



ANALYTICAL STUDY OF CASES OF ACUTE FISSURE IN ANO

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ABSTRACT

Background: Anal fissure is the most painful condition of anorectal region which affects the daily activity of the patients. Acute fissure in ano can be treated with medical or surgical management. There is an increase in the use of topical application for acute fissure in ano. The most common topical agent used is diltiazem, a calcium channel blocker, which relaxes the anal sphincter and thus promotes healing of the anal fissure and has less side effects. **Methods:** The study is conducted at RMMCH over a period of 2 years. Diltiazem is available as 2% ointment / gel which is applied intra anally or peri-anally three times a day for 2 weeks. This study is undertaken to study the efficacy of topical application of diltiazem than other topical applications. Between study and control group increased healing rate and symptomatic improvement is observed in study group. **Results:** In the above study, most of the patients were females. Painful bleeding and constipation were the common symptoms. The majority of patients had posterior fissure than anterior. The pain relief time was significantly lower in study group (70%) which is about 4 weeks than control group who had pain relief time of about 5 weeks. Healing time was also significantly increased of about 6 weeks in study (60%) than control group who had about 7 weeks. The recurrence rate was significantly lower in study group (6%) compared to control group (40%). **Conclusion:** This study concludes that the topical application of 2% diltiazem in the patients of acute fissure in ano can be the primary modality of treatment as it has better pain relief time, healing time, less recurrence rate compared to the patients undergone conservative management with stool softeners.

KEYWORDS : Acute fissure in ano, 2% diltiazem, better healing time

INTRODUCTION

Fissure in ano is the most common painful condition of perianal region, characterized by longitudinal ulcers affecting the distal part of the anal canal. It's so common that it affects 1 in 10 people and causes very disabling symptoms such as severe pricking type of perianal pain & bleeding per rectum making the diseased to suffer intense mental & physical agony in spite of rest and analgesics. Also the chronic fissures behave more differently in that way they are more persistent and relapsing than the acute fissures which are self-healing.¹

The aetiology of Fissures though the Persistent Hypertonia of the anal sphincters is claimed to be the well-established cause. And so the available standard treatment options targets at relieving the spasm of the internal anal sphincter with surgical or chemical methods. Gold standard in the management of the acute fissure in ano is the time proven, Lateral Internal Sphincterotomy with healing rates above 95%. But the need for the alternative is always been there to overcome the surgical stress and risk of incontinence. Here we have different chemicals which do the same job of relaxing the tone of internal sphincter by their special properties. Of which, Diltiazem, a calcium channel blocker with its unique profile of better healing rates and least side effects is been used in its topical form locally. It also compares and analyze the other secondary objectives such as recovery of Pain, Bleeding per Rectum, risk of Incontinence are less.²

AIM

- To find the incidence and etiological factors of fissure in ano
- To evaluate the effectiveness of application of 2% topical diltiazem in the symptomatic relief of acute fissure in ano
- To discuss various treatment modalities of acute and

chronic fissure in ano

METHODOLOGY**Setting:**

Study was a prospective comparative study done in Rajah Muthiah Medical College and Hospital, Chidambaram at Department of general surgery from September 2020 to October 2022.

Study Population

- Sample size – 100 patients
- The study group was divided into two groups 50 each. This study was conducted among both the inpatients and out patients in RMMCH during the study period.

Inclusion Criteria

- Age group 12 – 60 years
- Outpatients in RMMCH
- Both males and females

Exclusion Criteria

- Patient not willing
- Age group < 12 and > 60 years of age.
- Pregnant females
- Secondary causes of anal fissure like crohn's disease and tuberculosis
- Associated conditions with haemorrhoids and fistula
- Allergy to topical diltiazem

Procedure

Based on the detailed history and examinations and to evaluate the diseases, per rectal examination, routine blood investigation, x-ray, ultrasound abdomen were taken to exclude other medical causes. For 50 cases – conservative management includes antibiotics, analgesics, stool softeners,

sitz bath with betadine were given. For 50 cases – topical application of 2% diltiazem gel is used along with other conservative management for 2 weeks. Healing time for both was observed. However these procedures may not bring any changes in the routine treatment protocol.

DATA ANALYSIS

In the present study effectiveness of topical diltiazem in the acute anal fissure was investigated. One hundred patients with acute anal fissure was selected and they were randomly divided in to two groups viz (i) group 'A' – control and (ii) group 'B' – experimental. The effectiveness of topical diltiazem on pain relief, healing time and recurrently was compared between the groups. The statistical tools used were descriptive analysis such as mean, standard deviation and class intervals and inferential statistics by chi-square analysis. The entire statistical analysis was carried out by the statistical packages of the social sciences (SPSS-21).

Table-1: Age Of The Study Patients-descriptive Data

Age	Shapiro Wilk		M	S.D	Independent sample	
	Value	P			t	P
Control (Group A)	0.97	0.286	37.18	11.23	0.88	0.383
Study (Group B)	0.96	0.067	39.04	9.97		

M-mean, S.D-standard deviation, t-independent sample 't' test, P-probability.

It is inferred from Table -1 that mean age of group 'A' (Control) patients was 37.18±9.97 years for group 'B' (experimental) patients. There was no significant difference in the age between groups, t=0.88, p=0.383 >0.05.

Table-2: Gender Distribution Of The Study Patients

Gender	Shapiro Wilk		N	%	Chi-square	
	Value	P			X ²	P
Control (Group A)	0.56	0.001			0.211	0.646
Male			14	28		
Female			36	72		
Study (Group B)	0.54	0.001				
Male			13	26		
Female			37	74		

N-number, %-percentage, x2-chi square, P-probability

It is inferred from Table -2 that majority of group 'A' patients (72%) and group 'B' patients (74%) were females. There was no significant difference in the gender between groups.

