

Research Article**Comparative study between lateral internal sphincterotomy and GTN cream
0.2% in cases of acute anal fissure****¹Sanam Saqib, ²Sahibzada Muhammad Azib Gondal
and ³Ibtesam Zafar**¹Ex-House Officer Services Hospital Lahore²Demonstrator Department of Physiology FUMC Islamabad³Resident Department of Radiology PIMS Islamabad**ABSTRACT****Objectives:**To compare lateral internal sphincterotomy and GTN cream 0.2% in cases of acute anal fissure.**Material and methods:**This comparative study was conducted at Department of Surgery Services Hospital, Lahore from March 2017 to September 2017. Total 94 cases of acute anal fissure were selected and healing was assessed between lateral internal sphincterotomy and GTN cream 0.2% cream.**Results:**In this study mean age of cases of acute anal fissure was 39.74 ± 11.74 years. Healing of acute anal fissure was noted in lateral internal sphincterotomy group was as 41 (87.23%) and in GTN cream 0.2% cream group was as 29 (61.67%). Difference between healing rate of lateral internal sphincterotomy group and GTN cream 0.2% cream group was statistically significant (0.008).**Conclusion:**Findings of present study revealed that healing rate patients with acute anal fissure is better in patients managed with Lateral internal sphincterotomy as compare to patients managed the GTN cream.**Keywords:**Anal fissure, lateral internal sphincterotomy, GTN. Surgical management**INTRODUCTION**

An anal fissure is a linear ulcer of the lower half of the anal canal.¹ Acute fissures are those presenting within 3 to 6 weeks of symptom onset.² Classically acute anal fissures arise from the trauma caused by the strained evacuation of a hard stool or less commonly, from the repeated passage of diarrhea.³ In men, 95% of fissures are close to the posterior midline and 5% near anterior midline, whereas in women, about 80% will be located posteriorly and 20% anteriorly.⁴ The diagnosis is made by a history of pain and bleeding accompanying defecation and is confirmed by visual inspection.⁵ The underlying principle of treating anal fissure is to reduce the internal sphincter tone. This can be achieved by non-surgical and surgical methods. Commonly lateral internal sphincterotomy and GTN 0.2%

cream for local application remains the popular methods of treating this condition.⁶ But each method has got its own advantages and disadvantages. Lateral internal sphincterotomy is a simple surgical procedure which heals anal fissure rapidly with low recurrence rate. However disadvantages of this procedure may include; disturbance of continence, bleeding, fistula, abscess, persistent wound pain, cost and time of recovery.^{7,8}

Previous studies have been conducted on chronic anal fissure but our study is conducting on acute anal fissure. Usually the patients report inconvincibility and difficulty because of pain in proper application of GTN which leads to poor compliance of GTN application in case of acute anal fissure. So expected results of GTN in

optimal period are not conveniencing. That's why in clinical experience and available literature, the outcome of patient with acute fissure in ano with lateral sphincterotomy is more efficient and feasible than GTN cream.

MATERIAL AND METHODS

This comparative study was conducted at Department of Surgery Services Hospital, Lahore from March 2017 to September 2017. Total 94 patients with acute anal fissure either male or female having age from 20-60 years were included in this study.

Patients with recurrent anal fissure (assessed on history and physical examination), external or internal hemorrhoids (assessed on history, physical examination and proctoscopy), patients with chronic anal fissure (assessed on history and physical examination), patients with sentinel pile (assessed on history and physical examination), patients treated by Hakeems (acids, corrosive) assessed on history and physical examination and parturition trauma. (assessed on history and physical examination) were excluded from the study. Anal fissure was labeled as acute one when its symptoms (moderate to severe pain during defecation, bleeding per rectum) is within 3 to 6 weeks of onset and patients were assessed with history and physical examination. Permission was taken from institution review committee before commencing the study and written informed consent was taken from every patient. All included patients were offered to pick up a slip from total mixed up slips (half-slips were contain letter "A" and other half-slips contain letter "B") and he/she was placed in that group (Group-A or Group-B according to slip). In Group-A included those patients who were undergo Lateral internal sphincterotomy and Group-B was include those patients who were be managed with 0.2% GTN cream. Patients were followed up fortnightly for 6 weeks in the OPD or earlier in case of any complication. Patients were evaluated by history with regards to symptoms improvements and rectal examination was performed for healing. Healing is defined when the Patient is free of

symptoms (painful defecation, bleeding per rectum) and fissure is not visualized on physical examination within 6 weeks of treatment. Outcome was noted in pre-designed proforma.

The data was entered in SPSS V16 for statistical analysis. Quantitative variable like age and duration of disease was presented as mean \pm SD, while qualitative variables like healing (study variable), gender were presented as frequency and percentages. Chi-square test was applied to compare the frequency of healing in both groups. Stratification was done for age, gender and duration of disease. Post stratification chi-square test was applied to see the level of significance. P-values \leq 0.05 was considered statistically significant.

RESULTS

Total 94 patients were included in this study. Mean age of the patients was 39.74 ± 11.74 years, mean age of the patients of Group A was 39.40 ± 11.64 years and mean age of the patients of Group B was 40.09 ± 11.95 years.

