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Comparison between Lateral Internal Sphincterotomy And Lord's Operation for Chronic Anal Fissure

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ABSTRACT

Introduction: Anal fissure is an elongated ulcer in lower anal canal which presents with severe perianal pain during and after defecation with red streaks of blood. Chronic anal fissure is a fissure for more than six weeks with a skin tag (sentinel tag). Surgical options include Lord's dilatation of anus, lateral internal sphincterotomy (LIS) and posterior anal flap.

Aims & Objectives: To compare LIS and Lord's operation in cases of chronic anal fissure in terms of occurrence of incontinence.

Place and duration of study: Department of General Surgery, Ayub Teaching Hospital Abbottabad from September 2018 to March 2019.

Material & Methods: This quasi-experimental study was carried on 92 patients with anal fissure. By convenience (non-probability) sampling patients were divided into two equal groups of 46 patients as group A for LIS and group B for Lord's dilatation. Data was collected on a structured proforma and analyzed using SPSS 20.

Results: Flatus incontinence was observed in 1 (1.1%) fecal incontinence was in 11 (12.0%). Flatus incontinence occurred in 1 (1.1%) patient of group A while no flatus incontinence was reported in patients of group B. Fecal incontinence is observed in 10 (10.9%) patients with group A while 1(1.1%) of patients in group B had fecal incontinence. The result was significant with chi square value 9.614 and p value 0.008.

Conclusion: Lord's dilatation is a better procedure than Lateral internal sphincterotomy in terms of fecal incontinence.

Keywords: Anal fissure, Lateral internal sphincterotomy (LIS), Lord's dilatation, fecal incontinence

INTRODUCTION

Anal Fissure is an elongated ulcer in the long axis of distal anal canal. It presents in 3rd & 4th decade of life in most of the cases. It is a very troublesome condition associated with spasm of internal anal sphincter.[1] it is common in both sexes and can be found in infants and elderly people. 90% of fissures are present in posterior midline and 10 % fissures are present in anterior midline. Women of childbearing age have increased chances of getting anterior anal fissure specially soon after pregnancy or normal vaginal delivery which is a result of damage and weakening of pelvic floor muscles. A proportion of patients with chronic anal fissure have concomitant pelvic floor dyssynergia.[2] It is, probably result of damage and weakening of pelvic floor muscles and attenuation of perineal body.

Chances of developing anal fissure are increased in the presence of constipation because of its pressure effects on anal mucosa and may lead to tear of anal valve of Ball. Another important cause of anal fissure is incorrectly performed haemorrhoidectomy resulting in anal stenosis which gives rise to tear of anal mucosa on subsequent defecation.

Sexually transmitted diseases, tuberculosis, Crohn's disease and anal/rectal malignancy[3] are other causes of anal fissure. In these cases, fissures are usually multiple and other symptoms and signs of primary disease may be present.

Acute fissure usually presents as severe perianal pain during and after defecation which lasts for one to two hours and suddenly ceases. There are periods of remission for days or weeks until patient passes another motion.

Bleeding is usually in the form of minimal streak of red blood on stool or toilet paper. In chronic cases pruritis ani and mucous discharge may be the presenting features.

Constipation may be the presenting feature in most of the patients as severe pain during defecation

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causes fear in patient's mind and he prefers to be constipated rather than going through agony of passing stools.

Passage of hard stool further injures the already compromised and damaged anal mucosa.

In acute cases fissure is seen as tear in anal mucosa, and it causes severe pain on digital rectal examination so it is not performed in outpatient department. Edema and inflammation are minimal in acute anal fissure and spasm of internal anal sphincter is more marked.

In chronic anal fissure, a posterior anal tag can be usually seen overlying the lower margin of fissure. Edema and inflammation is present and edges of ulcer can be palpable. Furthermore scarring and fibrosis can be seen in some cases and internal anal sphincter is visible in few cases.

Treatment options include conservative and surgical management. Conservative management includes bulk laxatives with or without lignocaine cream, analgesics, hydrocortisone creams and chemical sphincterotomy with Glyceryl Trinitrate cream or diltiazem cream.[1]Injection of botulinum toxin into and around anal sphincter causes paralyses of internal sphincter for 2-3 months. During this time the anal fissure recurrence is low and fissure gets healed in many cases. Main side effect is flatus incontinence which improves with time and there is no permanent damage.[4]

Surgical options include Lord's dilatation, lateral internal sphincterotomy (LIS) and posterior anal flap. Both procedures (Lord's dilatation and lateral internal sphincterotomy) are performed under general or spinal anesthesia, but it can be performed as a day case procedure under local anesthesia in outpatient department. Thus, reducing the hospital stay and making them cost effective procedures.[5]

The purpose of study was to compare Lord's dilatation and lateral internal sphincterotomy in terms of causing post-operative incontinence. This will help to set high level of care and treatment for the patients of anal fissure.

