

Original Research Article

A comparison of efficacy between 0.2% of topical glyceryl trinitrate and lateral anal sphincterotomy

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ABSTRACT

Background: Anal fissure is a linear tear in the lining of the anal canal below the dentate line. Among the conservative modalities glyceryl trinitrate (GTN) is emerging as first line of treatment since it breaks the vicious cycle and relaxes the sphincter. Surgery was considered as the first line of treatment if conservative measures such as bulk laxatives, stool softeners and local anaesthetics fail. Aim of this study was to study the aetiology and predisposing factors, age and sex distribution, clinical presentation, position of fissure, complications associated with medical and surgical management and comparison of efficacy of topical GTN (0.2%) and lateral anal sphincterotomy.

Methods: The study was based on analysis of 60 patients who were treated for chronic fissure in ano at Malla Reddy Institute of Medical Sciences, Hyderabad from January 2018 to February 2020. Patients were divided into 2 groups. One group was managed by topical application of the ointment and other group was managed by surgery (lateral anal sphincterotomy). Statistical tool (software) used to analyse the data was SPSS 13.0 software.

Results: Around 33.33% patients who were managed medically by 0.2% glyceryl trinitrate did not have relief of symptoms. Patients under surgical management had more relief of symptoms (86.6%). Almost all patients treated with glyceryl trinitrate had some form of headache. During the immediate post-operative period 13.3% patients treated with surgery had pain.

Conclusions: It can be concluded that open lateral anal sphincterotomy is superior to topical 0.2% GTN with high rate of healing and very low rate of complications.

Keywords: Medical management, Surgical management, Fissure

INTRODUCTION

Anal fissure is a linear tear in the lining of the anal canal below the dentate line. It is a common proctologic problem affecting all age groups, was seen particularly in the young and middle-aged groups. The usual complaints are pain during/after defecation with most of the times, bright red colored bleeding along the surface of the stools. About 90% of fissure in ano occur in the posterior midline.¹ Usually anal fissure heals spontaneously but sometimes they enter into a vicious cycle of anal pain, constipation, fecal trauma and sphincter spasm. Among

the conservative modalities glyceryl trinitrate ointment is emerging as the first line of treatment as it breaks the vicious cycle and relaxes the sphincter.²⁻⁶ It is considered economical and cost effective.^{7,8} Surgery is considered as first line of treatment if conservative measures such as bulk laxatives, stool softeners and local anesthetics fail.^{1,9,10} The only drawback is, it is invasive expensive and patients have pain in the post-operative period.^{3,7-11} In chronic fissure irritation, pruritis and discharge are the main symptoms. Bleeding may or may not be present. A swollen skin tag (sentinel pile) may be felt outside the anus. In all cases of chronic fissure rectal examination

and proctoscopy are mandatory. The treatment can be in the lines of conservative methods, medical methods and surgical. Many fissures heal spontaneously in 2 to 3 weeks. Medical management includes fibre rich diet and bulk forming agents like husk and bran. Repeated anal trauma by fecal matter can be avoided by laxatives, surface anesthetic ointments (xylocaine) and oral analgesics are helpful to reduce pain. Metronidazole and suitable broad-spectrum antibiotics hasten the recovery. Frequent sitz bath is comforting. Medical management consists of glyceryl trinitrate, it is a vasodilator and smooth muscle relaxant. It releases nitric oxide which is an inhibitory neurotransmitter. The drug is used as 0.2% cream applied locally to the anal canal BD or TDS for 6 to 8 weeks and applied to the anal canal which produces sufficient relaxation of the sphincter to allow the fissure to heal.

In addition, glyceryl trinitrate being a vasodilator improves blood flow to the area and this aids in healing. The main disadvantage is that it produces headache. Calcium channel blockers like diltiazem and nifedipine were tried. Botulinum toxin was also used because of side effects like flatus incontinence, muscle weakness and increase in residual urine it has been abandoned. The aim of surgical treatment is to modify the function of the internal sphincter so that it cannot go into spasm and to increase the diameter of the anal canal so that it offers less resistance to passage of stools. Among the surgical methods sphincter stretch, lateral anal sphincterotomy-open method and closed methods are being practiced. The sphincterotomy is the surgery of choice performed laterally. In this the full thickness of the muscle is divided under local or general anesthesia. This procedure is called closed subcutaneous lateral anal sphincterotomy. There is a little post-operative discomfort and wound heals quickly. Complications include haemorrhage, perianal abscess formation and loss of minor degree of sphincter control.

Aim of this study was to study the etiology and predisposing factors, age and sex distribution, clinical presentation, position of fissure, complications associated with medical and surgical management and comparison of efficacy of topical glyceryl trinitrate (0.2%) and lateral anal sphincterotomy.

METHODS

This study was based on the analysis of 60 patients who were treated for chronic fissure in ano at Malla Reddy Institute of Medical Sciences, Hyderabad from January 2018 to February 2020. 30 of them were treated surgically and 30 patients received glyceryl trinitrate. Cases were selected randomly.

Inclusion criteria

Inclusion criteria of this study was all patients with chronic fissure in ano aged ≥ 14 years.

