Original Article

Chronic Anal Fissure Management

Comparison of Glyceral Trinitrate (GTN) Paste Application and Lateral Sphincterotomy in Chronic Anal Fissure Management

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ABSTRACT

Objective: Comparison of Glyceral Trinitrate (GTN) Paste Application and Lateral sphincterotomy in chronic Anal fissure management.

Study Design: Observational and Experimental Study

Place and Duration of Study: This study was conducted at the Departments of Surgery and Medicine, Sialkot Medical College, Sialkot from Jan 2019 to Jan 2020.

Materials and Methods: 108 patients of chronic anal fissure treated with gylceral trinitrate application compare with lateral sphincteroromy were included in this study. The history, examination and demographic data was recorded in the designed performa. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.

Results: The response to GTN paste was maximum in 25-30 age group and minimum at 50-60-year age group. In lateral sphincterotomy response was maximum in 25-30 age group, minimum response was seen in patient group 15-20 year and 50-60 year (table 1). In male response to GTN paste was maximum (51%) whereas in female maximum response was seen with lateral sphincterotomy (64%) (Table 2). Response to GTN paste was maximum in poor and middle class and minimum in upper class, whereas response to lateral sphincterotomy was maximum in poor class and minimum in middle class (Table 3).

Conclusion: It was concluded from the study that Glyceral Trinitrate was also maximum effected in lateral sphincterotomy at the age of 25-30 years.

Key Words: Gylceral trinitrate, lateral Sphincteroromy, Chornic Anal Fissure

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INTRODUCTION

Anal fissure consists essentially of crack in the skin-lined part of anal canal which often shows poor healing[1]. Chronic anal fissure (CAF) is common perineal condition and well known painful lesion. Ideal surgical treatment even though is not expensive may require long hospital stay and sometimes have problematic complications like anal incontinence. So non surgical treatment for this disease is much needed[2]. Following the recent proof of Gylcerol trinitrate as most important biological mediator of recto anal inhibitory reflex, it has been shown that topical application of nitric oxide donor,such as Glyceryl Trinitrate can lower the sphincter pressure and heal anal fissure. Glyceryl Trinitrate has been shown to be a potent treatment for chronic anal fissure. It decreases anal tone and ultimately heals the anal fissure[1,2]. Glyceryl Trinitrate is a cost effective first line treatment option for the management of chronic anal fissure[3]. Hence the present study is the attempt to know the efficacy of 0.2% Glyceryl Trinitrate ointment versus fissurectomy with lateral internal sphincterotomy and fissurectomy with posterior internal sphincterotomy in the management of chronic anal fissure.

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MATERIALS AND METHODS

One hundred eight patients of chronic anal fissure treated with gylceral trinitrate application compare with lateral sphincteroromy were included in this study. The history, examination and demographic data was recorded in the designed performa. The informed written consent was priorly taken in every case. The permission of ethical committee was also considered in this study. The data was analyzed for results on SPSS version 10.

RESULTS

Comparative study of GTN Paste application with lateral sphincterotomy in chronic anal fissure management.

Table No.1:Age Distribution (Response to treatment 108 Patients)

Age	GTN Paste (n33)	Lateral Sphincterotomy (n75)
15-20 Yr.	5 Patients (15%)	8 Patients (10.6%)
20-25 yr.	6 Patients (18%)	10 Patients (13%)
25-30 yr.	10 Patients (30%)	22 Patients (29.3%)
30-40 yr.	6 Patients (18%)	12 Patients (16%)
40-50 yr.	4 Patients (12%)	14 Patients (18.6%)
50-60 Yr.	2 Patients (6%)	8 Patients (10.6%)

The response to GTN paste was maximum in 25-30 age group and minimum at 50-60-year age group. In lateral sphincterotomy response was maximum in 25-30 age group, minimum response was seen in patient group 15-20 year and 50-60 year.

