

Comparison of Outcome of Perianal Block versus Saddle Block in the Treatment of Anal Fissure at a Tertiary Care Hospital

Muhammad Aqib Riaz, Sajjad Ahmad Ansari, Sonia Khan*, Raheel Anjum, Afzal Saeed Awan, Saima Kanwal**

Department of General Surgery, Combined Military Hospital Multan/National University of Medical Sciences (NUMS) Pakistan, *Sir Ganga Ram Hospital, Lahore Pakistan, **Department of Obstetrics & Gynaecology, Khawaja Fareed Social Security Hospital, Multan Pakistan

ABSTRACT

Objective: To compare the outcome of Perianal block versus Saddle block in the treatment of anal fissure using lateral sphincterotomy procedure.

Study Design: Quasi-experimental study.

Place and Duration of Study: Combined Military Hospital, Multan Pakistan, from Jun 2022 to Mar 2023.

Methodology: The sample of 60 patients with anal fissures were randomly divided in two equal Groups (Group-A and B) by lottery method. Group-A patients underwent perianal block while Group-B patients received Saddle block. Both the Groups underwent lateral sphincterotomy procedure for the treatment of anal fissure. Pain assessment was done every hour for first 6 hours and then after 2 hours for the next 24 hours, and total pain-free period was defined as the mean time taken from administration of block till the time the patient required rescue analgesia (75 mg diclofenac sodium intramuscularly).

Results: Males were (38)63.3%, whereas (22)36.7% were females. Mean age of these patients was 36.73±9.19 years (range; 22–58 years), and (43)71.7% were aged up to 40 years. Mean time taken for rescue analgesia in Group-A was 288.17±58.13 minutes versus 117.50±18.18 minutes in Group-B ($p<0.001$).

Conclusion: Mean time taken for rescue analgesia was significantly higher in perianal block as compared with saddle block. Hence, the use of a perianal block reduces additional use of analgesic drugs.

Keywords: Anal Fissure, Perianal Block, Saddle Block.

How to Cite This Article: Riaz MA, Ansari SA, Khan S, Anjum R, Awan AS, Kanwal S. Comparison of Outcome of Perianal Block versus Saddle Block in the Treatment of Anal Fissure at a Tertiary Care Hospital. *Pak Armed Forces Med J* 2025; 75(2): 333-337.

DOI: <https://doi.org/10.51253/pafmj.v75i2.10909>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

An anal fissure is commonly encountered anorectal issue in surgical wards all over the world which is associated with severe pain with longitudinal tears in the anoderm distal to the dentate line.^{1,2} The patients presenting with anal fissure are generally diagnosed on their presentation of symptoms including severe pain while defecating along with rectal bleeding of varying amounts. Apart from severe pain, this disorder is also associated with high levels of emotional stress, which in turn results in a significant decline in patient's quality of life.³ Generally, more than 85% of anal fissures are placed in the posterior midline while very few cases are seen having anal fissures located anteriorly (i.e. 10–15%) and is more frequent in females.⁴ Treatment strategies are usually focused on reducing the pressure of internal sphincter muscles by using physical or chemical procedures, and treatment options may range from conservative medical management to

surgical interventions.⁵ The usual presentation is severe pain at the initiation of defecation that lasts for few hours afterwards.⁶ The pain is usually tearing or burning in nature. A few patients may complain of bleeding per rectum along with pain. Bleeding is usually small in amount, staining the stool surface or in the shape of drops after defecation; occasionally, it may be severe.⁷ On clinical examination, the fissure can usually be seen by gently parting the buttocks and everting the anal verge. Digital rectal examination and proctosigmoidoscopy are not recommended except under proper anaesthesia.^{8,9}

Surgical techniques employed for the management of anorectal issues may account for a high number of elective ambulatory surgeries, and these surgeries require deep anaesthesia owing to the fact that region involved is innervated by different types of nerves; hence, it may be termed as reflexogenic zone.¹⁰ Even though every method of anaesthesia has its own merits and limitations, saddle, lumbar, epidural, and caudal blocks are usually reported to be reliable for anorectal surgeries as these are regional anaesthetic methods which are believed to be well tolerated and highly effective.

Correspondence: Dr Sajjad Ahmad Ansari, Department of General Surgery, Combined Military Hospital, Multan Pakistan

Received: 17 Sep 2023; revision received: 25 Feb 2024; accepted: 29 Feb 2024

Recently, different studies have advocated the effectiveness and feasibility of the perianal block as a sole anaesthetic technique for anorectal surgeries particularly anal fissures. However, perianal block is not being widely accepted by patients with complaints of pain on injection. Furthermore, many surgeons are also hesitant to use it owing to the adequacy of relaxation under the block.

