The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 3, 2025

COMPRISON BETWEEN LIGATION OF INTER-SPHICTERIC FISTULA TRACT VERSUS VAAFT+PRP IN HIGH TRANS-SPHINICTERIC FISTULAS IN TERMS OF POST OPERATIVE PAIN, HEALING TIME AND RECRRENCE

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DOI: https://doi.org/10.5281/zenodo.17099762

Keywords
LIFT, VAAFT, PRP, High Trans-Sphincteric Anal Fistulas, Postoperative Pain, Healing Time, Recurrence Rates.

Article History
Received: 19 Jan 2025
Accepted: 28 Feb 2025
Published: 10 March 2025

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Abstract

Background: *High trans-sphincteric anal fistulas require specialized treatments but doctors have different surgical methods to choose.*

Objective: *The aim of this study was to investigate LIFT surgery against VAAFT combined with PRP treatment to see what generates fewer postoperative pain and faster recovery alongside lower breakouts for high trans-sphincteric anal fistulas patients. The compare LIFT and VAAFT+PRP in terms of postoperative pain, healing time, and recurrence in patients with high trans-sphincteric anal fistulas.*

Methods: *A total number of participants was included n=130 randomly divided into 65 participants for each group and studied adults between 20 and 60 years old. A random selection process put participants through either the LIFT procedure or VAAFT+PRP treatment. Our clinical study focused on monitoring patient pain experiences during 1, 7, and 30 days after surgery as well as measuring healing time and fistula reintroduction at 6 and 12 months. We recorded the age, sex, weight status and health history of all included participants. SPSS statistical software 22 assessed differences between the study groups.*

Results: *Patients in the VAAFT+PRP group experienced less pain after surgery along with quicker healing time and lower fistula relapse rates than patients who had LIFT treatment. Patients at 12 months showed 13.8% fistula returns in the VAAFT+PRP group and 27.7% returns within the LIFT group. Each group contained patients with similar basic health information and medical problems.*

Conclusion: *Patients with high trans-sphincteric anal fistulas recover better and experience less pain with VAAFT+PRP compared to LIFT thanks to its ability to control symptoms while minimizing return of the condition. Patients benefit from VAAFT+PRP as their preferred medical option to treat high trans-sphincteric anal fistulas due to successful research results.*

INTRODUCTION

Anal fistulas cause major medical challenges for colorectal surgeons and their patients [1, 2]. The abnormal link between the anal canal and perianal skin develops after skin infections or anal trauma and leads to patient discomfort plus frequent abscesses which affect their daily life [3, 4]. Patients having high trans-sphincteric fistulas face multiple challenges during treatment because these anal fistulas cross both internal and external anal sphincter muscles with elevated risks of long-term digestive control failure and treatment relapses [5]. Surgical professionals have created multiple procedures to close anal fistulas while keeping the sphincter muscle safe from harm [6]. Health professionals use LIFT and VAAFT with PRP as their preferred ana fistula treatments. LIFT has become a commonly used procedure that ties shut the inter-sphincteric tract of trans-sphincteric high fistulas [7, 8]. Medical experts observe good success rates through this technique for fistula treatments but patients with complex fistulas experience longer healing times and part-reoccurrences [9]. The video-assisted fistula treatment lets doctors see the fistula tract better to make exact incisions without bothering the surrounding tissues. Adding PRP therapy to the VAAFT treatment supports faster tissue recovery and decreases inflammatory response [10]. Fistula experts have not agreed on which treatment approach creates superior results for severe trans-sphincteric anal fistula cases. Medical teams use LIFT because its simple procedure gives strong results for less complex fistula cases [11]. Research now shows that performing VAAFT combined with PRP treatment brings better results that minimize pain after surgery and reduce the need for further treatment. Using PRP from a patient's personal blood supply with VAAFT yields better healing results through growth factor enhancement and lowers inflammation [12].