Table No.2:Sex Distribution

	GTN Paste Response	Lateral Sphincterotomy Response
Male 54 Pt.	28 (51%)	26 (29%)
Female 54 Pt.	19 (35%)	35 (64%)

In male response to GTN paste was maximum (51%) whereas in female maximum response was seen with lateral sphincterotomy (64%).

Table No.3: Socioeconomic Distribution

Socioeconomic Sitter	Response to GTN Paste	Response to Lateral Sphincterotomy
Poor Class 52 Pt.	22	30
Middle Class 29 Pt.	22	7
Upper Class 27 Pt.	12	15

Response to GTN paste was maximum in poor and middle class and minimum in upper class, whereas response to lateral sphincterotomy was maximum in poor class and minimum in middle class.

DISCUSSION

Male and female patients were equal in GTN group. There were 54 (50%) male patients and 54 (50%) female patients found in study group. The male: female ratio was 1:1. This is in accordance with study conducted by Schouten[3] Divino[4]. But female patients were found more in study conducted by Christie[5] and Richard[6]. This may be due to the higher incidence of male patients presenting for medical help. This may indicate a large iceberg phenomenon of patients within the population who are not willing to report to surgeon.

Majority of the patients were found in between 20 to 30years of age in all 2 groups. The mean duration of age was 34.14 in two groups. This age group appears to have higher predominance for development of chronic fissure in ano. This is accordance with study conducted by Christie[5], Schouten[3] Divino[4], Lund[7] and Richard[6] where mean age was 35,39,39,44 and 34.7 years respectively. But mean age was 44 and 55 years in study conducted by Palazzo and Schouten[8] respectively.

Delay in seeking help and diagnosis is primarily due to the nature of the disease. Lack of knowledge of the disease and availability of the effective treatment is also another important factor responsible for the delay in seeking help and chronicity.

The mean duration of symptoms was found at 4.24 months. This is in accordance with study conducted by Christie[5] and Schouten[3]. This highlights the delayed presentation. The late presentation also associated with a dislike of surgery as a mode of treatment. The idea of anal surgeries being painful is ingrained in the psyche of many patients especially in those of rural background. The demand of such patients for medicinal therapy is natural in such setting.

The presentations of symptoms were found similar in two groups. The sentinel pile was present in 56.6% of patients. Majority of patients 94% had posterior anal fissure, which is the most affected site of fissure in ano. The rare presentation of anterior fissure was noticed in 4% of patients and both in 2% of patients in the study group. This is in accordance with the study conducted by Schouten[3] where posterior anal fissure was found in 85% of patients, anterior in 12% of patients and both in 3% of patients. But in study conducted by Lund[7] the posterior fissure was found in 76% of patients and anterior fissure in 24% of patients. The common posterior fissure is due to less ano dermal flow at the posterior midline compared to other segment of the anal canal.

The indicators used for analysis have been, pain during defecation assessed by visual analogue scale (ranging from 1 to 10, 10 for worst pain experienced by the patient before entering the trial).

Presence of bleeding Per Rectum. This was reported commonly as streaking of blood in formed stool. Frank bleeding Per Rectum was rarely observed.

Side effects—headache, dizziness and flushing in GTN group.

Complications like incontinence of flatus, anal seepage of stool and fecal incontinence that underwent surgery.

These indicators are those that have been found to have association with the disease process and have good association with overall outcome of the disease. Observations were made at 2, 6 and 12 weeks follow up in all three types of treatment. Significant changes in the results in all three types of treatment at these time intervals were observed following initiation of treatment protocol.

With respect to pain control in 25 patients (83%), 29 patients (96.6%) and 30 patients (100%) pain relief were seen at 2, 6 and 12 weeks respectively in lateral sphincterotomy group. Pain relief was in 23 patients (76.6%), 26 patients (86.6%), 29 patients (97%) at 2, 6 and 12 weeks of interval in GTN arm. So pain relief was almost similar in GTN and surgical groups at different interval of time. Freidman test showed significant pain relief in all 3 groups as duration progresses from 2 to 12 weeks. This concides with study conducted by Mishra and co-workers[9]. But Palazzo and co- workers[10] showed pain relief in 33%, 51% and 62% of patients at 2,6 and 12 weeks respectively. This pain relief is due to reduction in the mean anal resting pressure.

