

Original Research Article

A comparative study of bilateral lsias verses conservative management in acute anal fissure

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ABSTRACT

Background: Anal fissure is a tear in anal canal just below dentate line. It can be acute or chronic. In most patients, it is located in posterior midline. Its treatment is both conservative and surgical. In conservative management, there are no clear guidelines and its goal is to break the cycle of anal sphincter spasm allowing improved blood flow to fissured area for healing. Surgery is considered for patients not responding to conservative measures and its gold standard is lateral internal sphincterotomy.

Methods: This prospective study was conducted among 60 patients with acute anal fissure. Patients were randomly divided into two study groups based on treatment protocols conservative management and Bilateral LSIAS. Prior informed written consent was obtained. Demographic profile, history, investigations, diagnosis, treatment and follow-up data was recorded and analyzed.

Results: Patients with Bilateral LSIAS got pain relief immediately after surgery. 57% patients with conservative management reported head-ache and perianal itching. Over 86% of patients with Bilateral LSIAS got relief from pain and discomfort after treatment; around over 46% patients with conservative approach, had pain and discomfort after 6 weeks of treatment.

Conclusions: Results show that Bilateral LSIAS surgery is a better approach than conservative management of anal fissure. Further, the Bilateral LSIAS surgery has maximum chances of early recovery and pain relief and reduced chances of progression to chronic anal fissure. Hence, we can conclude that for anal acute fissure, Bilateral LSIAS surgery procedure is the treatment of choice.

Keywords: Anal fissure, LSIAS, Sphincterotomy

INTRODUCTION

Anal fissure is a tear (linear/oval shaped) in the anal canal which generally starts just below the dentate line and extends to the anal verge (Figure 1). Anal fissures may be acute or chronic. Acute fissures are a shallow tear in the anoderm and their symptoms include anal pain, spasm, bleeding with defecation. The pathophysiology of anal fissures is not entirely known. It is apparent that an acute injury results in local pain and spasm of internal anal sphincter. This spasm along with the high resting anal

sphincter pressure leads to reduced blood flow and ischaemia and poor healing.¹ Until this cycle is broken, the fissure will persist (Figure 2).^{2,3}

Around 90% of patients, have the anal fissure located in the posterior midline. It is hypothesised that because this portion of the anal canal is poorly perfused, the predilection for the posterior midline may occur.^{3,4} Anterior anal fissures affect remaining 10% of patients and may have a different pathophysiology. Anterior anal fissures are associated with younger age group, mainly

female patients and patients with injury or dysfunction of the external anal sphincter. In less than 1% of patients the fissures are lateral or multiple.⁵ Irrespective of these differences, both posterior and anterior anal fissures are believed to be of primary aetiology; whereas lateral or multiple fissures are more likely to be of secondary in nature.⁵ The treatment of anal fissures is both conservative as well as surgical. An acute anal fissure usually heals within 4 to 8 weeks of conservative treatment. If conservative treatment fails and the fissure becomes chronic, surgery is usually needed.⁵⁻⁷

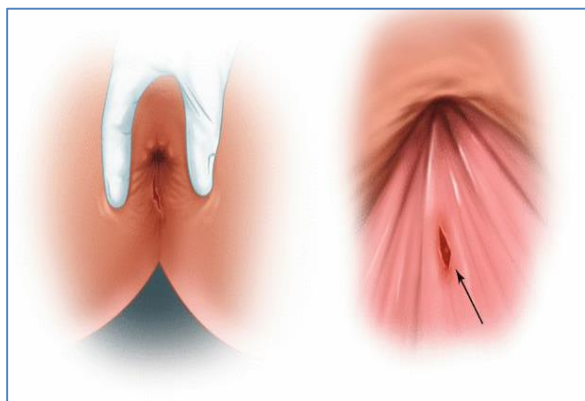


Figure 1: Anal fissure.

