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Posterolateral Internal Sphincterotomy as a Novel Technique for Treatment of Chronic Fissure in Ano with Large Skin Tags: An Experience of 50 Cases

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Abstract

Introduction: Fissure in ano is a common benign anorectal condition affecting individuals of all age groups. The gold standard treatment for fissure in ano is lateral internal sphincterotomy with excision of the skin tag if necessary. In this study, we performed a sphincterotomy at the posterolateral 5 o' clock position under vision using the same incision taken to excise the skin tag and primarily closing the wound. The patients were then evaluated based on various variables like incontinence, pain, wound healing and duration of hospital stay.

Methods: 50 patients were selected as per the inclusion criteria and included in our study. Written informed consent was taken from every patient. Posterolateral internal sphincterotomy was performed for every patient with excision of skin tag through one incision. Patients were discharged from the hospital the next day and followed up at 2 weeks, 6 weeks post operatively and then for upto 6 months and the results were noted.

Results: Patients had a low post operative pain score and low average duration of hospital stay. Incontinence rates were comparable to lateral internal sphincterotomy, and no patient had complete incontinence to stool. There was zero incidence of keyhole deformity and also a low incidence of wound breakdown which has been further described in the study.

Conclusion - To conclude, PLIS is a safe and effective method for treatment of chronic Fissure-in-ano which is easy to perform. PLIS is, however, a new technique with less research available and it would benefit from a study with a larger sample size.

Keywords: ***Fissure; Sphincterotomy; Pain; Incontinence; Skin tags; Posterolateral***

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1. Abbreviations

PLIS: Posterolateral internal sphincterotomy; LIS: Lateral internal sphincterotomy; VAS: visual analog scale

2. Introduction

Fissure in ano is a common benign anorectal condition affecting individuals of all age groups [1]. It is characterized by a linear ulcer in the lower anoderm reaching the dentate line. It was first described in 1934 by Lockhart-Mummery and globally represents about 10%-15% of proctological consultations across all races [2]. It is caused by passage of hard formed stools per rectally. These hard stools cause a cut in the anoderm leading to painful defecation. The patients complain of moderate to severe pain in passing stools that is relieved in a few hours [3]. There is also spasm of the exposed internal sphincter [4] that leads to further constipation and aggravation of the condition. This hypertonicity of the anal sphincter leads to compression of local vessels and subsequent ischemia which adversely affects healing of the wound [5]. This vicious cycle of constant straining leads to chronicity of anal fissure in almost 40% patients. This is characterised by formation of skin tags also called sentinel tags around the anal canal that keep growing over time to form large skin tags.

Treatment of chronic fissure in ano is mainly surgical. The gold standard treatment for fissure in ano is lateral internal sphincterotomy with excision of the skin tag if necessary [6,7]. This involves a blind closed sphincterotomy and a second wound at the site of sentinel tag excision. Posterior internal sphincterotomy at 6 o' clock position at the base of the fissure also practiced earlier has a higher incidence of keyhole deformity and fecal incontinence. Other methods of management are botulinum toxin injection or controlled balloon dilatation of the internal sphincter under general anaesthesia. Lord's dilation was a practice used in the olden days but is now disapproved due to high incidence of incontinence resulting from vigorous uncontrolled stretching of the muscle.

In this study, we performed a sphincterotomy at the posterolateral 5 o' clock position under vision using the same incision taken to excise the skin tag and primarily closing the wound. The patients were then evaluated based on various variables like incontinence, pain, wound healing, and duration of hospital stay.

3. Aims and Objectives

Aim: To assess the efficacy and safety of posterolateral internal sphincterotomy with primary closure and demonstrate shorter healing time with less pain and no incontinence as associated with keyhole in patients of fissure in ano with large skin tags requiring excision.

3.1 Objectives

1) to determine the number of keyhole deformities in patients operated with PLIS for fissure in ano with large skin tags through a single incision.
2) to determine the incidence of incontinence in these patients.

