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ORIGINAL ARTICLE

Comparison of Outcomes in Lateral Sphincterotomy and Anal Advancement Flap in the Treatment of Chronic Anal Fissure

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ABSTRACT

Aim: For the comparison of outcomes in lateral sphincterotomy and anal advancement flap in the treatment of chronic anal fissure.

Study Design: Randomized clinical trial

Place and Duration of Study: Jinnah Hospital, Lahore from 1st April 2021 to 31st March 2022.

Methodology: One hundred patients of age >15 years were enrolled. Patients were defined as preoperative according to the definition of chronic anal fissure. Patients were divided into two groups, 50 patients in each group. The first group underwent lateral sphincterotomy while the second group was operated through anal advanced flap procedure. The wound infection was observed on day third as a post-operative protocol. Anal incontinence was determined post 3 months of surgery by any procedure conducted. Vaizey-scoring was used for determining anal incontinence.

Results: The mean age of the patients was 39.5±4.7 years in lateral sphincterotomy group while it was 38.9±5.1 year in anal advanced flap. The highest number of cases was reported between the age group of 15-35 years within both operative procedures. The fissure healing was observed in 88% of lateral sphincterotomy group which lower than the observed values of 96% in anal advanced flap group. The follow up data also showed an increased case of infection and anal incontinence in lateral sphincterotomy group when compared with anal advanced flap cases.

Conclusion: Anal advancement flap surgical method is considerably a better treatment method for the treatment of anal fissures.

Key words: Pharmacological interventions, Anal fissures, Constipation, Chronic, Sphincterotomy

INTRODUCTION

Anal condition is a painful and distressful condition which is related with uneasy and painful defecation and also causes rectal bleeding. On the basis of severity and condition, it often categorized into acute and chronic fissure. In acute fissure, radial split is caused in anoderm which extend from anal verge to dentate line to a variable distance. On the other hand, chronic fissures are those which gets difficult to treat and heal due to the formation of indurated ulcers. Various factors can lead to the formation of anal fissures including sphincter spasm, mechanical trauma, ischemia and chronic constipation. Statistical data show high prevalence rate of anal fissures from all the other anorectal sufferings which accounts for up to 30-40%. Its frequency appeared to be highest in chronic constipation people who pass dry and hard stool frequently.[1-5]

Treatment/management strategies include topical application of certain pharmacological agents, the sole purpose of which is to relax internal anal sphincter and reduce the level of pain and discomfort. These agents decrease spasm and vascular perfusion stimulates healing. Such topical agents include 2% diltiazem and 0.2% glyceryltrinitrate. If conservative management therapies fail to work, fissures can only be treated with the surgical approach especially in case of chronic fissure.[6,7] American society of rectal and colon surgeons suggests lateral internal sphincterotomy even without failure of pharmacological intervention. It remains as a gold standard for fissure management and showed high healing rates from 92-100% that can completely be recovered and healed without the period of two months.[8-10]

Another treatment method that can be employed for the management of anal fissure is anal advancement flap. It is considered as primary treatment and proved to be effective for recurrent/ chronic anal fissures. This treatment method includes rapid fissure healing, pain relieve with minor complications. Research proved that, anal advancement flap shows better results in terms of anal incontinence as compared to lateral sphincterotomy.[11,12] This study was designed to find out the better treatment plan for anal fissure treatment. A comparative study was designed for the determination of outcomes in lateral sphincterotomy and anal advancement flap in anal fissure treatment.