Most studies on LIFT and VAAFT focus either on single procedures or small patient groups while few investigate which method works best during high trans-sphincteric fistula treatment. Currently few studies examine how PRP assists VAAFT surgery when evaluating patient pain levels and healing time along with risk of fistula return. VAAFT shows better results than LIFT according to studies yet scientists still need extensive research to prove this difference for difficult sphincter-involved trans-sphincteric fistulas. While studies confirm PRP benefits when added to other surgical procedures, researchers need to explore its use with VAAFT for anal fistula treatment further. Many find PRP useful for wound repair but scientists have not yet determined its specific advantages when doctors apply it to healing anal fistulas. Research needs to compare LIFT and VAAFT+PRP for treating high trans-sphincteric anal fistulas to find better postoperative recovery methods and lasting results.

This study will bridge this gap by comparing LIFT and VAAFT+PRP treatment results particularly in relation to pain relief, recovery duration, and fistula reoccurrence among patients with high trans-sphincteric anal fistulas. This study brings strong evidence for doctors to choose better treatments for patients suffering from this difficult condition and making their care better.

Methodology:

This research design used an RCT method to test LIFT and VAAFT combined with PRP affect high trans-sphincteric anal fistula treatments. During one year at our Tertiary Care Hospital, total number of participants was n=130 randomly divided into 65 patients in each study group. This study needed participants to had both high trans-sphincteric anal fistula diagnoses and ages from 20 to 60 years. The study required participants to agree to join and follow research rules properly. This study excluded people who tested positive for infections or sepsis alongside pregnant and lactating women with anorectal cancer histories in addition to inflammatory bowel disease cases. Additionally, participants needed to have intact anal sphincter muscles from prior anal surgeries and conditions. Two surgical procedures were performed. During general anesthesia doctors located the fistula and dissected it before closing and cutting the inter-sphincteric tract. The doctor allowed the wound to close naturally. During

general anesthesia the surgeon used a video-assisted process to find and pinpoint the fistula path. The surgeon put Platelet-Rich Plasma (PRP) into the fistula damaged area to help it repair by placing stitches to close the wound. After both operations healthcare staff tracked how each patient felt while recovering. Our study examined three essential outcomes like postoperative pain healing period accuracy. Pain levels were measured through the Visual Analog Scale at Day 1, 7 and 1 month after surgery. Doctors checked the recovery state through physical exams at set intervals from one month to 12 months to determine if the patient healed completely. We tracked for fistula return at 6 months and 12 months after the treatment. The research team tracked for wound infections, abscess development, incontinence issues, and sphincter problems throughout patient monitoring. The data was analysed by SPSS 22. We analysed our data using chi-square tests for non-numeric findings and t-tests for working with numeric data. The study evaluated patient outcomes using a 5% level of statistical difference to compare VAAFT+PRP against LIFT treatment. Our research wanted to show which treatment gives the best results by reducing pain and limiting future bowen disease damage.

Results

Both treatment groups had the same basic characteristics about their patients. The patient samples showed no age difference between groups as the LIFT group patients had an average age of 38.4 years and the VAAFT+PRP group patients had an average age of 39.1 years (P = 0.52). The male-female participant ratio mirrored the overall study population since 84.6% of the LIFT group matched with 81.5% of the VAAFT+PRP group and no evident difference existed between the two groups (P = 0.65). The people in both groups had similar BMIs which were 26.4 ± 3.1 in the LIFT and 27.1 ± 3.2 in the VAAFT+PRP groups but the numbers did not vary significantly (P = 0.37). Both LIFT and VAAFT+PRP groups had their fistulas for 10.5 months on average with a standard deviation of 4.3 months and 11.1 months with 4.0 months respectively without a statistical connection between them (P value equals 0.42). Both groups showed no major distinctions in existing medical issues and smoking history (see Table 1).

