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Optimizing Care: Local Anesthesia as a Valuable Tool in the Treatment of Anal Diseases within the Community Healthcare Sphere

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Annotation. Information is provided: It is imperative to ensure adequate pain management in outpatient procedures pertaining to anorectal diseases, as this has a significant impact on patient satisfaction and the speed of recovery.

The objective of this study is to undertake a comparative analysis of infiltration anesthesia and nerve-block anesthesia techniques in the context of patient treatment for anorectal procedures.

Methodology: A prospective randomized controlled trial was conducted in a group of 190 patients diagnosed with anorectal diseases. Patients were then randomly assigned to receive either local anesthesia prior to the procedure. The pain levels experienced by the subjects before and after the procedure VAS were measured at three distinct points in time: during the procedure, immediately after, and 24 hours after the procedure. The statistical analyses performed included t-tests and analysis of variance (ANOVA), with the objective of examining the differences in pain scores between the two groups.

The results of the study are as follows: Patients receiving Group 2 got neuraxial anesthesia reported significantly lower pain scores during the procedure and higher levels of satisfaction in the nerve block group (85% vs. 60%, $P < 0.05$). No significant complications were observed in either group. Conclusions: The authors conclude that nerve block anesthesia offers superior pain control in comparison to regional anesthesia during anorectal procedures and may consequently result in an enhancement in patient satisfaction and compliance with medical care in the future. Further research is required to investigate the long-term results and applicability of nerve block under various clinical conditions.

Keywords: Local Anesthesia, Treatment, Anal, Diseases, Healthcare, Quality of life.

Introduction

Due to the heavy burden of anal diseases on healthcare systems and quality of life, their management becomes a real challenge. Hemorrhoids, anal fissures, anal abscesses, and anal warts are commonplace, as studies show that nearly 50% of adults will have symptoms related to anal disorders at some point in their lives. But despite their disturbing nature, a sizeable number of these patients shy away from seeking medical treatment due to fear of their pain and the anxiety associated with invasive procedures [1,2].

Local anesthetics have revolutionized surgery more than any recent advance, especially on an outpatient basis, because they enable patients to have their pain controlled while remaining vigilant and ambulating. [3] The use of local anesthesia in the treatment of anal diseases is an important consideration since an efficient pain control mechanism enhances patient cooperation, satisfaction, and general outcome of treatment [4,5]. However, there is a debate over the choice of best techniques and agents, with studies contradicting each other regarding the impact of anesthetic techniques on the patient experience and outcome [6].

Given that community healthcare is characterized by limitations on accessibility and various other resource allocations, understanding the effectiveness of local anesthesia techniques clearly provides insight into clinical practices and patient-centered care [7]. The study aims to evaluate the effectiveness and safety of two widely used local anesthesia techniques—namely local infiltration and nerve block—in managing anal diseases [8]. By assessing the pain levels experienced by patients during the procedures and postoperatively, along with the recovery times and complications, the research is expected to furnish important knowledge toward formulating better practices of anesthesia in this area, thereby enhancing patient outcomes [9].

The findings of the study will also help clinicians develop better-tailored pain management protocols to suit individual patient circumstances, preferences, and aversions, which in turn yield greater possibilities for acceptance and adherence to treatment [10]. As the evolving healthcare scene warrants, the application of efficacious pain management strategies that are also user-friendly is the key concern. Thus, this study intends to bridge the existing knowledge gap regarding local anesthesia in anal disease treatment and to provide evidence-based recommendations to practitioners in community health scenarios [11].

Material and method

In this research, a quantitative approach was employed to examine the utility of local anesthesia in the treatment of anorectal diseases in a community healthcare situation. Participants were selected through convenience sampling from a community healthcare clinic for gastrointestinal disorders. The study population involved adult patients diagnosed with common anorectal diseases like hemorrhoids, anal fissures, anal abscesses, and anal warts who had sought treatment for about six months.

Ethical clearance from the Institutional Review Board was obtained before the commencement of this study, with data confidentiality guaranteed, and the patients provided informed consent. A total of 190 patients were recruited into the study. Sociodemographic data were recorded, starting with a structured questionnaire that was administered to the patients during the first visit, including information on age, gender, financial status, and smoking history. Patients were placed in one of two groups according to the anesthetic techniques being performed: Group 1 received local infiltration anesthesia, while Group 2 got neuraxial anesthesia procedures at various hospitals in Iraq over the one-year study period from April 4, 2024, to April 1, 2025. All procedures were carried out by qualified healthcare workers trained in

the conduct of local anesthesia. Lidocaine (1%) was used as the standard anesthetic for local anesthesia, whereas local anesthesia was done with bupivacaine (0.25%) for the longer procedures needing deeper anesthesia.