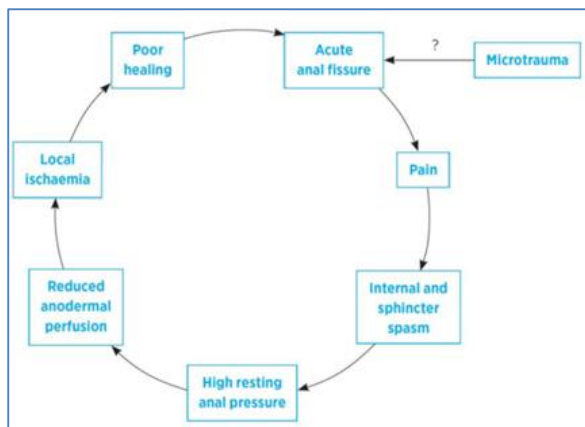


Figure 2: Pathophysiology of anal fissure.⁶

In conservative management, there are no clear guidelines on the management of anal fissure. The goal of conservative management is to break the cycle of anal sphincter spasm in order to allow improved blood flow to the fissured area so as to allow healing to occur. Almost half of the patients with acute anal fissures will heal with conservative measures alone, involving only increased fibre intake (psyllium) and warm bathing of the perineum (sitz baths).^{7,8} It is hypothesised that warm baths lead to relaxation of the internal anal sphincter via a somatoanal reflex.⁹ Surgery is considered for patients who do not respond to the conservative treatment. Although the timing of surgery is individual and variable, literature suggests it to be between 4 and 12 weeks (6 to 8 weeks may be ideal) after start of the conservative treatment

considering the recommended duration of some topical dosing regimens. The gold standard surgical procedure for anal fissure is lateral internal sphincterotomy. It involves division of the internal anal sphincter from its distal end to the proximal end of the fissure or to the dentate line, whichever comes first. Healing rate of Lateral internal sphincterotomy is excellent (approximately 95%). Common complications include recurrence (6%) and incontinence of flatus or stool (17%).¹⁰

Brodie was the first person to perform an anal sphincterotomy in 1839. He advocated the operation for “preternatural contraction of the anal sphincter.” In 1863, Hilton also recommended that the treatment for anal ulcer should be sphincterotomy. Nevertheless, Miles is usually credited as the surgeon who gave the operation real credence, although Miles believed that he was dividing what he called “the pecten band.”^{11,12} In 1951, Eisenhammer was the first person to advocate internal anal sphincterotomy for anal fissure.¹³ This technique, over a period of time, started to be known as lateral subcutaneous internal anal sphincterotomy (LSIAS). LSIAS is basically an internal anal sphincter neutralising attenuating or just “sphincter weakening procedure”. The incidence of persistent symptoms after posterior sphincterotomy was as low as 08% and the incidence of persistent symptoms after anal stretch was around 28%. With regards to the rates of persistence or recurrence after sphincterotomy, the literature suggests that such rates are lower than 10%. The recurrence and persistence of anal pain and spasm after lateral internal sphincterotomy is mainly due to incomplete division of internal anal sphincter. This may be resolved if taken up for completion of Internal anal sphincterotomy or by doing bilateral LSIAS at 03 and 09 ‘O’ clock. This study aimed to compare conservative management, and bilateral LSIAS surgery in the management of acute anal fissure.

METHODS

This prospective study was conducted among all patients presenting to the SGT hospital with acute anal fissure during August 2020 to March 2021. A total of 60 patients with anal fissure were included in the study. Two study groups i.e., conservative management and Bilateral LSIAS surgery were formed. An equal distribution of patients was done randomly between the conservative management and bilateral LSIAS surgery and each group comprised of 30 patients each. Conservative management was given by applying 2% diltiazem ointment topically over the perianal region twice daily for 6 weeks.

Bilateral LSIAS surgery was performed in below steps. Step 1: After administration of spinal anaesthesia per rectal examination and proctoscopy was done on operation table to rule out any underlying hidden pathology and anal stenosis. Step 2: Park’s anal retractor was inserted, internal sphincter was stretched and made easily palpable. Internal sphincter was held at 3 ‘O’ clock