MATERIAL AND METHODS

This was a hospital based quasi-experimental study. 92 patients of anal fissure were included in this study admitted in the Department of Surgery Ayub Teaching Hospital Abbottabad during the six-month period from September 2018 to March 2019. Sample size was calculated using the WHO software for sample size determination in health studies using the formula for hypothesis testing for two population proportion (one-sided test) keeping the level of significance 5%, statistical prevalence as 80%, Anticipated proportion of incontinence in LIS as 12.5%.[6] and anticipated proportion of incontinence in Lord's dilatation = 0%.[6] Patients of both genders and ages between 18 to 50 years were enrolled through non probability convenience sampling and were diagnosed as having anal fissure by digital rectal examination or proctoscopy. Patients having acute anal fissure, hemorrhoids or fistula, and with neurologic deficits involving the sphincters or taking narcotic analgesics or having fecal incontinence were excluded from the study.

The surgical procedure involved was explained to all patients and written informed consent for surgery was taken. Demographic information like name, age, gender and addresses were recorded on a proforma. Among the total of 92 patients two groups of 46 were made for each procedure. Group A was operated using LIS and Group B using Lords dilatation method. Surgery was performed under spinal anesthesia by senior consultants in both groups. Patients were observed for incontinence on third post-operative day.

Data was analyzed using SPSS 20. Quantitative variables like age were described as mean ± standard deviation. Categorical variables like gender and incontinence were described as frequencies and percentages. Data was stratified by age and gender with respect to outcome variable that was incontinence. Both groups were compared for presence of incontinence using Chi-square test at 5% level of significance.

RESULTS

A total of 92 patients with anal fissure were included in this study. There were 27(29.3 %) males and 65 70.7% females. Mean age was 40.03 years ± 9.3. Mean age of female patients was 40.63 years ± 8.72 while the mean age of male patients was 38.59 years ± 10.73. There were 18(19.6%) below 30 years, 27(29.3%) in the 31 to 40 years group and 47(51.1%) in 41 to 50 years group. The patients were divided into two equal groups of 46 patients, in group A, LIS was performed while in Group B Lord's dilatation for treatment of chronic anal fissure was performed. A total of 11 patients (12%) developed fecal incontinence and flatus incontinence was seen in 1(1.1%) and no incontinence in 80 (87.0 %) patients on the third post-operative day Fig-1. Out of 65 female patients 55(59.8%) showed no incontinence while fecal incontinence was found in 9(9.8%) and flatus incontinence in 1(1.1%) female. In 27 male patients no incontinence was observed in 25(27.2%), fecal

incontinence in 2(2.2%) patients and none developed flatus incontinence. Result was insignificant with chi square value of 1.216 and p-value of 0.54 Table-1. In the below 30 years group no patient had flatus incontinence while one (1.1%) of the patients had fecal incontinence. Among 31 to 40 years age group none showed flatus incontinence while fecal incontinence in 3(3.3%). In 41 to 50 years group flatus incontinence was observed in 1(1.1%) and fecal incontinence in 7(7.6%). Result was insignificant with chi –square value of 2.14 and p-value of 0.71 Table-2. In the group A (LIS), flatus incontinence was observed in 1(1.1%), fecal incontinence in 10 (10.9%) and no incontinence in 35 (38.0%) patients. In group B (Lord's dilatation), none of the patients developed flatus incontinence while fecal incontinence was found in 1(1.1%) patient and no incontinence in 45(48.9%) patients. Result was significant with chi square value of 9.614 and p value 0.008 Table-3.

		Incontinence on 3rd post-operative day			Total
		Flatus	Fecal	No-incontinence	
Gender of Patients	Female	1	9	55	65
		1.1%	9.8%	59.8%	70.7%
	Male	0	2	25	27
		0.0%	2.2%	27.2%	29.3%
Total		1	11	80	92
		1.1%	12.0%	87.0%	100.0%
Chi-Square					1.216
P-Value					0.544

Table-1: Gender with Incontinence.

		Incontinence on 3rd post-operative day			Total
		Flatus	Fecal	No-incontinence	
Age Group	Below 30 yrs	0	1	17	18
		0%	1.1%	18.5%	19.6%
	31 to 40 yrs	0	3	24	27
		0.0%	3.3%	26.1%	29.3%
	41 to 50 yrs	1	7	39	47
		1.1%	7.6%	42.4%	51.1%
Total		1	11	80	92
		1.1%	12.0%	87.0%	100.0%
Chi-Square					2.143
P-Value					0.710

Table-2: Age with Incontinence.

		Incontinence on 3rd post-operative day			Total
		Flatus	Fecal	No-incontinence	
Procedures	LIS (Group A)	1	10	35	46
		1.1%	10.9%	38.0%	50.0%
	Lords (Group B)	0	1	45	46
		0.0%	1.1%	48.9%	50.0%
Total		1	11	80	92
		1.1%	12.0%	87.0%	100.0%
Chi-Square					9.614
P-Value					0.008

Table-3: Procedure with Incontinence.