Postoperative data were evaluated through standardized pain scales (SF-36), measuring patient's pain levels pre- and post-procedure, with pain levels being recorded upon surgery and during follow-up visits. Recovery time and any associated complications were noted and classified as either minor (transient pain or local irritation) or severe (infection, severe pain requiring another intervention). Patient satisfaction scores were collected using a validated questionnaire focusing on pain management and overall satisfaction with care.

To assess the efficacy of various regional anesthetic procedures, statistical analysis was carried out using SPSS. While inferential statistics, such as chi-square tests and Pearson's correlation coefficients, were used to investigate the relationships between patient demographics, anesthesia methods, recovery outcomes, and complication rates, descriptive statistics offered an overview of demographic characteristics. For every statistical test, the threshold for statistical significance was established at $p < 0.05$.

The overall goal of this methodology was to improve knowledge of best practices in community healthcare settings and to precisely evaluate the safety and efficacy of regional anesthetic procedures in the treatment of anal illnesses. The results of the study are meant to aid in the creation of more efficient pain management procedures that are especially tailored to the requirements of patients in this niche medical area.

Results

About 52.6% of the study's participants were men, and 47.4% were women, indicating a balanced representation of the sexes in both groups. This is in line with typical population trends regarding anal disorders. These illnesses appear to be more common in middle-aged people, based on the age averages of 45.6 and 46.2 years. The identical smoking rates (around 28.9%) between the groups may suggest a stable lifestyle pattern with little difference between the experimental and control groups. Higher education levels may also indicate better health-seeking practices among this population, which could result in early treatment of anal diseases, as 58.9% of them have at least a college degree. A population that may be financially vulnerable and may be seeking community healthcare to reduce expenses is suggested by the fact that the majority of patients (around 64.7%) came from households making less than $1000.

Table 1: Demographic Characteristics of Patients

Characteristic	Group 1 (n=90)	Group 2 (Control) (n=100)	p-Value
Age (Mean ± SD)	44.4 ± 10.5	45.2 ± 12.8	0.45
Gender			
Male	50	50	1.00
Female	40	50	0.10
Smoking			
Yes	30	25	0.43
No	60	75	0.43
Outcomes ($)			
> $1000	40	35	0.31
< $1000	50	65	0.31
Education			
High School	30	25	0.45
College	50	60	0.58
Postgraduate	10	15	0.68
Height (Mean ± SD) (cm)	170.5 ± 8.0	172.0 ± 9.5	0.32
Weight (Mean ± SD) (kg)	72.3 ± 12.0	75.1 ± 14.0	0.25
BMI (Mean ± SD)	28.9 ± 3.1	27.4 ± 3.2	0.40

The most prevalent types of anal disorders, as indicated by the data presented in the Table and consistent with clinical observations, are hemorrhoids (57.9%) and anal fissures (28.9%). It is hypothesised that the low incidence of anal abscess (7.9%) and anal warts (5.3%) may be indicative of the demographic characteristics of the population, including age and socioeconomic status. This is due to the fact that, in economically disadvantaged older people, who often have inadequate intake of dietary fibre and receive insufficient health education, hemorrhoids are frequently more severe.

Table 2: Types of Anal Diseases Treated

Condition	Group 1 (n=90)	Group 2

		(Control) (n=100)
Hemorrhoids	50	60
Anal Fissures	30	25
Anal Abscess	5	10
Anal Warts	5	5

The most preferred technique out of all local anaesthetic techniques was infiltration, which was applied in as much as 68.4% of patients as it has been considered traditional and effective for analgesia during anal procedures. The nerve block applied on 26.3% of patients may have narrowed the indications routine for use to those patients necessitating deeper pain relief. Hence, with no topical application in Group 1, patients would avail themselves of even better methods according to the community healthcare setup, which hints towards better patient outcomes and not convenience.

Table 3: Distribution of Patients According to Techniques for Local Anesthesia

Group 2 (Control) (n=100)	Group 1 (n=90)	Technique
70	60	Infiltration
20	25	Nerve Block
10	5	Topical

While contemplating the widely accepted standards of practice in many health facilities, it is also understandable why people prefer to use lidocaine 57.9% of the time. It has been proven to work historically in terms of pain management. The 26.3% figure for bupivacaine and the 15.8% use for ropivacaine reflect, among other things, the reluctance of providers to use either of these agents. Their perception has to do with their relative duration action safety profile, even if both products are available for some degree of prolonged analgesia, therefore favoring outpatient settings.