position and cautery was applied to give incision and dissect through groove to ensure bloodless field. Same process was repeated to give one incision at 9 `O` clock position on the internal sphincter. Step 3: The wound was cleaned with Betadine thoroughly, hemostasis achieved and anal pack with medicated paraffin gauze applied which was removed same day evening. Step 4: Antibiotics for five days and normal diet from next day were given. Patients were discharged next day with advice of local wound care and anal candle dilatation. Patients in both the groups were prescribed to take stool softeners and husk isabgol and do sitz bath three times a day for next 1 month. A high fibre diet was encouraged and patients were followed up in outpatient department every week. There was no lapse in follow-ups and every patient was followed up every week for 6 weeks post treatment. During the follow-ups, pain and perianal discomfort was the main symptom concentrated upon. In addition, few other parameters were also enquired for i.e. adequate relaxation during defecation, post defecation pain and sense of constant spasm in anal canal. In addition, they were enquired for requirement of taking rest from work due to symptoms of fissure, relief from symptom of discomfort post defecation, sense of constant tightness and spasm in anal canal. A composite indexing/grading for all the symptoms was considered while evaluating relief of symptoms.

Inclusion criteria

All patients of acute anal fissure who presented to OPD with pain and spasm, patients who were fit to undergo SA/GA for the procedure of bilateral LSIAS and patients who consented for their participation into study were included.

Exclusion criteria

All pregnant patients, all paediatric patients and who were unfit to undergo SA/GA, patients with comorbidities and patients who did not consent for their participation into this study were excluded.

Statistical analysis

Entire study data and observations were entered in electronic medium and analysed using Microsoft Excel and SPSS v.20 package.

RESULTS

Both the study groups had equal number of participants i.e. 30 each. Out of the 60 participants 33 were male. Females were observed to have more inclination towards the conservative management, possibly due to the phobia of hospitalization and fear of leaving the children at home, as appeared during the discussion while taking consent for the study. Patients with conservative approach were slightly younger (median age 38 years) than the ones underwent bilateral LSIAS surgery (median

age 41 years) and the mean duration of symptoms was 2.5 weeks for both the study groups.

Table 1: Profile of study participants.

Profiling factors	Conservative	B-LSIAS
Number of patients	30	30
Male:female	14:16	19:11
Median age (years)	38	41
Mean duration of symptoms (weeks)	2.5	2.5
Follow up time (weeks)	6	6

Table 1: Treatment results.

Results	Conservative	B-LSIAS
No. of patients	30	30
Immediate pain relief	18	30
Complications	17	0
Hospitalization >3 days	0	2
Median healing time (weeks)	4	3
Pain and discomfort during and after treatment (scale of 1-10; 1-no pain, 10-extreme pain)		
Score of 1-3	13	26
Score of 4-7	3	2
Score of 8-10	14	2
Symptomatic		
within 1 month	16	2
1-3 month	15	1
4-6 month	16	1
Reoccurrence after 6 months	20	2
Mean number of days off work	5	3.5

It was observed that all of the patients, who have undergone bilateral LSIAS, have been relieved of their pain immediately after the surgical treatment. While there were 12 out of 30 (40%) patients with conservative management who still experienced pain after the onset of their conservative management (i.e. on day 1 of their treatment). Moreover, complications like head ache, perianal itching was observed among 17 out of 30 (57%) patients who underwent conservative management. However, none of the patients with bilateral LSIAS surgery experienced any such issue or any other complication post-surgery. There were only 2 out of 30 patients, treated with bilateral LSIAS, who had to be hospitalised for more than 3 days.

Patients treated with Bilateral LSIAS took comparatively lesser time to heal (around 3 weeks) than the patients undergoing conservative management who took around 4 weeks' time to heal. Information on pain and discomfort was recorded both at the time of the treatment as well as during the follow-ups. Levels of pain and discomfort were recorded (on a scale of 1-10) considering various

aspects like during defecation, post defecation, while sitting, while standing or walking. For analysis purpose, a composite score for pain and relief was calculated taking into account all these aspects. Data from the study suggests that over 86% of the patients with bilateral LSIAS got relief from the pain and discomfort after the treatment, while such proportion of patients was almost half among those who had conservative management for treatment of acute anal fissure. Around half of the patients (over 46%) treated with conservative approach, continue to have pain and discomfort even after 6 weeks of the treatment, while such proportion was less than 7% among those who underwent bilateral LSIAS. The symptomatic relief was measured on the basis of pain relief during defecation, post defecation sense of spasm, difficulty is doing sitting work and feeling of incomplete defecation. Patient reporting presence of any of these symptoms was considered symptomatic under this study. Study revealed that around 50% of the patients treated with conservative approach continued to be symptomatic even till 6 months of the treatment, as compared to just under 7% of the patients treated with bilateral LSIAS surgery. Recurrence levels were fairly higher among the patients undergoing conservative management, as 2 out of every 3 such patients reported recurrence. While in case of patients treated with bilateral LSIAS surgery, the recurrence rate was as low as 7%. Average number of days lost for work was comparatively higher among patients treated with conservative approach (i.e., 5 days) than those who underwent bilateral LSIAS (3.5 days).