Table 1: Demographic Characteristics of Participants

Characteristic	LIFT Group (n=65)	VAAFT+PRP Group (n=65)	P-value
Age (Mean ± SD)	38.4 ± 9.2	39.1 ± 8.7	0.52
Gender			
Male	55 (84.6%)	53 (81.5%)	0.65
Female	10 (15.4%)	12 (18.5%)	0.65
Body Mass Index (BMI) (Mean ± SD)	26.4 ± 3.1	27.1 ± 3.2	0.37
Fistula Duration (Mean ± SD)	10.5 ± 4.3 months	11.1 ± 4.0 months	0.42
Comorbid Conditions			
Hypertension	8 (12.3%)	7 (10.8%)	0.79
Diabetes Mellitus	5 (7.7%)	6 (9.2%)	0.75
Smoking History	18 (27.7%)	16 (24.6%)	0.60
Previous Anorectal Surgery	4 (6.1%)	3 (4.6%)	0.78

Patients reported their postoperative pain levels once on Day 1, Day 7, and 1 Month. At Day 1 the LIFT patients registered more pain (7.5 ± 1.2) than the VAAFT+PRP patients (6.3 ± 1.0) and this difference was statistically significant (P = 0.02). On Day 7 the VAAFT+PRP treatment decreased pain for patients more effectively than the LIFT method because their pain ratings proved lower with statistical significance. Patients in the LIFT group felt more discomfort than those in the VAAFT+PRP group at the one-month mark with a statistically noteworthy

outcome (P=0.04). The combination of VAAFT+PRP gave patients less pain following surgery at every check-up see Table 2.

Table 2: Postoperative Pain Comparison (VAS Scores)

Time Point	LIFT Group (Mean ± SD)	VAAFT+PRP Group (Mean ± SD)	P-value
Day 1	7.5 ± 1.2	6.3 ± 1.0	0.02
Day 7	5.3 ± 1.4	4.1 ± 1.3	0.03
1 Month	3.2 ± 1.1	2.4 ± 1.0	0.04

The combined VAAFT+PRP method produced faster healing results according to measured months with marked statistical evidence. The patients in the VAAFT+PRP group healed faster by three months compared to four months for the LIFT group which proved significant through statistical tests. The findings demonstrate that using VAAFT with PRP offers better healing results than when using LIFT alone. The VAAFT+PRP wounds took a mean of 2.4 months to partially heal but the LIFT wounds needed 3.2 months which proved significant (P = 0.03) see Table 3.

Table 3: Healing Time (in Months)

Healing Criteria	LIFT Group (Months)	VAAFT+PRP Group (Months)	P-value
Complete Healing	4.5 ± 0.8	3.2 ± 0.7	0.01
Partial Healing (Wound Closure)	3.2 ± 0.9	2.4 ± 0.8	0.03

The VAAFT+PRP method showed recurrence levels of only 12.3% (8 out of 65 patients) at 6 months compared to 21.5% recurrence rate (14 out of 65 patients) recorded in the LIFT program. The VAAFT+PRP procedure reduces the likelihood of tissue growth coming back soon after treatment. The VAAFT plus PRP treatment proved more effective since 18 out of 65 patients experienced bleeding at 12 months compared to 27.7 patients from the LIFT group (P = 0.03). The data shows that adding VAAFT with PRP gives better protection against return of symptoms throughout the 12-month tracking period see Table 4.

Table 4: Recurrence Rate at 6 Months and 12 Months

Follow-up Period	LIFT Group (n=65)	VAAFT+PRP Group (n=65)	P-value
6 Months	14 (21.5%)	8 (12.3%)	0.04
12 Months	18 (27.7%)	9 (13.8%)	0.03

Patients in the LIFT group developed infections at 9.2% and abscesses at 6.1% compared to 4.6% and 1.5% respectively for VAAFT+PRP but these results were not shown to differ significantly. People receiving LIFT treatment reported increased chances of urine control issues and sphincter movement problems than those with VAAFT+PRP treatment (P = 0.48 and 0.29). Both methods led to safe outcomes though treatments in the LIFT group demonstrated more complications which results were statistically insignificant see Table 5.

Table 5: Complications in Both Groups

Complication Type	LIFT Group (n=65)	VAAFT+PRP Group (n=65)	P-value
Wound Infection	6 (9.2%)	3 (4.6%)	0.23
Abscess Formation	4 (6.1%)	1 (1.5%)	0.13
Incontinence	2 (3.1%)	1 (1.5%)	0.48
Sphincter Dysfunction	3 (4.6%)	1 (1.5%)	0.29

Based on patient responses the VAAFT+PRP approach generated better results than LIFT because 78.5% of patients in this group rated their treatment as excellent or good while only 61.5% patients did so in the LIFT group which produced statistical proof through the P-value (0.04). Patients given VAAFT+PRP experienced higher contentment with their treatment results than patients who received LIFT. People who received VAAFT+PRP treatment reported lower satisfaction at 38.5% while LIFT patients' quality was 21.5% worse according to the data in Table 6.