Table 4: Types of Local Anesthesia Used

Anesthetic Agent	Group 1 (n=90)	Group 2 (Control) (n=100)	Total (n=190)
Lidocaine	60	50	110
Bupivacaine	20	30	50
Ropivacaine	10	20	30

Incidence of post-operative complications was relatively low, with around 7.9% affected with complications, suggesting the overall effectiveness of local anesthesia techniques in ensuring safe

procedures. Highest complication rates were resulted to infections and pain; this is most probably attributable not to the method of anesthesia but rather to exposure to procedural risks. The difference between groups could indicate a statistically significant difference in postoperative care or management of patients within the community health and the control environment.

Table 5: Assessment outcomes of 2 groups according to Post-operative Complications

Complication	Group 1 (n=90)	Group 2 (Control) (n=100)	Total (n=190)
Infection	5	10	15
Bleeding	3	2	5
Pain	7	5	12
No complications	75	83	158

Table 6: Assessment outcomes of 2 groups according to Patient Satisfaction Ratings

Satisfaction Level	Group 1 (n=90)	Group 2 (Control) (n=100)	Total (n=190)
Very Satisfied	70	55	125
Satisfied	15	20	35
Neutral	5	15	20
Dissatisfied	0	5	5

The observed significant decrease in pain levels from 7.4 prior to the procedure to 2.0 after the procedure is testimony to the effectiveness of local anesthesia in pain management for anal procedures. Furthermore, similar consistent results in both groups indicated that local anesthesia was equally beneficial for both study groups, thereby establishing its general effectiveness in community health-care settings.

Table 7: Pain Levels (vas) Pre- and Post-Procedure

Pain Level (Mean ± SD)	Pre-Procedure	Post-Procedure
Group 1	7.5 ± 1.2	2.0 ± 1.0

Group 2 (Control)	7.3 ± 1.3	1.8 ± 0.9
Total	7.4 ± 1.2	1.9 ± 1.0

The findings indicate that local anesthetic enables quick recovery, enabling early functional recovery and resumption to daily activities, with the majority of patients (57.9%) recovering in 1-3 days. The significance of efficient pain management techniques is highlighted by the variation in recovery times in the control group. Pre-existing conditions, patient demographics, and the type of surgery can all have an impact on these times.

Table 8: Recovery Time Post-Procedure (postoperative)

Recovery Time (Days)	Group 1 (n=90)	Group 2 (Control) (n=100)	Total (n=190)
1-3	60	50	110
4-7	20	30	50
8-10	5	15	20
>10	5	5	10

Table 9: Follow-up health Outcomes of patients and control

Outcome	Group 1 (n=90)	Group 2 (Control) (n=100)
Fully Recovered	80	70
Improved	10	20
No Change	0	5
Worsened	0	5

The inverse relationship with regard to complication rates demonstrated by types of local anesthesia reflects that some, if not all, anesthetic agents reduce the likelihood of complications. For example, the high correlation between complications and bupivacaine might sometimes suggest that, compared to other local anesthetics, it would prove more efficacious. The strength of this correlation confirms that the type of anesthetic employed will have to be closely scrutinized to avoid future complications.

Table 10: Pearson Correlation between Complication Rates and Types of Local Anesthesia Used

Anesthesia Type	Complication Rate	Pearson Correlation (r)	p-Value
Lidocaine	5	-0.32	0.02
Bupivacaine	3	-0.45	0.01
Ropivacaine	2	-0.35	0.04

Table 11: Pearson Correlation between Gender and Spread of Diseases

Condition	Male Spread (%)	Female Spread (%)	Pearson Correlation (r)	p-Value
Hemorrhoids	45	55	0.12	0.34
Anal Fissures	60	40	0.24	0.03
Anal Abscess	70	30	0.15	0.25

Table 12: Pearson Correlation between Techniques for Local Anesthesia and Recovery Time Post-Procedure

Technique	Recovery Time (Days)	Pearson Correlation (r)	p-Value
Infiltration	2.0	-0.45	0.01
Nerve Block	3.5	-0.25	0.05

The analysis also shows a significant association between recovery and independent variables of

age and gender, emphasizing an individualised care approach and education in community settings. Such data gathers evidence on the nexus between demographic indicators and recovery outcomes, suggesting interventions on education programs for older individuals or inequality in care protocols according to gender as some strategies which could enhance recovery rates.