METHODOLOGY

This quasi-experimental study was conducted at the Department of General Surgery, Combined Military Hospital, Multan Pakistan, from June 2022 to March 2023 using simple random sampling technique. A total sample size of 60 patients was calculated with 30 patients in each Group using the WHO sample size calculator 7.4a with a total pain-free period in perianal block Group 287 ± 120 minutes and in saddle block Group 120 ± 38 minutes.¹¹

Inclusion Criteria: All patients with anal fissure (diagnosed on history i.e. pain on defecation and bright red blood on stool) of >6 weeks and failed medical treatment (assessed on history and medical record) of >1 month duration (assessed on history) of either sex, aged 20 – 60 years were included.

Exclusion Criteria: Patients with haemorrhoids, multiple anal fissures, perianal fistula, carcinoma anus, previous history of anorectal surgeries and those who were not willing to participate were excluded.

After obtaining permission from the ethical review committee, vide their certificate no. 13/2022 dated 1 April 2022, a total of 60 patients admitted to the Department of Surgery, Combined Military Hospital, Multan Pakistan, who fulfilled the inclusion/exclusion criteria, were selected. After informed, written consent, these patients were randomly divided into 2 equal groups by lottery method. All selected cases were offered to pick up a slip from total mixed-up slips, and he/she was placed in that respective Group. In Group-A patients having 30 patients with anal fissure underwent perianal block and in Group-B patients, also having 30 patients received Saddle block. Both the Groups underwent lateral sphincterotomy procedure for the treatment of anal fissure (Figure). All the procedures were performed by one consultant surgeon (with 15 years of post-fellowship experience). The pain assessment was done every hour for first 6 hours and then after 2 hours for the next 24 hours, and total pain-free period was defined as mean time taken from administration

of block till the time patient required rescue analgesia (75 mg diclofenac sodium intramuscularly).

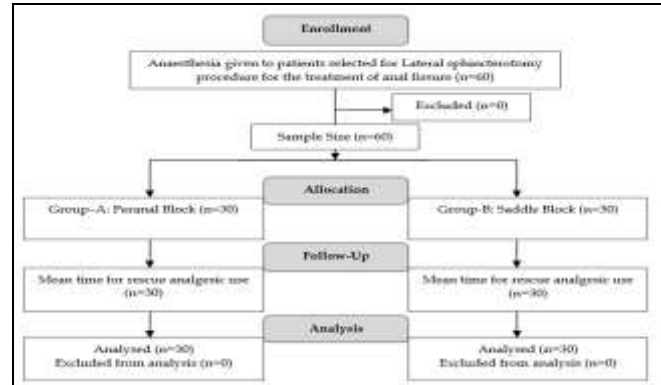


Figure: Patient Flow Diagram representing the use of Perianal Block and Saddle Block for the Treatment of Anal Fissure in Lateral Sphincterotomy Procedure

The patient is placed in either lithotomy or left lateral position. The perineal area is painted and draped. 2% lidocaine jelly is instilled into the anal canal 5-10 minutes before the start of surgery. Thirty mg of IV Inj ketorolac is administered after establishment of IV line. Thirty ml of Inj 1% lignocaine with adrenaline (1:200,000) is made by diluting Inj 2% lignocaine with adrenaline with an equal amount of distilled water. Using 10 or 20 cc syringe, this local anaesthesia is injected in a fan-shaped manner at 6 and 12 o'clock position as well as circumferentially all around the perianal area.

All the data was analyzed by using Statistical Package for Social Sciences (SPSS) version 26.0. The quantitative variables like age, BMI, and pain score were presented as mean and standard deviation. The qualitative variables like gender, diabetes mellitus (yes/no), hypertension (yes/no), and obesity (yes/no) were presented as frequency and percentage. Independent sample t-test was used to compare the mean pain score of both Groups.

RESULTS

This study determined that mean time taken for using rescue analgesia in Group-A was 288.17 ± 58.13 minutes versus mean time required was 117.50 ± 18.18 minutes in Group-B ($p < 0.001$) (Table-II). The total of 60 patients were selected for the study out of which (38)63.3% were male patients whereas (22)36.7% were female patients. The mean age of these patients was 36.73 ± 9.19 years (range, 22–58 years), and (43)71.7% were aged up to 40 years. Twenty-one (35.0%) were from rural areas and (20)33.3% were from a poor

background. Patients with a history of diabetes were noted in (8)13.3%, and (14)23.3% were hypertensive. Mean body mass index was 24.21 ± 2.21 kg/m², and (10)16.7% were obese. Both Groups were similar in terms of basic demographic distribution as shown in Table-I.