Exclusion criteria

Exclusion criteria were patients < 14 years age, patients with acute anal fissures, patients who had previous anal surgeries, local cancers, and sexually transmitted diseases.

For all these patient's clinical examination and routine investigations were carried out. Thorough general physical examination and digital rectal examination was done. Proctoscopy was done in all cases. Patients for medical management were put on 0.2% glyceryl trinitrate which was applied topically in the perianal region twice daily for 8 weeks. They were also advised high fibre diet, adequate hydration and antibiotics. All patients were advised sitz bath twice daily. Patients who were on surgical management were treated by lateral anal sphincterotomy. Post-operatively they were advised sitz bath twice daily, high fibre diet and adequate hydration and antibiotics were given for 5 days. Patients were discharged on the 5th day. Patients were asked to follow-up in outpatient every week for one month and once every month for 2 months.

Statistical analysis

Data was analysed with statistical package for the social sciences 13.0 software.

RESULTS

Of the 60 cases 37 were males (61.6%) and 23 were females (38.4%).

Table 1: Age wise distribution of cases.

Age group (years)	Number of cases	Percentage
12-20	3	5
21-30	13	21.6
31-40	14	23.4
41-50	24	40
51-60	6	10
Total	60	100

Male and female cases were seen maximum in the age group of 41 to 50 years.

Out of 60 patients 52 had pain during defecation (86.6%). 4 patients (6.6%) had bleeding per rectum and 9 (15%) of them had both. Most of the patients 43 patients (71.6%) had sentinel pile.

In the etiology 49 of 60 patients had constipation, where 5 of the patients were post-delivery, 2 of the patients had inflammatory bowel disease and 4 of them had history of laxative abuse.

Out of 60 patients 53 (88.3%) had fissure in posterior location while 5 of them (5.33%) had anterior fissure.

Table 2: Location of fissure.

Location	Number of cases	Percentage
Posterior	53	88.3
Anterior	5	5.33
Both	2	3.33
Total	60	100

Those treated with glyceryl trinitrate 23 patients (76.6%) out of 30 had relief of symptoms. No relief was seen in 7 patients. Of the 30 cases managed medically 8 patients (26.6%) suffered from headache. None of these patients had flushing/dizziness. Those treated surgically 27 patients (90%) had total relief of symptoms. In 4 cases (13.33%) patients had pain following surgery, one developed seroma and two had haemorrhage although symptoms were temporary. 3 of the 23 patients who were symptom free following medical management had recurrence of symptoms in the follow-up. All the symptom free patients following surgery had no recurrence of symptoms. As per this study, surgical management showed more efficacy in treatment of chronic fissure in ano (86.8%) compared to medical management (66.6%).

Table 3: Outcome of surgical management.

Relief of symptoms	Number of cases	Percentage
Present	27	90
Absent	3	10
Total	30	100

DISCUSSION

The present study was undertaken in the department of general surgery Malla Reddy Institute of Medical Sciences, Hyderabad from January 2018 to February 2020 and the total number of patients studied were 60. The results were analysed and compared with the statistics available from India and other authors of the world

In the present study 37 patients were male and 23 patients were female and there is more predilection for males. This is comparable to the studies done by Yetisir et al, Reddy et al and Tauro et al.¹²⁻¹⁴

In this study common age group affected was 40 to 50 years and the study done by Yetisir et al, Reddy et al their age group affected was 30 to 40 years.^{12,13}

Most common location was posterior (53) followed by anterior (5) and both (2). This was comparable with other studies.

Presence of sentinel pile indicates chronic fissure. In the present study 71.6% had sentinel pile. In the study conducted by Yetisir et al the incidence is almost similar (70%).¹³

In the present study 26.6% cases developed headache following medical management. In the study by Tauro et al incidence of headache was 20%.¹⁴ In the study by Reddy et al it was 11.76%.¹²

Post-operative pain was noticed in 33.33% of cases in the present study, haemorrhage in 6.66% and seroma in 3.33%. In the study conducted by Ananadaravi et al pain is seen in 14% patients, haemorrhage in 20% patients and seroma in 2% patients.¹⁵

In the present study relief of symptoms is seen in 66.66% of patients managed by topical glyceryl trinitrate, while in cases managed by lateral anal sphincterotomy relief of symptoms was seen in 86.6% cases. In the study conducted by Tauro et al relief of symptoms is seen in 86.7% of patients managed by topical glyceryl trinitrate while with lateral anal sphincterotomy it was 100%.¹⁴ In the study conducted by Yetisir et al relief of symptoms in patients managed by topical glyceryl trinitrate is 89.1% while in cases managed by lateral anal sphincterotomy relief of symptoms was seen in 94.6%.¹³

There was no relief of symptoms in 33.33% of cases managed by topical glyceryl trinitrate, no relief of symptoms seen in 13.33% cases managed by surgery. Other studies results are comparable.

CONCLUSION

It can be concluded that open lateral anal sphincterotomy is superior to 0.2% glyceryl trinitrate application in terms of treatment of chronic anal fissure with good symptomatic relief, high rate of healing and with very low rate of complications. Medical management of treatment with glyceryl trinitrate may be a good option for initial control of symptoms in patients not willing for surgery.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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