Comparison of Outcome in Lateral Sphinterotomy and Anal Advancement Flap

Rehman Maqbool, Abdullah Bin Saeed, Ahmad Raees, Javed Iqbal

ABSTRACT

Background: Surgery should be reserved for patients in whom anal fissures fail to heal despite adequate medical therapy. The goal of surgical therapy is to relax the internal anal sphincter, which is most often accomplished by a lateral internal sphincterotomy. An anal advancement flap is effective in healing an anal fissure as primary line of treatment is also a better choice for those who have recurrent anal fissures. **Objective:** The objective of this study was to compare the outcome of lateral sphincterotomy with Anal Advancement Flap in patients of anal fissure. **Setting:** Department of Surgery, Punjab Medical College and Affiliated Hospitals, Faisalabad. **Study design:** Randomized clinical trial. **Duration of study:** 6 months, from 01-03-2016 to 31-8- 2016. **Subjects and Methods:** A total of 160 cases (80 cases in each group) were included in the study. After taking hospital ethical committee approval, patients coming through OPD, who fulfilled the inclusion criteria were enrolled and informed consent was taken from them. All the patients were randomly divided into two groups by using computer generated number table. Group A patients underwent lateral sphincterotomy and group B patients underwent anal advancement flap procedure for chronic Anal Fissure. Outcome in terms of Wound infection and anal incontinence was compared in both groups. **Results:** In our study, mean age was calculated as 36.45±9.68 in group A and 38.61±9.77 years in group B, 56.25(n=45) in Group-A and 57.5%(n=46) in Group-B were male while 43.75%(n=35) in Group-A and 42.5%(n=34) in Group-B were females, comparison of outcome of lateral sphincterotomy with anal advancement flap in patients of anal fissure shows that 12.5%(n=10) in Group-A (patients who underwent lateral sphincterotomy) and 3.75%(n=3) in Group-B (patients who underwent anal advancement flap procedure) had infection, p value = 0.01 while anal incontinence was recorded as 17.5%(n=14) in Group-A and 2.5%(n=2) in Group-B, p value = 0.001. **Conclusion:** We concluded that outcome of anal Advancement flap is significantly better when compared with lateral sphincterotomy in treatment of chronic anal fissure in term of less infection and anal continence.

Keywords: Anal fissure, lateral sphincterotomy, Anal Advancement Flap, outcome.

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INTRODUCTION

Anal fissure is a painful condition that is associated with painful defecation and per rectal bleeding. The acute anal fissure is a radial split in the anoderm extending from the anal verge for a variable distance proximally towards the dentate line. Chronic anal fissures are those which fail to heal and form linear indurated ulcers. Its pathogenesis is due to multiple factors: mechanical trauma, sphincter spasm, and ischemia.[1] Chronic anal fissure is having the prevalence rate approximately 30–40% of total ano-rectal sufferings whereas the incidence is supposed to be very common in constipated people particularly patients who pass hard and dry stool.[2]

The mainstay of current conservative management is the topical application of pharmacological agents that relax the internal anal sphincter. This reduces spasm whereby pain is relieved and the increased vascular perfusion promotes healing. Such agents include glyceryl trinitrate 0.2% and diltiazem 2%.[3] When conservative measures fail, a surgical approach becomes necessary for the definitive management of the chronic anal fissure.[4]

Lateral internal sphincterotomy may be offered without pharmacologic treatment failure according to the practice parameters by the American Society of Colon and Rectal Surgeons.[5] Lateral internal sphincterotomy remains the gold standard for definitive management of anal fissures, the healing rates of sphincterotomy range from 92% to 100%, with the majority of the fissures healing within 2 months, but comes with a risk of incontinence.[6, 7]

An anal advancement flap is effective in healing an anal fissure as primary line of treatment, it is also a good choice for those who have recurrent anal fissures. This procedure can be applied to chronic anal fissures with success as a primary therapy as it shows excellent and rapid rates of healing of fissure,

rapid relieve of pain with minor complications.[8] In Research published by Tarek et al, postoperative infection rate with anal advancement flap is 0%[1] while it was about 7.5%[9] with internal lateral sphincterotomy. Anal incontinence with anal advancement flap was 0% and with lateral sphincterotomy it was about 20% after 3 months of treatment.[10]

In routine practice lateral internal sphincterotomy has been used for the treatment of chronic anal fissure. There is no local data available on the comparison of these two procedures. So, the results of our study will be helpful in creating awareness about the use of anal advancement flap so that it can be used as the first line of treatment for chronic anal fissure.