Table-I: Baseline Characteristics in both Study Groups (n=60)

Characteristics	Study Groups		p-value
	Group-A (n=30)	Group-B (n=30)	
Gender			
Male (n= 38)	20(66.7%)	18(60.0%)	0.592
Female (n=22)	10(33.3%)	12(40.0%)	
Age Groups			
≤40 Years (n=43)	21(70.0%)	22(73.3%)	0.774
>40 Years (n=17)	09(30.0%)	08(26.7%)	
Residential status			
Rural (n=21)	10(33.3 %)	11(36.7%)	0.787
Urban (n=39)	20(66.7%)	19(63.3%)	
Socioeconomic Status			
Poor (n=20)	09(30.0%)	11(36.7%)	0.584
Middle Income (n=40)	21(70.0%)	19(63.3%)	
Diabetes			
Yes (n=08)	03(10.0%)	05(16.7%)	0.448
No (n=52)	27(90.0%)	25(83.3%)	
Hypertension			
Yes (n=14)	08(26.7%)	06(20.0%)	0.542
No (n=46)	22(73.3%)	24(80.0%)	
Obesity			
Yes (n=10)	05(16.7%)	05(16.7%)	0.999
No (n=50)	25(83.3%)	25(83.3%)	

Table-II: Distribution of Mean time taken for Rescue Analgesia In both Groups (n=60)

Time taken for rescue analgesia in Minutes (Mean±SD)	Study Groups		p-value
	Group-A (n=30)	Group-B (n=30)	
	288.17±58.13	117.50±18.18	<0.001

DISCUSSION

Anal Fissures are superficial tears of skin which are located distal to the dentate lines. Anal fissures are one the most common causes of emergency department visits all over the world. In majority of the patients, this condition results from hard stools or constipation and traumatic injuries.¹² Anal fissure is significantly associated with prolonged history of constipation which shows linear relationship with this condition.¹³ Anal fissure is categorized as acute, that lasts <1.5 months or it is chronic, lasting for more than 6 weeks. Most of the anal fissures are reported to be primary and usually found at the posterior midline.^{14,15}

This study included 60 patients with anal fissure who met inclusion and exclusion criteria of this study and (38)63.3% were male patients whereas (22)36.7% were females. This male gender predominance has been reported in previous studies as well. A study conducted in Karachi by Aziz *et al.*,¹⁶ has also reported male gender preponderance with 76%, similar to the study findings. Memon *et al.*,¹⁷ reported 72% male patients with anal fissures, similar to the study findings. Khan *et al.*,¹⁸ also reported 81% male patients compared with female patients presenting with anal fissure. These findings of Khan *et al.*,¹⁸ are in compliance with the study findings. Ahmed *et al.*,¹⁹ from Bahawalpur also reported 74% male patients with anal fissures, similar to the study results. Gupta *et al.*,²⁰ from India has also reported 55.9% male gender predominance, close to the study results.

Mean age of these patients was 36.73 ± 9.19 years (range, 22–58 years), and (43)71.7% were aged up to 40 years. Aziz *et al.*,¹⁶ from Karachi also reported that most of patients with anal fissures belonged to age Group of 41–50 years, similar to the study results. Memon *et al.*,¹⁷ from Hyderabad also reported 38 ± 11.5 years mean age of the patients with anal fissure, close to the study results. Khan *et al.*,¹⁸ also reported similar results showing more prevalence of the disease in age Groups ranging from 30–50 years of age and reported mean age of anal fissure patients was 35.15 years. A study conducted in Bahawalpur by Ahmed *et al.*,¹⁹ also reported similar results with 36.4 ± 8.8 years mean of the patients with anal fissure. Gupta *et al.*,²⁰ from India, also reported 40.13 ± 12.37 years mean age, which is close to the study results. Gupta *et al.*,²⁰ also documented that mean age of the male patients was 41.30 ± 12.35 years while that of female patients was 38.42 ± 12.35 years, in compliance with the study results.

Twenty-one (35.0%) were from rural areas and (20)33.3% were from poor background. History of diabetes was noted in (8)13.3%, and (14)23.3% were hypertensive. Al-Ubaide *et al.*,²¹ from Iraq has reported 3% diabetes in anal fissures which is quite lower than the study, this points high proportion of burden of diabetes in the study population. Mean body mass index was 24.21 ± 2.21 kg/m² and 10(16.7%) were obese. Al – Ubaide *et al.*,²¹ from Iraq has reported 29.27 ± 2.66 kg/m² mean BMI among patients with anal fissures, similar to the study results.