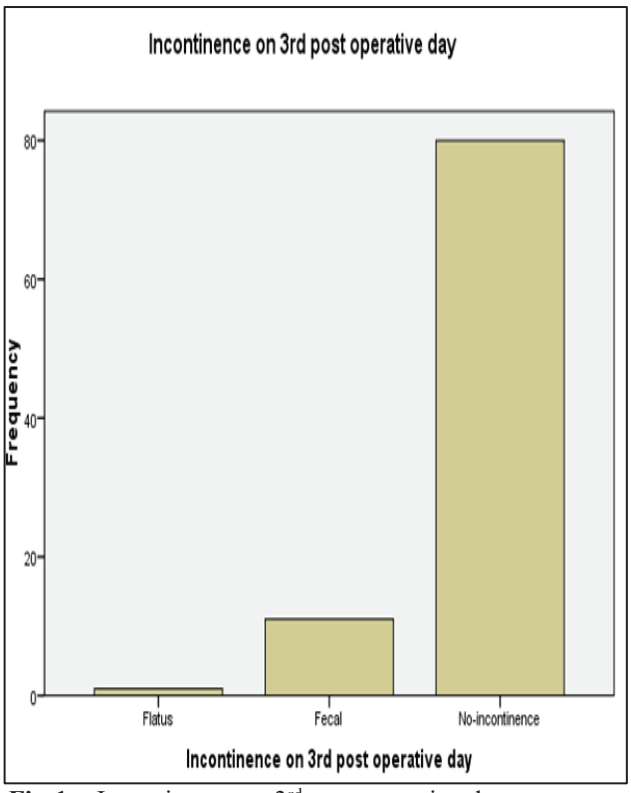

Fig-1: Incontinence on 3rd post-operative day

DISCUSSION

Anal fissure is a common yet troublesome condition. Chronic anal fissure is a linear tear in the anoderm extending from the anal verge to the dentate line. Management strategies include two widely performed surgical techniques which are Lords dilatation and Lateral internal sphincterotomy. Both procedures have similar post-operative symptoms, complications, and recurrence rate.[7] The aim of current study was to compare the results of two surgical procedures in term of incontinence on third post-operative day.

In this study total 92 patients were recruited among which 70.7 % were female and 29.3 % were male in both groups. The study showed that anal fissure affects females with predominance.

Mean age of the patients in this study was 40.03 and majority of patients (51.1%) were in age group of 41 to 50 years. It is favored in a study that women of childbearing age have more chances of having anal fissure specially soon after pregnancy or vaginal deliveries.[2] Similarly in elderly people are more prone to constipation which leads to a higher prevalence of anal fissure in this age group. Incontinence after sphincterotomy is more commonly found when LIS is performed on patients who have normal or hypotonic sphincters preoperatively which usually include the elderly and postpartum women. It is well documented that

women who previously had children have a higher risk of impairment of continence after sphincterotomy.[8]

One randomized control trial of fissurectomy vs LIS revealed that women are more likely to have extensive damage to their sphincters than men as they have shorter anal canals and shorter anal sphincters.[9] Our study has also shown that fecal incontinence was more in females than in males (9.8% vs 2.2%).

Studies have shown that anal dilatation when applied controlled either manually or with standardized techniques show better results in symptomatic relief and also in terms of post op complications. A study on controlled anal dilatation concluded that controlled anal dilatation is suitable for patients with chronic anal fissures because it is less invasive than LIS, with equivalent efficacy and safety. [10] also in another study where manual anal dilatation was compared with lateral internal sphincteromy, there was no difference of post-operative complications in both of the procedures.[11]

In addition, this method may be an alternative procedure in older and multiparous women who have higher risk of incontinence.

Although recently LIS is getting more popularity for treating anal fissure but there are also many studies which show limitations to the procedure due to complications in post op period and incontinence is one of them. In one study, incontinent patients following LIS were noted to have a thinner external sphincter than those who were continent post operatively.[12]

Generally, LIS is extremely effective in the treatment of anal fissures, with healing rates as high as 95 % while rates of continence impairment vary widely from 0% to up to 50%.[13] Variations could be due to operative technique and length and type of follow up. Open and closed LIS have similar rates of continence impairment but extending the sphincterotomy to the dentate line is associated with increased soiling.[14]

Another study suggests that the division of more internal anal sphincter by surgeon may contribute to incontinence.[15,16]

LIS seems to be the operation of choice, resulting in success rates as high as 96 to 100% with high patient satisfaction. It is however associated with about 5% recurrence and 2 to 20% incontinence rates.[17]

Limitations:

The limitation of this study was that this was a quasi-experimental study lacking a control group and thus randomization was not used. A randomized control trial would have been a better way to establish association between incontinence and the procedures performed for anal fissure.

CONCLUSION

Lord's dilatation is a better technique as compared to lateral internal sphincterotomy in terms of fecal and flatus incontinence. This complication is more commonly observed in female patients as compared to males.

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