3) to assess the post op pain using VAS in immediate post op period and on 1 week 2 week 4 week and delayed follow up period and time to wound healing.

4. Materials and Methods

Study Design - Observational Study
Sample Size - 50
Sampling technique - random sampling
Sampling unit - individual was the sampling unit.

4.1 Inclusion criteria

1. Patients admitted to our tertiary care centre with chronic fissure in ano and large skin tags.
2. Patients treated with posterolateral sphincterotomy at 5 o' clock position.

4.2 Exclusion criteria

1. Patients of fissure in ano without skin tags or acute fissure in ano.
2. Patients treated with other methods of management of fissure in ano.
3. Patients refusing to participate in the study.

4.3 Methods of data collection

50 patients were selected as per the inclusion criteria and included in our study. Written informed consent was taken from every patient. Posterolateral internal sphincterotomy was performed for every patient with excision of skin tag through one incision by following steps:

1. Midline vertical incision taken over the large skin tag and deepened to expose the sphincter.
2. Tag excised and submucosal plane dissected slightly laterally to the 5-o' clock position.
3. Sphincter hooked using a mixter forceps and divided under vision to achieve controlled relaxation of the anal canal.
4. Wound closed primarily using absorbable suture.

Patients were discharged from the hospital the next day and followed up at 2 weeks, 6 weeks post operatively and then for up to 6 months and the results were noted.

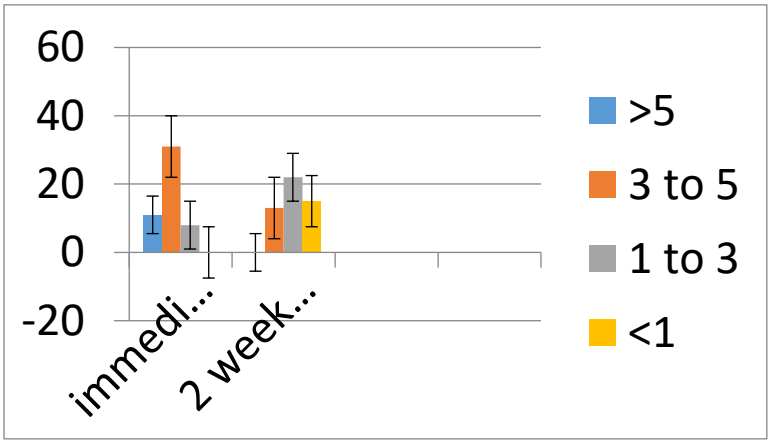
Ethics committee approval was obtained from institutional ethics committee.

5. Results

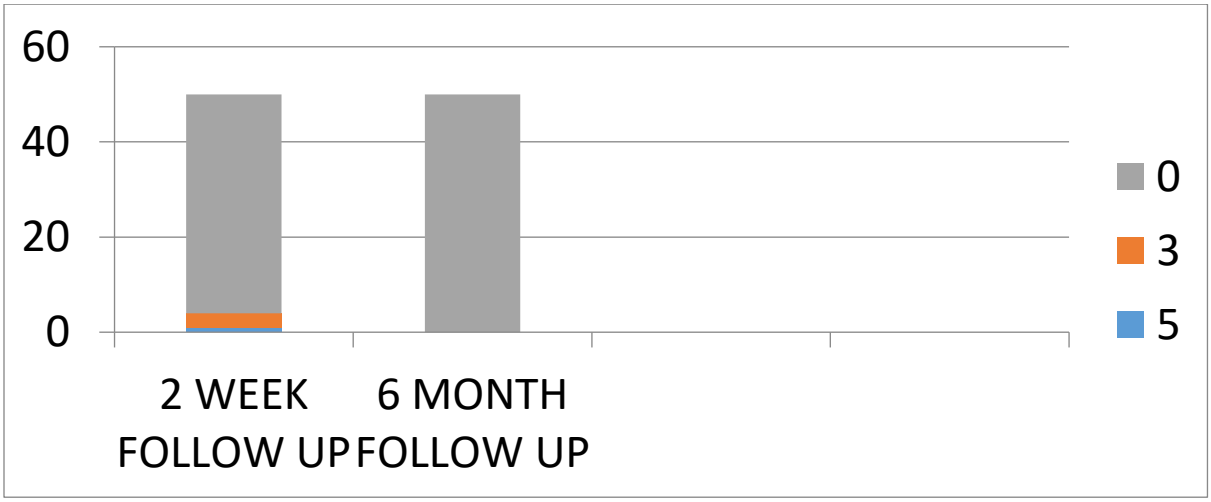
The study population included 50 patients with 22 males and 28 females. The age group of the population was 19-52 years with a mean age of 31. 7 patients had a history of diabetes mellitus, and 6 patients had a history of smoking.