MATERIALS AND METHODS

This randomized clinical trial was conducted at Jinnah Hospital Lahore from 1st April 2021 to 31st March 2022. A total of 100 patients were enrolled after their complete clinical diagnosis of chronic anal fissure. The clinical symptoms were correlated with their physical presentation of the condition. Those patients who were suffering from perianal disease such as hemorrhoids, abscess, fistula and having 2-3 weeks' acute anal fissure or undergone previous surgical procedure for anal fissure were excluded from the research. The sample size was calculated as two proportions with P1 as 0 % and P2 as 7.5%. The study power was 80% with a margin of error as 5%. The age limit of the patient was taken as >15 years. Patients were defined as preoperative according to the definition of chronic anal fissure. This study was approved by review committee for ethical clearance prior sampling. Each patient's consent was taken before its enrolment as a study participant. The patients were randomly selected by computer generated numbers into two groups. The first group underwent lateral sphincterotomy as was termed as lateral sphincterotomy (LS) group (50 patients) while the second group was operated through anal advanced flap procedure and was termed as anal advanced flap (AFP) group (50 patients). Lateral sphincterotomy was performed under regional-anesthesia with lithotomic positioning under standard open technique. The wound infection was observed on day third as a post-operative protocol. Anal incontinence was determined post 3 months of surgery by any procedure conducted. Vaizey-scoring was used for determining anal incontinence. Any relevant symptoms of fever, erythema as redness around the wound 3-5 cm region, wound discharge or failure of the flap was documented as a follow-up outcome. Clinical history and demography of each patient were previously also documented on a well structured proforma. Data was analyzed by using SPSS-26, Chi square test and Stduent's 't' test was applied. P-value <0.05 was taken as significant.

RESULTS

The mean age of the patients was 39.5±4.7 years in LS group while it was 38.9±5.1 year in AFP. The highest number of cases was reported between the age group of 15-35 years within both operative procedures. Females underwent in higher frequency for anal fissure procedures than men with a percentage of 54% and 56% respectively. There was no significant difference in age and gender between both groups. Table 1

The LS group and AFP group patients were followed up to 22±12.5 and 20±12 months. The fissure healing was observed in 88% of LS group which lower than the observed values of 96% in AFP group. A significant variance was seen in symptoms resolution by LS as 72% verses AFP as 90%. Higher incidence of readmission was also seen in LS group (Table 2).

The follow up data also showed an increased case of infection and anal incontinence in LS group when compared with AFP cases (Fig. 1).

Table 1: Distribution of age and gender within LS and AFP cases

Variable	LS group (n=50)	AFP group (n=50)	P value
Age (years)			
15-35	29 (58%)	27 (54%)	0.55
36-55	18 (36%)	20 (40%)	
>55	3 (6%)	3 (6%)	
Gender			
Male	23 (46%)	22 (44%)	0.61
Female	27 (54%)	28 (56%)	0.59

Table 2: Comparison of outcomes within LS and AFP cases

Outcomes	LS group	AFP group	P value
Follow-up (months)	22±12.5	20±12	0.45
Fissure Healing	44 (88%)	48 (96%)	0.26
Symptoms resolution	36 (72%)	45 (90%)	0.04
Readmission	5 (10%)	2 (4%)	0.12

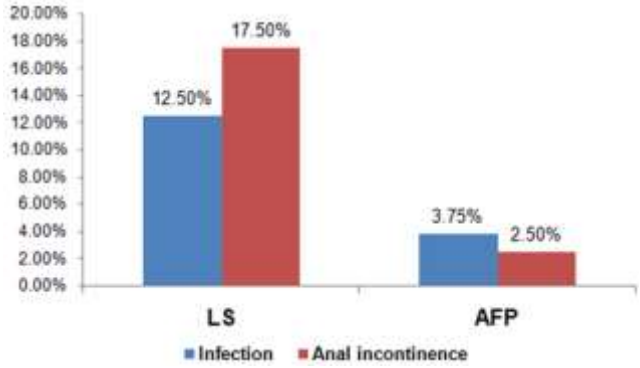

Fig. 1: Comparison of LS and AFP infection outcomes

DISCUSSION

Anal fissures are painful and distressful condition which often caused by chronic constipation. Various treatment and management strategies has been designed to cure this condition including both pharmacological interventions and surgical procedures, for getting long term benefits and relieve from pain surgical methods mostly used. Anal advancement flap is now considered as primary line treatment for recurrent anal fissures however, internal sphincterotomy is also a gold standard to relax anal sphincter.[13-15]

In the present study, mean age of the patients was 39.5±4.7 years in LS group while it was 38.9±5.1 year in AFP. Highest number of patients was observed between the age of 15 to 35 years. Females (56%) also appeared to be higher number who underwent anal fissure procedure as compared to the men (54%). Significant difference was not observed in terms of age and gender. Fissure healing was also lower in lateral sphincterotomy as compared to anal advancement flap group. Similarly, post-operative infections rate was also higher in LS group as compared to AFP group. Previous studies have also highlighted that, infections were higher sphincterotomy and almost minimal in AFP group.[16-18]

Recent studies have proved that, anal advancement flap is a better treatment method to treat anal fissure. This procedure does not involve anal sphincter disruption. This treatment is also beneficial for the patients who had secondary fissures due to any obstetrics trauma.[19,20] Results of present and previous studies suggests that, although lateral sphincterotomy is a good tool however, AFP show better and effective outcome.