Mean time taken for rescue analgesia in Group-A was 288.17 ± 58.13 minutes versus 117.50 ± 18.18 minutes

in Group-B ($p<0.001$). An Indian study conducted by Jinjal *et al.*,¹² has documented mean time taken for rescue analgesia in perianal block was 287 ± 120 minutes versus 120 ± 38 minutes in saddle block, similar to the study results. Bharathi *et al.*,²² and Nystrom *et al.*,²³ had reported prolonged duration of postoperative analgesia in perianal block Group, ranging from 5 hrs to 12 hrs, which support the study findings. Similarly, Sikakulya *et al.*,²⁴ noted that postoperative perianal block analgesia persisted for 3 to 10 hrs in perianal operations and concluded as anaesthesia of choice in perianal operations due to its safety, practicality, dependability, and reproducibility. Studies conducted in Pakistan at Nishtar Hospital Multan,²⁵ have also revealed superior analgesic efficiency of perianal block over saddle block. Further research with more sample size for all types of perianal operations should be done to establish the usefulness and safety of perianal blocks in these surgeries.

ACKNOWLEDGEMENT

Authors would like to thank Dr Rana Khurram Aslam, Postgraduate Resident in anaesthesia, CMH Multan, for his help in the preparation of this article.

CONCLUSION

Perianal block is a new technique with many benefits, like extended postoperative analgesia and early return to home. The study results support use of perianal block as it was found to be effective, safe and reliable in the treatment of anal fissures. Mean time taken for rescue analgesia was significantly higher in perianal block as compared with saddle block. No adverse events were observed among these patients; hence, it is suggested that all clinicians treating such patients should employ perianal block to achieve desired clinical outcomes, which will reduce extra use of analgesic drugs as well burden on healthcare system.

Conflict of Interest: None.

Funding Source: None.

Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

MAR & SAA: Data acquisition, data analysis, drafting the manuscript, critical review, approval of the final version to be published.

SK & RA: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

ASA & SK: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity

of any part of the work are appropriately investigated and resolved.

REFERENCES

1. Jahnny B, Ashurst JV. Anal Fissures. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2023.
2. Bara BK, Mohanty SK, Behera SN, Sahoo AK, Swain SK. Fissurectomy Versus Lateral Internal Sphincterotomy in the Treatment of Chronic Anal Fissure: A Randomized Control Trial. *Cureus* 2021; 13(9): e18363.
<https://doi.org/10.7759/cureus.18363>
3. Tutino R, Nigro C, Paternostro F, Federico R, Lo Secco G, Gallo G, et al. Fissurectomy versus lateral internal sphincterotomy in the treatment of chronic anal fissures: no advantages in terms of post-operative incontinence. *Tech Coloproctol* 2023; 27(10): 885-889.
<https://doi.org/10.1007/s10151-023-02780-8>
4. Al-Thoubaity F. Safety and efficacy of the treatment of chronic anal fissure by lateral internal sphincterotomy: A retrospective cohort study. *Ann Med Surg* 2020; 57: 291-294.
<https://doi.org/10.1016/j.amsu.2020.08.010>
5. Tomasicchio G, Dezi A, Picciariello A, Altomare DF, Giove C, Martines G, et al. Safety and efficacy of Levorag emulgel in the treatment of anal fissures using a validated scoring system. *Front Surg* 2023; 10: 1145170.
<https://doi.org/10.3389/fsurg.2023.1145170>
6. Shahid MH, Javed S, Javed S, Khan AZ, Kaiser A, Mithany RH. Comparative Efficacy of Topical Metronidazole and Glyceryl Trinitrate Versus Topical Glyceryl Trinitrate Alone in the Treatment of Acute Anal Fissure: A Randomized Clinical Trial. *Cureus* 2022; 14(11): e31812.
<https://doi.org/10.7759/cureus.31812>
7. Jin JZ. A systematic review and meta-analysis of the efficacy of topical sphincterotomy treatments for anal fissure. *Int J Colorectal Dis* 2022; 37(1): 1-15.
<https://doi.org/10.1007/s00384-021-04040-3>
8. Ram E, Zager Y, Meyer R, Carter D, Joubran S, Horesh N. Management of Chronic Anal Fissure with a Novel Topical Hemp-Herbal-Based Ointment: A Pilot Study. *Med Cannabis Cannabinoids* 2023; 6(1): 15-20.
<https://doi.org/10.1159/000528119>
9. Fagan C, Kolber MR, Lindblad AJ. Topical treatments for anal fissure. *Can Fam Physician* 2023; 69(1): 33.
<https://doi.org/10.46747/cfp.690133>
10. Mustafa G. Clinical Outcome of 0.2% Glyceryl Trinitrate Topical Ointment Compared to Lateral Internal Sphincterotomy in the Treatment of Patient with Chronic Anal Fissure: A Randomized Control Trial. *Mymensingh Med J* 2022; 31(4): 1034-1039.
11. Van Reijn-Baggen DA, Elzevier HW, Pelger RCM, Han-Geurts IJM. Pelvic floor physical therapy in the treatment of chronic anal fissure (PAF-study): Study protocol for a randomized controlled trial. *Contemp Clin Trials Commun* 2021; 24: 100874.
<https://doi.org/10.1016/j.conctc.2021.100874>
12. Jinjal K, Dwivedi D, Bhatnagar V, Ray RK, Tara S. Perianal Block: Is It as Good as Spinal Anesthesia for Closed Hemorrhoidectomies? *Anesth Essays Res* 2018; 12(1): 36-41.
https://doi.org/10.4103/aer.AER_225_17
13. Van Reijn-Baggen DA, Elzevier HW, Braak JPB, Putter H, Pelger RCM, Han-Geurts IJM. Pelvic floor physical therapy in the treatment of chronic anal fissure (PAF trial): quality of life outcome. *Tech Coloproctol* 2023; 27(2): 125-133.
<https://doi.org/10.1007/s10151-022-02741-7>