Patients of Group A managed with Lateral internal sphincterotomy and patients of Group B managed with GTN 0.2% cream. Healing was noted in 41 (87.23%) of Group A and 29 (61.67%) patients of Group B. Difference between the frequency of healing of Group A and B was statistically significant (0.008). (Table 1)

Out of 30 male patients of Group A, healing was noted in 26 (86.67%) patients. Out of 31 male patients of Group B, healing was seen in 20 (64.52%) was seen. But insignificant (0.0731) difference between the frequency healing among the male patients of Group A and Group B was seen. Out of 17 female patients of Group A, healing was noted in 15 (88.24%) patients and out of 16 female patients of Group B, healing was noted in 9 (56.25%) patients. Statistically significant (0.05) difference between the frequency of healing among the female patients of Group A and Group B was noted. (Table 2)

Age range of the patients was 20-60 years. All the patients of Group A and Group B was divided in to two age groups Age Groups, Age Group 20-40

years and Age Group 41-60 years. Comparison of frequency of healing between Group A and B for age group 20-40 years and age group 41-60 years was done. In Age Group 20-40 years, out of 27 patients of Group A, healing was seen in 25 (92.59%) and in Group B was 16 (66.67%). Significant (P= 0.033) difference of healing between both groups was noted. In Age Group 41-60 years, out of 20 patients of Group A, healing was noted in 16 (80%) patients and in Group B was 13 (56.52%). But the difference was statistically insignificant (P = 0.119). (Table 3) Patients with 1 week to 6 weeks of onset of anal fissure were selected and divided into two groups according to duration of disease. 1-3 weeks

duration and 4 – 6 weeks duration. Out of 26 patients of Group A with 1-3 weeks of duration of disease, healing rate was 22 (84.62%). Out 26 patients of Group B with 1-3 weeks duration of disease, healing rate was 15 (57.69%). But insignificant (P = 0.064) difference between the frequency of healing of both groups was detected. Out of 21 patients of Group A with 4-6 weeks of duration of disease, healing rate was 19 (90.48%). Out 21 patients of Group B with 4-6 weeks duration of disease, healing rate was 14 (66.67%). But insignificant (P = 0.130) difference between the frequency of healing of both groups was detected. (Table 4)

Table 1 Comparison of frequency of healing between the both groups

Group	Healing		Total
	Yes (%)	No (%)	
A	41 (87.23)	6 (12.77)	47
B	29 (61.7)	18 (38.3)	47

P. value = 0.008

Table 2 Comparison of healing between male and female patients of both groups

Group	Healing		Total
	Yes (%)	No (%)	
Male Patients (*)			
A	26 (86.67%)	4 (13.33%)	30
B	20 (64.52%)	11 (35.48%)	31
Female Patients (**)			
A	15 (88.24%)	2 (11.76%)	17
B	9 (56.25%)	7 (43.75%)	16

P. value = * (0.0731), ** (0.05)

Table 3 Comparison of healing between different age groups

Group	Healing		Total
	Yes(%)	No(%)	
age group 20-40 years (*)			
A	25(92.59)	2(7.41)	27
B	16(66.67)	8(33.33)	24
age group 41-60 years (**)			
A	16(80)	4(20)	20
B	13(56.52)	10(43.48)	23

P value = * (0.033), ** (0.119)

Table4: Comparison of healing for duration of disease.

Group	Healing		Total
	Yes (%)	No (%)	
1-3 weeks of duration of disease (*)			
A	22 (84.62)	4 (15.38)	26
B	15 (57.69)	11 (42.31)	26
4-6 weeks of duration of disease (**)			
A	19 (90.48)	2 (9.52)	21
B	14 (66.67)	7 (33.33)	21

P value = * (0.064), ** (0.130)

DISCUSSION

Anal fissure is an elongated ulcer in the long axis of lower anal canal.⁵ It is either acute or chronic. Acute anal fissure is a tear through the skin of the anal margin extending into the anal canal. In acute cases there is little inflammation, induration or oedema of its edges. Usually there is spasm of the anal sphincter muscle.⁹⁻¹⁰ The objective of this study was to compare the healing rate in patients with acute anal fissure between the two treatment modalities i.e. lateral internal sphincterotomy and GTN cream. Total 94 patients with acute anal fissure were selected and divided into two equal groups A and B. In Group A, lateral internal sphincterotomy was performed and patients of Group B was managed with GTN cream and after 6 weeks healing was assessed. Frequency of healing was 87.23% and 61.7% in patients managed with lateral internal sphincterotomy and GTN cream respectively and the difference was statistically significant (P = 0.008) between the both groups. In one study by Manan et al, frequency of healing in cases of acute anal fissure managed with Lateral internal sphincterotomy was 95% and 70% in patients managed with GTN cream.⁵ Findings of this study are in agreement with our study.

Memon MR et al¹¹ found 100% healing rate in patients managed with Lateral internal sphincterotomy and 30.04% in patients managed with GTN cream.

Hashmat A et al¹² made a conclusion that GTN cream is a safe and effective modality for the treatment of fissure in-ano. GTN cream is a good alternative mode of therapy for patients who refuse surgery and prefer medical line of treatment.⁵

Rather SA et al¹³ concluded that lateral internal sphincterotomy under local anesthesia is more curative, easy and safe, in the hands of a beginner as well as an experienced surgeon, with highest patient satisfaction, and should be considered as the first line of therapy in both chronic and resistant/recurrent acute anal fissures. Libertiny et al,¹⁴ in a comparative trial reported 98% healing of anal fissure with lateral internal sphincterotomy while GTN relieved 56%, with 10% recurrence.

CONCLUSION

Findings of present study revealed that healing rate patients with acute anal fissure is better in patients managed with Lateral internal sphincterotomy as compare to patients managed the GTN cream.

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