Table 6: Overall Treatment Satisfaction (Patient Reported)

Outcome	LIFT Group (n=65)	VAAFT+PRP Group (n=65)	P-value
Excellent/Good	40 (61.5%)	51 (78.5%)	0.04
Fair/Poor	25 (38.5%)	14 (21.5%)	0.04

Discussion:

The study investigated how VAAFT combined with Platelet-Rich Plasma works better than LIFT for treating high trans-sphincteric anal fistulas through assessment of postoperative pain levels as well as healing periods and relapse rates. The test showed that performing VAAFT with PRP treatment delivered better results than LIFT since patients experienced reduced pain after surgery and faster healing along with lower fistula relapse [13, 14]. VAAFT+PRP patients showed fewer postoperative pain indicators than LIFT patients throughout the study period. Recent evidence by Hermann et al. (2022) shows that VAAFT produces lower postoperative pain since its minimal invasiveness and PRP treatment promotes faster wound healing [15]. Our study results show PRP helped decrease pain during recovery because studies including Xiao et al. (2024) show PRP reduces inflammation and speeds up healing [16].

Participants with VAAFT+PRP treatment experienced faster wound recovery than those who received LIFT treatment. They healed on average 3.2 months before the VAAFT+PRP group compared to 4.5 months in the LIFT group. The authors' findings support Tian et al. (2022) who found that VAAFT treatment led to faster wound recovery plus decreased postoperative consequences [17]. Our study results show that PRP enhances the healing process by providing new tissue growth benefits and more blood supply [18].

Patients who received VAAFT+PRP treatment experienced fewer fistulas returning at both 6-months and 1-year marks than LIFT patients. The success rate after 12 months was 27.7% for LIFT patients yet only 13.8% for patients receiving VAAFT plus PRP. Our study results match those of Emile et al. (2020) which showed that combining VAAFT with PRP led to lower anal fistula recurrence rates than LIFT procedures. The treatment method LIFT succeeds at healing fistulas but fails more often when treating high trans-sphincteric fistulas because it cannot seal the entire fistula path [19].

LIFT resulted in more complications but research showed no important difference between treatments. To confirm that VAAFT brings controlled minimal intrusion while delivering the same low complications as LIFT. According to patient feedback VAAFT plus PRP therapy achieved superior satisfaction of 78.5% while LIFT registered 61.5% patient satisfaction. The

results match Van et al. (2021) who found that patients healed faster with VAAFT due to its mild recovery process [20].

Research evidence confirms that combined VAAFT and PRP produce better results in treating severe anal fistulas than standard LIFT procedures. Studies done by Wang et al. (2023) prove that VAAFT gives surgeons better visual control and enables better sealing of fistula tracts during treatment. Applying PRP during the procedure helps patients recover faster and reduces their risk of fistula coming back [21].

The work of Madbouly et al. (2021) proves that LIFT remains a suitable option that works best in resource-constrained settings thanks to its basic setup and cheaper cost compared to VAAFT. The improved patient recovery features of VAAFT+PRP treatment stands out in our research because the combined method effectively reduces pain and increases both healing time and protection against future fistula recurrence [22].

Limitations and Future Directions:

Our research gives significant findings about LIFT and VAAFT+PRP but its single-center approach and brief follow-ups limit its usefulness. Our research needs expansion to multiple hospitals plus additional patients and observation time before validating these reported results. The cost analysis of VAAFT+PRP should be studied because LIFT will likely remain first choice when resources are limited.

Conclusion:

Our study results show that using VAAFT with PRP is better than LIFT for complex anal fistula treatment because patients have reduced pain, quicker healing, and less chances of the fistula returning. The data matches published studies that show VAAFT+PRP helps pathways for better results with complex fistula problems.

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