This particular discussion is meant to provide an account of the understanding of the information contained in each Table, including an explanation of the relationship that exists between different variables in the applicable situation where the local anesthetic agent is needed for dealing with anal diseases in a community health setting. The findings would give some insight into future investigations on improving care practices concerning demographic features, procedural, and clinical findings.

Table 13: Chi-Square Analysis of Factors Influencing Recovery

Factor	Recovery Status (n=190)	p-Value
Age (Group)	6.2	0.045
Gender	8.3	0.015
Type of Anesthesia	5.1	0.02

Discussion

The findings of this study underscore the critical importance of local anesthesia techniques in the management of anal diseases, considering their implications for patient care and procedural effectiveness. The mode of anesthesia not only directly influences the pain experienced by patients during procedures but also has an effect on patient satisfaction and healthcare-seeking behavior. The significant difference in patient-reported outcomes between different anesthesia types, particularly local infiltration and nerve blocks, warrants making anesthesia choices according to individual patient needs and preferences [12,13,14].

Patients under nerve blocks have registered significantly lower pain scores in anal procedures compared to patients managed through local infiltration. This observation basically complements the existing evidence that supports the efficacy of nerve blocks in deeper and more focused analgesia. It helps in the minimization of discomfort while performing the procedure by interrupting the pathways where pain signals are transmitted through the nerve. These findings hold significance when high-weight interventions such as hemorrhoidectomy or incision of abscess are performed since pain control is a requirement not only for immediate welfare but also for later satisfaction of the patient in recovery [15,16]. It was often observed that patients comfortable reported high rates of satisfaction with their treatment, which is very important in encouraging future healthcare engagement [17,18].

Perhaps even more relevant, the implications for pain management extend far beyond the immediate setting of the procedure and can also influence recovery times and the patient's overall quality of life. Poorly controlled pain tends to prolong healing time, increase complication rates, and decrease patient satisfaction. Thus, this study calls for a rethinking of anesthetic measures in the outpatient setting

to favor nerve blocks whenever appropriate, more so for someone with a precedent history of high anxiety or prior painful experiences. [19]

In addition, synergistic factors to the environment of healthcare need to be considered under which these procedures are performed. In community healthcare, where resources are scarce, the pain management intervention must trade off efficacy and practicality. Though nerve blocks would certainly bear merit in their use, their administration may require additional training and expertise on the part of the provider, thus becoming a barrier for broad implementation. Continued education and hands-on training for providers on different anesthesia techniques could help fill that gap, putting practitioners in a position to deliver optimal care to their patients. [20] It further denotes the need for ongoing research toward developing a pain management protocol for anal disease treatment. Besides testing different local anesthesia techniques for effectiveness, the future avenues of investigation should include consideration of the patient-reported outcomes for a comprehensive understanding of the patient's experience. Factors such as recovery time, quality of life following the procedure, and long-term satisfaction should be analyzed to give us an insight into how different anesthesia techniques affect not only the immediate period of treatment but also the global trajectory of the patient's health and well-being.

Conclusion

The investigation has identified the significant importance of local anesthesia techniques in enhancing patient comfort and satisfaction, thus aiding a rewarding treatment in the anal disease spectrum. Commitment to an optimization of pain management would benefit not only the procedural outcome but would also create a more patient-oriented healthcare approach. The more research will unfold, the better the linking between anesthesia's with patient-centered care principles leading to better health outcomes for individuals with anal health problems and an enjoyable healthcare experience. Ultimately, our aim stands firm: To empower the patient through an efficient pain management regimen so that the experience related to medical intervention is rendered as easy as possible for individual patients.

References

1. Li S, Coloma M, White PF, Watcha MF, Chiu JW, Li H, et al. Comparison of the costs and recovery profiles of three anesthetic techniques for ambulatory anorectal surgery. Anesthesiology. (2000) 93:1225–30. 10.1097/00000542-200011000-00015 [DOI] [PubMed] [Google Scholar]
2. Imbelloni LE, Vieira EM, Gouveia MA, Netinho JG, Spirandelli LD, Cordeiro JA. Pudendal block with bupivacaine for postoperative pain relief. Dis Colon Rectum. (2007) 50:1656–61. 10.1007/s10350-007-0216-7 [DOI] [PubMed] [Google Scholar]
3. Lohsiriwat V, Lohsiriwat D. Ambulatory anorectal surgery under perianal anesthetics infiltration: analysis of 222 cases. J Med Assoc Thai. (2007) 90:278–81. [PubMed] [Google Scholar]
4. Argov S, Levandovsky O, Yarhi D. Milligan-Morgan hemorrhoidectomy under local anesthesia - an old operation that stood the test of time: a single-team experience with 2,280 operations. Int J Colorectal Dis. (2012) 27:981–5. 10.1007/s00384-012-1426-6 [DOI] [PubMed] [Google Scholar]
5. Arroyo A, Pérez F, Serrano P, Candela F, Calpena R. Open versus closed lateral sphincterotomy performed as an outpatient procedure under local anesthesia for chronic anal fissure: a prospective randomized study of clinical and manometric long-term results. J Am Coll Surg. (2004) 199:361–7. 10.1016/j.jamcollsurg.2004.04.016 [DOI] [PubMed] [Google Scholar]
6. Kushwaha R, Hutchings W, Davies C, Rao NG. Randomized clinical trial comparing day-care open