The variables evaluated in the post operative period were pain score using the VAS at immediate post op and 2 weeks post op period, fecal incontinence using the wexner's score and duration of hospital stay.

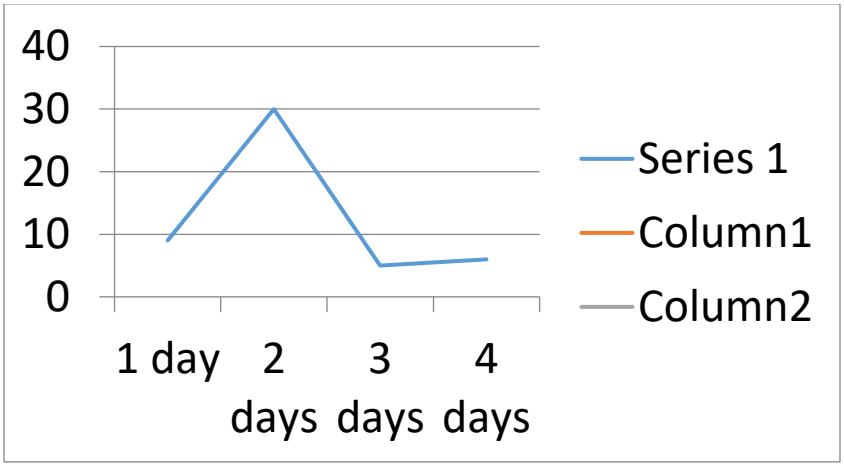
1. POST OP PAIN SCORE - According to the VAS for post operative pain, in the immediate post op period, 11 patients had pain score of 5 or more (22%) with 31 patients having a score of 3-5(62%) and 8 patients reporting pain score of less than 3(16%). On the 2 week follow up period, only 13 patients reported to have a pain score of more than 3(26%) with 22 patients reporting a pain score of 1-3 (44%) and 15 patients reporting a score 0-1 with very mild pain only during defecation not requiring any analgesics (30%).



2. WEXNER'S SCORE FOR INCONTINENCE - According to the wexners scoring where 0 is perfect continence and 20 is complete incontinence, at 2 week follow up 3 patients had mild urgency with a wexner score of 3 each and 1 patient had mild incontinence to flatus with wexner score of 5. None of these patients reported any of these complaints in the 6 month follow-up period. Also, there was no incidence of recurrence of initial presenting complaints in the 3-6 month follow up period.



3. DURATION OF HOSPITAL STAY - Average Duration of hospital stay was 2 days with 6 patients requiring a hospital stay of 4 days mainly due to pain, 5 patients requiring a stay of 3 days, 30 patients going home in 2 days and 9 patients had a stay of 1 day.



4. The incidence of keyhole deformity in all 50 patients during the period of our study was nil.
5. There was an incidence of wound dehiscence and breakdown of the suture line in 3 out of 50 patients. However, this did not affect the long-term prognosis and the wounds healed well by secondary intention.

