
	Incontinence	00(Yes)	00	0.500
		15(No)	15	

Table 3: Multivariate analysis using Logistic Regression among Independent Variable

Day of Exam	Variables	R Square	p - Value
Day 1st	Bleeding	0.469	0.143
	Pain		<0.001
	Oedema		0.265
	Incontinence		0.209
Day 3rd	Bleeding	0.372	0.642
	Pain		0.005
	Oedema		0.646
	Incontinence		0.018
Day 7th	Bleeding	0.180	0.748
	Pain		0.030
	Oedema		0.572
	Incontinence		0.431
Day 15th	Bleeding	0.050	0.847
	Pain		0.040
	Oedema		0.257
	Incontinence		0.010

DISCUSSION

The majority of hemorrhoid cases, especially for the third degree and above, were surgically treated by hemorrhoidectomy only as recurrence and bleeding and stenosis is less with conventional hemorrhoidectomy than stapler or radiofrequency hemorrhoidectomy or that by simple ligation or cryosurgery of haemorrhoids.[6] The pain after surgery is still the main problem for the patients.[7] Extensive anoderm excision might cause anal spasm, which subsequently cause pain.[8] There were several published methods for reducing pain after hemorrhoidectomy. Previous study used favonoids and metronidazole, which resulted in a reduction of pain after excisional hemorrhoidectomy Opioid analgesics were also used to reduce pain after hemorrhoidectomy.[9] In this study, we used a simple non-pharmacological method self-mechanical anal dilatation to reduce pain after hemorrhoidectomy, which showed a significant result. The reduction of post-operative pain might be due to reduced anal sphincter contraction. Relaxed anal sphincter reduced the risk of anal spasm and subsequently reduced postoperative pain. The dilatation was commonly performed self-using dilators of 33 mm for 15 mins. The use of anal dilator for reducing

anal spasm and pain after hemorrhoidectomy had been proposed to be performed post-operatively .Such self-mechanical anal dilatation calms patients, removes fear from mind as patient self-introduce it, so can stop whenever patients feels pain.So by reducing pain it eases defecation and by persistent dilatation it also prevents anal stenosis too which is e measure complication of all type of haemorrhoidectomy, so this self-mechanical anal dilatation is helpful for all patients undergoing hemorrhoidectomy whether conventional, stapler or by radiofrequency sphincterotomy.[10] In a recent trial flavonoid associated with metronidazole seems to reduce pain, and bleeding, after excisional hemorrhoidectomy.[11]

After hemorrhoidectomy, another fearsome complication is anal stenosis. It occurs in ~4% of patients, but this percentage rises,[12,13] when a radical hemorrhoidectomy is performed, with three/four piles removed. With the use of radiofrequency tools or harmonic scalpels, the easiness of surgical procedure can paradoxically produce a wide excision of anoderm and rectal mucosa, without adequate "bridges".[14,15] This can hesitate in anal stenosis; the average time of onset is ~4 weeks. When a conservative approach (stool softeners, diet, analgesic therapy, and dilation) failed, the treatment of anal stenosis can be difficult: a second surgical operation with scar excision, sphincterotomy, y-v anoplasty, or, in some cases, flaps,[15,16] can be performed. Despite the good results and minor complications of these procedures, a second hospital admission is needed, with an extension of healing time and of lost working days. Furthermore, there is an evident lack of consensus about what surgical treatment can be most useful and the success rate depends on diff erent coloproctology units, surgical experience, number of cases treated. According to this study, the use of selfmechanical anal dilation, in an early period after hemorrhoidectomy, is a good clinical practice, especially when a large amount of tissue is removed during the operation. In Group A, we observed the PO pain decreased very quickly with the use of dilator, in the 14 days of application, with a constant improvement and the full recovery of patients. The daily dilation seems to increase soft healing, reduces the spasm and the pain, and allows good healing without retracting scars and anal stenosis. The possibility for patients to perform the procedure by themselves reduces the number of visits of the outpatients. The price of the three dilators is <e40, with an economic return given by the decrease in the use of analgesic therapy and stool softeners. According to the statistical analysis, the most significant results of self-dilation use are the reduction of pain, improvement of defecation quality, in Group A, especially in the early period, and the absence of late clinical stenosis. These three factors are strictly linked with the quality of life after the surgical operation. Patients accepted this solution sometimes with initial doubts and hesitations, overcome by immediate, evident relief of pain right after the first days of use. Post-hemorrhoidectomy use of anal dilators is a simple procedure that can result in immediate benefit for the patient; further studies are necessary to confirm these initial, promising results.

The limit of this study is that is retrospective and the number of patients is small, but there will be a wide application in the proctologic unit and the possibility to design new prospective studies in the future. Self-mechanical anal dilation can guarantee a better late operative course, minimizing the risk of consolidated anal stenosis. The most significant data, despite the small number of patients included in this program, are the breakdown of PO pain wit. The only significant side eff ect found in this study was fecal incontinence. The stretched anal sphincter is weakened in function and subsequently caused fecal incontinence. However, the incontinence found in this study was only minor with flatus and liquid stool incontinence and was proved to be temporary. The majority of cases resolved within 15 days after surgery. It might be due to the use of a standardized dilator, which is capable of preventing either over stretch or injured anal sphincter. Previous study proposed the use of internal sphincterotomy for reducing anal spasm after hemorrhoidectomy and subsequently reduced post-operative pain. However, this method was reported to cause both urinary retention and fecal incontinence. In contrast, our method had less complication of temporary fecal incontinence. Anal dilatation was also reported to reduced pain in other anorectal surgeries. The study about anal dilatation in perianal fissure also showed significant reduction in pain and fecal incontinence as its temporary short-term complication. The side eff ect of fecal incontinence can be reduced by smoking cessation, low sodium diet, caff eine restriction, and high fiber diet. Therefore, with careful education about its temporary side eff ect, this method can be an eff ective option for reducing pain after hemorrhoidectomy.

CONCLUSION

This prospective study confirms that self-mechanical anal dilatation reduce pain after haemorrhoidectomy. No faecal incontinence seen, beside this bleeding, oedema is also less and also effective to control stenosis. So every patient of any type of hemorrhoidectomy should be advised to do self-mechanical anal dilatation.

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