CONCLUSION

Anal advancement flap surgical method is considerably a better treatment method for the treatment of anal fissures. Low post-operative infections rate was also observed anal fissure flap group as compared to lateral sphinecterotomy group.

REFERENCES

1. Villalba H, Villalba S, Abbas MA. Anal fissure: a common cause of anal pain. Perm J. 2007 Fall;11(4):62-5.
2. Jahnny B, Ashurst JV. Anal Fissures. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
3. De Nardi PD, Ortolano E, Radaelli G, Staudacher C. Comparison of glycerinetrinitrate and botulinum toxin-A for the treatment of chronic anal fissure: long-term results. *Dis Colon Rectum* 2006;49(4):427–32.
4. HegaziT, Soliman SS. Combined tailored lateral internal sphincterotomy with v-y advancement flap versus lateral internal sphincterotomy alone in the treatment of chronic anal fissure. Med J Cairo Univ 2013;81:959-6.
5. Dudhamal TS, Baghel MS, Bhuyan C, Gupta SK. Comparative study of Ksharasutra suturing and Lord's anal dilatation in the management of chronic fissure-in-ano. Ayu 2014;35(2):141-7.
6. Rahman SS, Mansoor SN. Effectiveness of glyceryl trinitrate in the treatment of chronic anal fissure. APMC 2011;2:106-10.
7. AltomareDF, Binda GA, Canuti V, Landolfi V, TrompettoM,Villani RD. The management of patients with primary chronic anal fissure: a position paper. Tech Coloproctol 2011;15:135-41.
8. Zaghiyan KN, Fleshner P. Anal fissure. Clin Colon Rectal Surg 2011;24: 22-30.
9. Patti R, Guercio G, TerritoV, Aiello P, Angelo GL, Davita G. Advancement flap in the management of chronic anal fissure: a prospective study. Updates Surg 2012;64:101-6.
10. Poh A, Tan KY, ChoenFS.Innovation in chronic anal fissure treatment. World J Gastrointest Surg 2010;27(2):231-41.
11. Madalinski MH. Identifying the best therapy for chronic anal fissure. World J Gastrointest Pharmacol Ther 2011;2:9.
12. Van Outryve M. Physiopathology of the anal fissure. Acta Chir Belg 2006;106:517-8.
13. Lysy J, Israeli E, Levy S. Long-term results of ‘‘chemical sphincterotomy’’ for chronic anal fissure: a prospective study. Dis Colon Rectum 2006;49(6):858-64.
14. Tranqui P, Trottier DC, Victor C, Freeman JB. Nonsurgical treatment of chronic anal fissure: nitroglycerin and dilatation versus nifedipine and botulinum toxin. Can J Surg 2006;49(1):41-5.
15. Khubchandani IT, Reed JF. Sequelae of internal sphincterotomy for chronic fissure in ano. Br J Surg 1989;76:431-4.
16. Mentes BB, IrkorucuO, Akin M. Comparison of botulinum toxin injection and lateral internal sphincterotomy for the treatment of chronic anal fissure. Dis Colon Rectum 2003;46(2):232-7.
17. Shao WJ, Zhang ZK. Systematic review and meta-analysis of randomized controlled trials comparing botulinum toxin injection with lateral internal sphincterotomy for chronic anal fissure. Int J Colorectal Dis 2009;24(9):995-1000.
18. Lysy J, Israeli E, Levy S. Long-term results of ‘‘chemical sphincterotomy’’ for chronic anal fissure: a prospective study. Dis Colon Rectum 2006;49(6):858-64.
19. PohA, Tan KY, Seow-Choen F. Innovations in chronic anal fissure treatment: a systematic review. World J Gastrointest Surg 2010;2:231.
20. Perry WB, Dykes SL, Buie WD. Practice parameters for the management of anal fissures (3rd revision). Dis Colon Rectum 2010;53:1110.