6. Discussion

Fissure in ano is a frequently encountered anorectal condition is everyday general surgical practice. It can be broadly classified as acute or chronic fissure in ano. There are many techniques for treatment of fissures in ano. The principle of treatment involves relieving the spasm of the internal sphincter and avoiding constipation. There are medical and surgical techniques for treatment. Recently, less invasive methods of treatment have been explored. Topical nitrates, calcium channel blockers and botulinum toxin are established treatments [5]. Anal fissure can be managed non-surgically most of the times with the use of topical calcium channel blockers and lignocaine. This is preferred over using nitroglycerin [8]. However, as yet there is no proven non-surgical treatment for chronic fissure [9]. Internal lateral anal sphincterotomy was first introduced in 1951, by Eisenhammer. The procedure provides prompt symptomatic relief by reducing pathologically elevated pressures within the anal canal. The procedure has provided greater than 95% cure rate at 3 weeks post-procedure. Currently, it is considered the gold standard surgical intervention [2]. Lateral Internal Sphincterotomy can be performed by either open or closed method. In the open method, the sphincter is divided under vision by an incision taken at 3 o' clock position external to the anal canal. In the closed technique, the sphincter is divided submucosally but not under vision [6]. When a patient has a large skin tag requiring excision, the open method leads to 2 separate incisions and consequently, longer healing time. In contrast, in the closed method, there is not as much control in dividing the sphincter and it can lead to non-resolution of symptoms or incontinence. Incontinence has always been the most dreaded complication of any surgery for fissure in ano. Posterior internal sphincterotomy at 6 o' clock was advocated for chronic fissure in ano in olden days, due to good resolution of symptoms but it has shown to have higher incidence of incontinence of incontinence associated with keyhole deformity [19]. Smoking and

diabetes are risk factors for fecal incontinence as was reported in Townsend et al.'s study in 2013 [8,11]. Our study, however, didn't show any clinically significant relation between smoking and diabetes with incontinence. As per the study by Al-Ubaide AF et al the incontinence rates in lateral internal sphincterotomy were 3%. However, in our study we had only 2% incidence of mild flatus incontinence [7]. In the study by Mohammed Alawady et al. the incidence of fecal incontinence in PLIS was 2 out of 40 which is comparable to our study [12]. It also showed a lower post operative pain score at 1 month compared to lateral internal sphincterotomy and significantly shorted duration of wound healing. Nelson Rl et al. performed a meta-analysis comparing 148 eligible trials and describing 14 different surgical techniques, however PLIS was not described in the study as it is a novel technique and only 1 established trial has been noted paving way for extensive research in the topic of PLIS [13]. Another meta-analysis published in 2005 and updated in 2022 by Nelson Rl et al. comparing operative techniques for fissure in ano stated LIS as the best treatment but did not include PLIS in the study [14]. As described by Jorge JMN et al. we used the Wexner's score for testing the grade of incontinence in the study [15]. Coming to duration of hospital stay, we had an average duration of 2.04 days wherein the patient was discharged immediately on the next day of the surgery. The average time to complete healing in our study was 4 weeks which was comparable to the trial performed by alawady et al [4]. As per the studies by Kang GS et al. and Aysan E et al. there was no significant difference in wound healing and complications whether the wound was primarily sutured or not [17,18]. In our study we found a very small number of suture line breakdowns and also that was unrelated to long term wound healing time thus signifying that it is safe to primarily close the wound and also helps in reducing the post operative pain. None of the patients in our study presented with a keyhole deformity as this was one of the major limiting factors of a posterior internal sphincterotomy at 6 o' clock position. Since keyhole deformity was one of the factors why sphincterotomy at 5 o' clock position was avoided, this study helps us show that it is a safe method and should be advocated in patients requiring skin tag excision.

7. Conclusion

To conclude, PLIS is a safe and effective method for treatment of chronic Fissure-in-ano which is easy to perform. It also has shown quicker wound healing and shorter time to recovery as compared to other traditional techniques. The incidence of incontinence was similar to lateral internal sphincterotomy, and the occurrence of a keyhole deformity was nil. PLIS is, however, a new technique with less research available and it would benefit from a study with a larger sample size.

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