Table-3: Symptoms Of The Study Patients

Symptoms	Control (Group A)		Study (Group B)	
	N	%	N	%
Painful Bleeding	43	86	40	80
Bleeding	49	98	50	100
Constipation	42	84	41	82
Puritis	9	18	19	38
Total	50	100	50	100

N-number, %-percentage

Table-4: Location Of The Fissures – Descriptive Analysis

Location	Control (Group A)		Study (Group B)		Chi-square test	
	N	%	N	%	X ²	P
Anterior	21	42	9	18	4.42	0.036*
Posterior	29	58	38	75		
Both	-	-	3	6		
Total	40	100	40	100		

N-number, %-percentage, x2-chi square, P-probability, * - Significant

It is inferred from Table - 3 that, bleeding was the common symptom of the patients, in group 'A' 98% had bleeding and in group 'B' all the patients had bleeding. The next common symptom was painful bleeding noted in 86% of group 'A' and 80% of group 'B' patients. The other notable symptom was constipation observed in 84% of group 'A' and 82% of group 'B' patients. Puritis was noted in 18% of group 'A' and 38% of group 'B' patients.

It is inferred from Table - 4 th at, posterior fissure was commonly reported, noted in 58% in group 'A' and 76% in group 'B' patients. The location was anterior for 42% in group 'A' and 18% in group 'B' patients. In group 'B', 6% had both fissures. The difference in the location of fissure was statistically significant between the groups, x²=4.42, p=0.036 <0.05.

Table-5: Comparison Of Time Taken For Relief Of Pain Between The Groups

Pain relief time (in weeks)	Control (Group A)		Study (Group B)		Chi-square test			
	N	%	N	%	X ²	P		
3 Weeks	-	-	1	2	2.17	0.041 *		
4 weeks	11	22	35	70				
5 weeks	24	48	14	28				
6 weeks	12	24	-	-				
7 weeks	3	6	-	-				
Total	50	100	50	100				

N-number, %-percentage, x2-chi square, P-probability, * - Significant

It is inferred from Table - 5 that most of the patients in group 'B' had got pain relief in 4 weeks (70%). The majority of group 'A' patients, 48% had got pain relief in 5 weeks. In group 'B' all the patients had achieved pain relief in 5 weeks. But in group 'A' 24% had got pain relief in 6 weeks and 6% had achieved this in 7 weeks. The difference in the time taken for pain relief was statistically significant between the groups x²=2.17, p=0.041 <0.05.

Table-6: Comparison Of Healing Time Of The Study Patients

Healing time (in weeks)	Control (Group A)		Study (Group B)		Chi-square test	
	N	%	N	%	X ²	P
6 Weeks	15	30	30	60	8.15	0.047
7 weeks	18	36	17	34		
8 weeks	15	30	3	6		
9 weeks	2	4	-	-		
Total	50	100	50	100		

N-number, %-percentage, x2-chi square, P-probability

It is inferred from Table - 1 that majority of group 'B' patients had achieved healing in 6 weeks (60%) about 94% of the patients in group 'B' had achieved complete healing within 7 weeks. In group 'A' 30% had achieved healing in 6 weeks. Within 7 weeks 66% of patients in group 'A' had complete in 8 weeks and 4% had complete healing in 9 weeks. The difference in the healing came was statistically significant, x²=8.15, p=0.047 <0.05.

Table-7: Comparison Of Recurrence Of The Study Patients

Recurrence	N	%	Chi-square test	
			X ²	P
Control (Group A)	20	40	4.79	0.029*
Study (Group B)	3	6		

N-number, %-percentage, x2-chi square, P-probability, * - Significant

It is inferred from Table - 7 that majority 40% in group 'A' had recurrency of the condition whereas the recurrency rate was

only 6% in the group 'A' patients. The difference in the recurrence rate was statistically significant, $\chi^2=4.79$, $p=0.029$ between the group.

DISCUSSION

The mean age of the group 'A' patient was 37.18 ± 11.23 years and it was 39.04 ± 9.97 for group 'B' patients. There was no significant difference in the age between groups.

- The majority of the study patients were females, in group 'a' 72% and in group 'B' 74% was females.
- The most common symptom was bleeding (98%) followed by painful bleeding (83%) and constipation (83%).
- The majority of the study patients had posterior fissure (67%). Posterior fissure was observed in 305 of the study patients.
- The pain relief time was comparative and significantly in study patients (group B) the majority of the patients (70%) had achieved pain relief in 4 weeks. In controls (group A), the majority had pain relief at 5 weeks (48%). It was further noted that all the patients in group B had achieved pain relief within 5 weeks whereas in group 'A' only 70% had complete pain relief in 5 weeks.^{3,4}
- Healing time was again significantly less in group 'B' patients compared to group 'A'. Majority of patients in group 'B' had complete healing in 6 weeks (60%) whereas only 30% in group 'A' achieved this feat in 6 weeks. Most of the patients in group 'B' (94%) had complete healing within 7 weeks whereas 66% in group 'A' had complete healing in this much time.⁵⁻⁷
- The recurrence rate was significantly lower in group B (6%) compared to group A (40%) patients.

CONCLUSION

It is observed that the topical application of 2% diltiazem in acute fissure in ano has

- Early recovery from pain and bleeding per rectum
- Significant fissure healing time
- Less recurrence rate

This study concludes that the topical application of 2% diltiazem in the patients of acute fissure in ano can be the primary modality of treatment as it has better pain relief time, healing time, less recurrence rate compared to the patients undergone conservative management with stool softners.

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