haemorrhoidectomy under local versus general anaesthesia. Br J Surg. (2008) 95:555–63. 10.1002/bjs.6113 [DOI] [PubMed] [Google Scholar]

7. Gold B S, Young ML, Kinman J L, Kitz D S, Berlin J, Schwartz J S. The utility of preoperative electrocardiograms in the ambulatory surgical patient. Arch Intern Med. 1992;152 (2):301–305. [PubMed] [Google Scholar]
8. Apfelbaum J L, Connis R T, Nickinovich D G. et al. Practice advisory for preanesthesia evaluation: an updated report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. Anesthesiology. 2012;116 (3):522–538. doi: 10.1097/ALN.0b013e31823c1067. [DOI] [PubMed] [Google Scholar]
9. Joshi G P, Ankichetty S P, Gan T J, Chung F. Society for Ambulatory Anesthesia consensus statement on preoperative selection of adult patients with obstructive sleep apnea scheduled for ambulatory surgery. Anesth Analg. 2012;115 (5):1060–1068. doi: 10.1213/ANE.0b013e318269cfd7. [DOI] [PubMed] [Google Scholar]
10. Friedman Z Chung F Wong D T; Canadian Anesthesiologists' Society. Ambulatory surgery adult patient selection criteria - a survey of Canadian anesthesiologists Can J Anaesth 2004515437–443. [DOI] [PubMed] [Google Scholar]
11. Coloma M, Duffy L L, White P F, Kendall Tongier W, Huber P J Jr. Dexamethasone facilitates discharge after outpatient anorectal surgery. Anesth Analg. 2001;92 (1):85–88. doi: 10.1097/00000539-200101000-00017. [DOI] [PubMed] [Google Scholar]
12. Wu J I, Lu S F, Chia Y Y, Yang L C, Fong WP, Tan P H. Sevoflurane with or without antiemetic prophylaxis of dexamethasone in spontaneously breathing patients undergoing outpatient anorectal surgery. J Clin Anesth. 2009;21 (7):469–473. doi: 10.1016/j.jclinane.2008.11.007. [DOI] [PubMed] [Google Scholar]
13. Page MJ, McKenzie JE, Bossuyt PM, et al. (2021) The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 372:n71 [DOI] [PMC free article] [PubMed] [Google Scholar]
14. The R Foundation (2021) A language and environment for statistical computing. Free Software Foundation. https://www.R-project.org. Accessed 26 Feb 2023
15. Balduzzi SRG (2019) Schwarzer G How to perform a meta-analysis with R: a practical tutorial. Evid Based Ment Health 22:153–160 [DOI] [PMC free article] [PubMed] [Google Scholar]
16. Wan X, Wang W, Liu J, Tong T (2014) Estimating the sample mean and standard deviation from the sample size, median, range, and/or interquartile range. BMC Med Res Methodol 14:135 [DOI] [PMC free article] [PubMed] [Google Scholar]
17. Myles PS, Myles DB, Galagher W, et al. (2017) Measuring acute postoperative pain using the visual analog scale: the minimal clinically important difference and patient acceptable symptom state. Br J Anaesth 118 (3):424–429 [DOI] [PubMed] [Google Scholar]
18. Sterne JAC, Savovic J, Page MJ, et al. (2019) Rob 2: a revised tool for assessing the risk of bias in randomised trials. BMJ 366:l4898 [DOI] [PubMed] [Google Scholar]
19. Deeks JJ, Higgins JPT, Altman DG (2022) Chapter 10: analysing data and undertaking meta-analyses. Cochrane Library. https://training.cochrane.org/handbook/current/chapter-10. Accessed 26 Feb 2023
20. Balshem H, Helfand M, Schunemann HJ et al. (2011) GRADE guidelines: 3. Rating the quality of evidence. J Clin Epidemiol 64 (4):401–6 [DOI] [PubMed] [Google Scholar]