Control of bleeding was found in 25 patients (83%), 29 patients (96.6%) and 30 patients (100%) in surgical group at 2, 6 and 12 weeks of duration respectively. Though 'P' is significant at 12 weeks, good results were also obtained with GTN group—23 patients (76.6%), 26 patients (86.6%) and 26 patients (86.6%) at 2, 6 and 12 weeks of duration respectively. Freidman test showed significant no bleeding in all all three types as duration progresses. This is again due to reduction in the mean anal resting pressure.

Healing was seen in 20%, 87% and 100% of patients at 2, 6 and 12 weeks in lateral sphincterotomy group respectively. Healing rate was found in 13.3%, 80% and 100% patients at 2, 6 and 12 weeks in posterior sphincterotomy group respectively. However favorable result in the form of complete healing of fissure, were observed in 5 patients (16.7%) at 2 weeks, 16 patients (53.3%) at 6 weeks and 24 patients (86.6%) at 12 weeks in GTN arm. Freidman test showed significant healing of fissure in all 3 groups as duration progresses from 2 to 12 weeks.

Thus lateral sphincterotomy had excellent healing of fissure at 6 and 12 weeks, good chances of healing were also present in treatment with GTN therapy at 12 weeks. This is in accordance with study conducted by Oettle[11] and Mishra[9] where healing rates were 80% and 92.5% respectively. But healing rates were found 43% and 60% in studies conducted by Jonas and co-workers[12] and Evans[13] respectively.

The most important side effect looked in GTN treatment was occurrence of headache. The headache alone has been found to prove the use of GTN for treatment. In our study headache was found in 6 patients (20%). Headache was mild degree and was controlled with using simple paracetamol. No other significant effects like cardiac effects, flushing, and dizziness were observed within study group. Minimum side effects were found in GTN group in study conducted by Oettle[11]. Thisconcides with study conducted by Lund[7] and Bacher et al.[14] However Richard et al[6] in their study showed 80% headache as a side effect in GTN group and 20% of patients were discontinued GTN therapy.

For the patients who underwent surgery the occurrence of incontinence was observed at follow up visits. The assessment was based primarily on history elicited as: Continence to flatus. Anal seepage or soiling of under clothes. Continence to feces on straining.

Out of 30 patients one patient (3.3%) and 2 patients (6.6%) showed flatus incontinence and anal seepage respectively who had undergone lateral sphincterotomy. Four (13.3%) out of 30 patients showed flatus incontinence and analleakage who had treated with posterior sphincterotomy. However, none of the patient who undergone surgery developed the fecal incontinence. Although no significant difference, complications were little at higher level in posterior sphincterotomy compared to lateral sphincterotomy group. Utzig and co-workers[1] in their study showed incontinence of flatus and anal leakage up to 12% of the patients. The studies discussed earlier had longer duration of follow up which might explain the reason for less incidence of incontinence in this series. The absence of recurrence is also attributed to same reason. Libertiny and co-workers[15] in their study showed 3% recurrence at 8 months in LIS group and 15% recurrence at 6 months in GTN group. However dietary modification, intake of high fiber diet and prescriptions of laxative in patients suffering from constipation could also be helpful. Longer follow-ups are required for proper assessment of recurrence.

CONCLUSION

It was concluded from the study that Glyceral Trinitrate was also maximum effected in lateral sphincterotomy at the age of 25-30 years.

Author's Contribution:

Concept & Design of Study:	Rehan Anwar Qureshi
Drafting:	Imran Idris Butt
Data Analysis:	Mian Mansoor
Revisiting Critically:	Rehan Anwar Qureshi, Imran Idris Butt
Final Approval of version:	Rehan Anwar Qureshi

Conflict of Interest: The study has no conflict of interest to declare by any author.

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