METHODOLOGY

Study design: Randomized clinical trial

Setting: Department of Surgery, Punjab Medical College and Affiliated Hospitals, Faisalabad

Sampling technique: Non-probability consecutive sampling

Duration of study: This study was carried out for 6 months from 01-3-2016 to 31-8-2016.

Sample size: By using WHO sample size calculator for 2 proportions

P_1=0 %[1]

P_2=7.5%[2]

Power of study=80%

Level of significance=5%

Sample size=160 (80 in each group)

Inclusion Criteria

- Age (15yrs to 60 yrs.)
- Gender both male and female.
- Disease. Patients with chronic anal fissure as per operational definition.

Exclusion Criteria

- Patients having any other perianal diseases. (hemorrhoids, fistula or abscess)
- Patients who presented with acute anal fissure. (less than 2 to 3 weeks)
- those who had undergone previous surgical procedure in the anal canal

After taking hospital ethical committee approval, patients coming through OPD, who fulfill the inclusion criteria were enrolled and informed consent was taken from them. All the patients were randomly divided into two groups by using computer generated number table. Group A patients underwent lateral sphincterotomy and group B patients underwent anal advancement flap procedure for chronic Anal Fissure.

Lateral sphincterotomy was performed in regional anesthesia in the lithotomy position by a standard open technique. Wound infection was assessed as per operational definition 3rd post-operative day of treatment and anal incontinence was assessed as per operational definition after 3 months of treatment. All the information was collected on Performa. All the data was analyzed by using SPSS V-22.

WOUND INFECTION

- It was recorded on third postoperative day by the presence of all of the following: fever (>37℃), measured with thermometer placed below the tongue in oral cavity), erythema (redness 3-5cm around of the wound) and serous discharge from the wound and flap failure.

ANAL INCONTINENCE

- Anal incontinence is a condition in which patient lose voluntary hold on flatus and stools postoperatively due to damage to sphincter. This was recorded by Vaizey scoring after 3 months of treatment

- **Vaizey Questionnaire**

	Never	Rarely	sometimes	weekly	Daily
Incontinence for solid stool	0	1	2	3	4
Incontinence for liquid stool	0	1	2	3	4
Incontinence for gas	0	1	2	3	4
Alteration to lifestyle	0	1	2	3	4
	NO			Yes	
Need to wear a pad or plug	0			2	
Taking constipating medicine	0			2	
Lack of ability to defer defecation for 15 min	0			4	

Never = no episode in past 3 months;
Rarely = 3 episode in past 3 months;
Sometimes = > 1 episode in one month for 3 months;
Weekly = 1 or more episode per week
Daily= 1 or more episode per day
Minimum score = 0(complete continence)
Maximum score =24(complete incontinence)

Score equal or more than 20 will be considered anal incontinence.

RESULTS

A total of 160 cases (80 cases in each groups) fulfilling the inclusion/exclusion criteria were enrolled to compare the outcome of lateral sphincterotomy with Anal Advancement Flap in patients of anal fissure.

AGE DISTRIBUTION

Age distribution of the patients was done, it shows that 71.25%(n=57) in Group-A and 60%(n=48) in Group-B were between 15-40 years of age while 28.75%(n=23) in Group-A and 40%(n=32) in Group-B were between 41-60 years of age, mean±SD was calculated as 36.45±9.68 and 38.61±9.77 years respectively. (Table No. 1)

Table 1: Age distribution (n=160)

Age (in years)	Group-A (n=80)		Group-B (n=80)	
	No. of patients	%	No. of patients	%
15-40	57	71.25	48	60
41-60	23	28.75	32	40
Total	**80**	**100**	**80**	**100**
Mean±SD	**36.45±9.68**		**38.61±9.77**	

GENDER DISTRIBUTION

Patients were distributed according to gender, it shows that 56.25% (n=45) in Group-A and 57.5% (n=46) in Group-B were male while 43.75% (n=35) in Group-A and 42.5% (n=34) in Group-B were females. (Table No. 2)

Table 2: Gender distribution (n=160)

Gender	Group-A (n=80)		Group-B (n=80)	
	No. of patients	%	No. of patients	%
Male	45	56.25	46	57.5
Female	35	43.75	34	42.5
Total	**80**	**100**	**80**	**100**