DISCUSSION

Anal fissure is a common cause of severe anal pain. Constipation and hard stools have been thought to be the important initiating factors of anal fissure. Hypertonia and spasm of the internal anal sphincter are considered to be the chief pathology in acute fissures. Acute anal fissure is fairly common entity found amongst Indian population and the trend is increasing recently due to changed dietary habits. It is also seen more amongst post-natal females, executive professionals, anxious personalities. Disturbed bowel habits are taken as a stigma by a large number of people. In addition to the dietary preferences and other health conditions acute anal fissure is also related with individual personality.¹⁴

Chronic anal fissures are associated with internal anal sphincter hypertonia. The reduction of this hypertonia improves the local blood supply, thus encouraging the fissure healing. A sharp anal pain during defecation, which is associated with the passage of bright red blood per rectum, is the classical feature of anal fissures.¹⁵ The pain may be so severe, especially in acute fissures, that the patients may postpone the defecation for days together until it becomes inevitable.¹⁶ This leads to hardening of the stools, which further worsens the condition. The fissures can be acute or chronic. Acute fissures have a shorter duration (less than a month) and they have fresh mucosal edges.¹⁵ They usually resolve

with the use of simple measures like a high fibre diet, adequate water intake, and warm sitz baths.¹⁵ The chronic anal fissures usually do not heal with simple conservative measures.¹⁶ They are most commonly treated surgically by lateral internal anal sphincterotomy, which lowers the resting anal pressure and heals them in more than 90% of the cases.^{16,17}

Our study data supports the previous studies' results in terms of pain relief, recurrence rates, satisfaction and healing of the patients. Conservative management may heal most of the anal fissures without surgical interventions. However, when chronic anal fissure develops, healing is difficult to achieve through conservative management and recurrence rates considerably higher. This is where the surgical intervention becomes necessary to provide immediate pain relief and to treat the chronic anal fissure. In India, surgery is generally considered for patients who do not respond to the conservative measures. Studies suggest the timing of surgery between 4 to 12 weeks (preferably between 6 to 8 weeks) after start of the conservative management of acute anal fissure, considering the recommended duration of dosing regimen. The gold standard surgical operation for anal fissure is lateral internal sphincterotomy. Several studies suggest that the recurrence after sphincterotomy were below 10%. Recurrence was primarily due to incomplete division of Internal anal sphincter, which is resolved by doing bilateral LSIAS at 03 and 09 'o' clock. In conservative management, the patient has to remain in pain for long duration of time, has to follow a strict control on the dietary intake, has to comply with supportive & treatment protocols, which is not an easy task for both the working population as well as the home makers. Hence, with bilateral LSIAS surgery, the patient can be relieved with pain immediately, and can lead a normal and happy life within 3-4 days post-surgery.

Limitations

Since the study involved a smaller sample size, the findings cannot be (statistically) extrapolated to the general population. For doing so, it is recommended further study with a fairly larger (and statistically valid) sample size to strengthen these findings.

CONCLUSION

Study findings demonstrate that the bilateral LSIAS surgery is better than the conservative management of anal fissure in terms of pain relief and recurrence rates. With this study, it is safe to conclude that Bilateral LSIAS surgery yields in maximum chances of early recovery and pain relief, decrease in loss of man days (work days), better quality of life (without pain and discomfort) and most importantly reduced chances of progression to chronic anal fissure. At the same time, it does not rule out the role of the conservative management, which is found to have worked well with

around 50% of the patients, however, recurrence rates were considerably higher (i.e., 66%) for the patients treated with conservative approach. Anal fissure is a common problem of today's time and it causes considerable impact on the quality of life. Thus, its appropriate treatment is mandatory. Hence, we conclude from this study that for patients with anal fissure, the bilateral LSIAS surgery procedure is the treatment of choice over the conservative management.

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

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