Treatment of Anal Fissure

14. Van Reijn-Baggen DA, Elzevier HW, Putter H, Pelger RCM, Han-Geurts IJM. Pelvic floor physical therapy in patients with chronic anal fissure: a randomized controlled trial. *Tech Coloproctol* 2022; 26(7): 571-582.
<https://doi.org/10.1007/s10151-022-02618-9>
15. Van Reijn-Baggen DA, Elzevier HW, Putter H, Pelger RCM, Han-Geurts IJM. Pelvic floor physical therapy in patients with chronic anal fissure: long-term follow-up of a randomized controlled trial. *Int J Colorectal Dis* 2023; 38(1): 3.
<https://doi.org/10.1007/s00384-022-04292-7>
16. Aziz A, Sheikh I, Mohammad S, Alam SN, Mazar S. Lateral subcutaneous internal sphincterotomy in chronic anal fissure: the study experience. *Pak J Surg* 2009; 25(2): 93-96.
17. Memon AS, Siddiqui FG, Hamad A. Fissurectomy with posterior midline sphincterotomy for management of chronic anal fissure. *J Coll Physicians Surg Pak* 2010; 20(4): 229-230.
18. Khan MR, Akbar A, Riaz MU. Frequency of persistent postoperative incontinence in closed lateral internal sphincterotomy for chronic anal fissure. *Pak J Med Health Sci* 2010; 4(4): 376-380.
19. Ahmed S, Iqbal T, Abdullah MS. Closed internal sphincterotomy in chronic anal fissure: an experience at Bahawal Victoria Hospital Bahawalpur. *Pak J Med Health Sci* 2014; 8(1): 31-33.
20. Gupta V, Rodrigues G, Prabhu R, Ravi C. Open versus closed lateral internal anal sphincterotomy in the management of chronic anal fissures: a prospective randomized study. *Asian J Surg* 2014; 37(4): 178-183.
<https://doi.org/10.1016/j.asjsur.2014.01.009>
21. Al-Ubaide AF, Al-Rubaye SM, Al-Ani RM. Lateral Internal Anal Sphincterotomy of Chronic Anal Fissure: An Experience of 165 Cases. *Cureus* 2022; 14(10): e30530.
<https://doi.org/10.7759/cureus.30530>
22. Bharathi RS, Sharma V, Dabas AK, Chakladar A. Evidence based switch to perianal block for ano-rectal surgeries. *Int J Surg* 2010; 8(1): 29-31. <https://doi.org/10.1016/j.ijssu.2009.09.013>
23. Nyström PO, Derwinger K, Gerjy R. Local perianal block for anal surgery. *Tech Coloproctol* 2004; 8: 23-26.
<https://doi.org/10.1007/s10151-004-0046-8>
24. Sikakulya, F.K., Ssebuufu, R., Okedi, X.F. et al. Local anesthesia versus saddle block for open hemorrhoidectomy: cost-analysis from a randomized, double blind controlled trial. *BMC Health Serv Res* 23 1283 (2023).
<https://doi.org/10.1186/s12913-023-10290-4>
25. Ahmad N, Aziz M. Closed lateral Internal Sphincterotomy under local anesthesia in OPD in the treatment of chronic Anal Fissure. *Ann King Edward Med Uni* 2016; 10(1): 1133.
<https://doi.org/10.21649/akemu.v10i1.1133>

.....