COMPARISON OF OUTCOME

Comparison of outcome of lateral sphincterotomy with anal advancement flap in patients of anal fissure shows that 12.5%(n=10) in Group-A and 3.75%(n=3) in Group-B had infection, p value was calculated as 0.01 while anal incontinence was recorded as 17.5%(n=14) in Group-A and 2.5%(n=2) in Group-B, p value was calculated as 0.001 showing a significant difference. (Table No. 3)

Table 3: Comparison of outcome of lateral sphincterotomy with anal advancement flap in patients of anal fissure (n=160)

Outcome	Group-A (n=80)		Group-B (n=80)		P value
	No. of patients	%	No. of patients	%	
Infection	10	12.5	3	3.75	0.01
Anal incontinence	14	17.5	2	2.5	0.001

DISCUSSION

Surgery should be reserved for patients in whom anal fissures fail to heal despite adequate medical therapy. The goal of surgical therapy is to relax the internal anal sphincter, which is commonly accomplished by a lateral internal sphincterotomy. An anal advancement flap effective in healing an anal fissure as primary line of treatment is also a good choice for those who have recurrent anal fissures.[11]

In routine practice lateral internal sphincterotomy has been used for the treatment of chronic anal fissure. There is no local data available on the comparison of these two procedures. This study was planned so that the results of study may be helpful in creating awareness about the use of anal advancement flap as the first line of treatment for chronic anal fissure.

In our study, 71.25%(n=57) in Group-A and 60%(n=48) in Group-B were between 15-40 years of age while 28.75%(n=23) in Group-A and 40%(n=32) in Group-B were between 41-60 years of age, mean ±SD was calculated as 36.45±9.68 and 38.61±9.77 years respectively, 56.25(n=45) in Group-A and 57.5%(n=46) in Group-B were male while 43.75%(n=35) in Group-A and 42.5%(n=34) in Group-B were females, comparison of outcome of lateral sphincterotomy with anal advancement flap in patients of anal fissure shows that 12.5%(n=10) in Group-A and 3.75%(n=3) in Group-B had infection, p value was calculated as 0.01 while anal incontinence was recorded as 17.5%(n=14) in Group-A and 2.5%(n=2) in Group-B, p value was calculated as 0.001 showing a significant difference. According to previous studies Postoperative infection rate with anal advancement flap is 0%[12], while it was about 7.5%[13] with internal lateral sphincterotomy and anal incontinence with anal advancement flap was 0% and with lateral sphincterotomy it was about 20% after 3 months of treatment.[14]

Flap anoplasty procedures are also used in the treatment of chronic anal fissures. These procedures involve fashioning a local flap to cover

the fissure defect. As flap procedures do not involve disruption of the internal anal sphincter, they are particularly useful in patients with normal anal pressures or in fissures secondary to obstetric trauma where there is often associated internal sphincter disruption. A study using a rotation flap achieved 81% healing rate with an 11.8% flap failure rate and 0% incontinence rate.[15] A second study using a V-Y advancement flap achieved a 98% healing rate with a flap dehiscence rate of 5.9% and 0% incontinence rate, but with a recurrence rate of 5.9% of new fissures at new locations.[16]

On the basis of vaizey score taken in early post operative duration 55% of patients at score of 0, 33% were having mind incontinence (>6 vaizey score), 9% patients were having incontinence classified as moderate vaizey score 8-10 and 3% patients were having severe incontinence vaizey score >10. In late post operative period these statics improved significantly. In this period 89% patients were totally continent vaizey score = 0, 6.5% patients were having incontinence classified as mild degree vaizey score >6, 3.7% patients were having moderate incontinence vaizey score 8-10, only 0.8% patients were having incontinence that is classified as severe incontinence vaizey score >10. Another method adopted to asses severity of incontinence was in quality of life assessment after anal advancement flap surgery. In early post-operative duration 3.3% patients answered that their physical life is affected 3.7% patients said their social and 1% patient said that their sexual life is affected due to fecal incontinence. In late follow up period however less than 1% of these patients had this issue of impact of incontinence on their life style. These findings are supported by Kang et al. and Giordano et al.[17,18]

CONCLUSION

We concluded that outcome of anal Advancement flap is significantly better when compared with lateral sphincterotomy in treatment of chronic anal fissure in term of less infection and anal continence.

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