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Research Article

Comparison of the effectiveness of LAFT technique and hybrid seton in the treatment of high-located anal fistula

Yüksek yerleşimli anal fistül tedavisinde LAFT tekniği ve hibrid setonun etkinliğinin karşılaştırılması

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Abstract

Aim: Many surgical techniques have been described for the treatment of high-located anal fistulas, and each surgical technique has its own advantages. In our study, we aimed to compare the long-term results of the hybrid seton technique and the laser ablation technique of the fistula tract in the surgical treatment of high-located anal fistulas.

Material and Methods: Patients who underwent laser ablation therapy (LAFT) and hybrid seton due to high-located anal fistula between June 2020 and April 2023 would be included in the study, and patients with a postoperative follow-up period of less than 6 months would be excluded from the study. The patients' files were evaluated retrospectively and their postoperative complications, preoperative and postoperative 1st month Cleveland fecal incontinence scores (CCFFSI scores), postoperative first day and first week visual analog scale (VAS) scores, follow-up periods, and recurrence rates were evaluated. Patients with a follow-up period of less than 6 months and patients treated for anal fistula due to Crohn's disease were excluded from the study.

Results: A total of 74 patients were evaluated. 32 patients were operated with LAFT (group 1), and 42 patients were operated with hybrid seton technique (Group 2). Postoperative anal abscess developed in 2 patients in Group 1 and in one patient in Group 2. Follow-up periods were calculated as 48.43±9.99, 39.26±11.17 weeks, respectively, and postoperative first day VAS scores were calculated as 4.53±1.36, 4.61±0.93, respectively. Postoperative Day 7 VAS scores were calculated as 0.96±1.14, 1.83±0.98, respectively. Preoperative CCFI scores were calculated as 1.71±1.25, 2.19±0.7, respectively. Postoperative CCFI scores were calculated as 1.78±1.23, 3.76±1.26, respectively. Postoperative recurrence occurred in 9 patients in group 1 and in 4 patients in group 2.

Conclusion: Although laser ablation of the fistula tract is a method that does not affect incontinence and has high postoperative comfort, its high recurrence rate should be taken into consideration.

Keywords: Hybrid seton, laser ablation of fistula tract, laser

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Öz

Amaç: Yüksek yerleşimli anal fistüllerin tedavisinde pek çok cerrahi teknik tanımlanmış her cerrahi tekniğin kendine ait avantajları vardır. Bizde çalışmamızda yüksek yerleşimli anal fistüllerin cerrahi tedavisinde hibrid seton tekniği ile fistül yolunun lazer ablasyonu tekniğinin uzun dönem sonuçlarını kıyaslamayı amaçladık.

Gereç ve Yöntemler: Haziran 2020- Nisan 2023 yılları arasındaki yüksek yerleşimli anal fistül nedeniyle lazer ablasyon tedavisi (LAFT) ve hibrid seton uygulanan hastalar çalışmaya dahil edilecek olup postoperatif takip süresi 6 aydan kısa olan hastalar çalışma dışı bırakılacaktır. Hastaların dosyaları retrospektif olarak değerlendirilerek hastaların postoperatif komplikasyonları, preop ve postop 1. ay Cleveland fekal inkontinans skorları(CCFFSI score), postop birinci gün birinci hafta visual analog scale (VAS) skorları, takip süreleri, nüks oranları değerlendirildi. Takip süreleri 6 aydan kısa olan hastalar, chrohn hastalığı nedeni ile anal fistül tedavisi uygulanan hastalar çalışma dışı bırakıldı.

Bulgular: Toplam 74 hasta değerlendirildi. 32 hasta LAFT (grup1), 42 hasta hibrid seton tekniği (Grup 2) ile opere edildi. Grup 1 de 2, Grup 2 de bir hastada postoperatif anal apse gelişti. Takip süreleri sırasıyla 48,43±9,99, 39,26±11,17 hafta; postoperatif birinci gün VAS skorları sırası ile 4,53±1,36, 4,61±0,93 olarak hesaplandı. Postop 7. Gün VAS skorları sırası ile 0,96±1,14, 1,83±0,98 olarak hesaplandı. Preop CCFI skorları sırası ile 1,71±1,25, 2,19±0,7 olarak hesaplandı. Postoperatif CCFI skorları sırası ile 1,78±1,23, 3,76±1,26 olarak hesaplandı. Postoperatif grup 1 de 9 grup 2 de 4 hastada nüks gelişti.

Sonuç: Fistül yolunun lazer ile ablasyonu inkontinansı etkilemeyen, postoperatif konforu yüksek bir yöntem olmasına rağmen nüks oranının yüksek olması göz önünde bulundurulmalıdır.

Anahtar kelimeler: hibrid seton, fistül traktının lazer ablasyonu, lazer

Introduction

Anal fistulas reduce the quality of life for patients due to pain and recurrent infections [1]. Anal fistula treatment aims to eliminate and heal the fistula tract, thus reducing symptoms and preventing recurrence [2]. There are many surgical treatments for anal fistula surgery. Hybrid seton (HS) and laser anal fistula tract ablation (LAFT) are some of these methods. Each method has its own advantages. In our study, we aimed to compare the HS and LAFT techniques in high-located anal fistulas.

Material and Methods

Patients who underwent laser ablation therapy (LAFT) and hybrid seton due to high-located anal fistula between June 2020 and April 2023 were included in the study, and patients with a postoperative follow-up period of less than 6 months were excluded from the study. The patients' files were evaluated retrospectively and their demographic data, postoperative complications, preoperative and postoperative 1st month Cleveland fecal incontinence scores (CCFFSI scores), postoperative first day and first week visual analog scale (VAS) scores, follow-up periods, relapse rates, and recovery times were evaluated. Patients with follow-up periods of less than 6 months, patients with Crohn's disease, cancer patients, patients who developed fistula secondary to trauma, patients who underwent anal fistula treatment due to recurrence, horseshoe and low-lying anal fistula were excluded from the study. Ethics committee approval of the study was obtained from a tertiary university hospital, and the Declaration of Helsinki designed the study.

Surgical Method

LAFT technique was applied in 2 sessions. If abscess was present in the first session, abscess drainage was performed. If there was no abscess, the fistula tract was revealed by MRI and mapping in accordance with Goodall's law, and loose seton was applied. In the second session, 4-6 weeks later, seton extraction was applied, the line was debrided and ablated with a laser probe (G.N.S neoLaser Ltd. © HaEshel, Israel) at the frequency settings as mentioned in the study [3]. The HS technique was applied in the lithotomy position, as mentioned in the study by Gulen et al. [4]. Figure 1 shows pictures of both surgical techniques applied. Patients were called for monthly check-ups in the first postoperative week, second week, and thereafter.

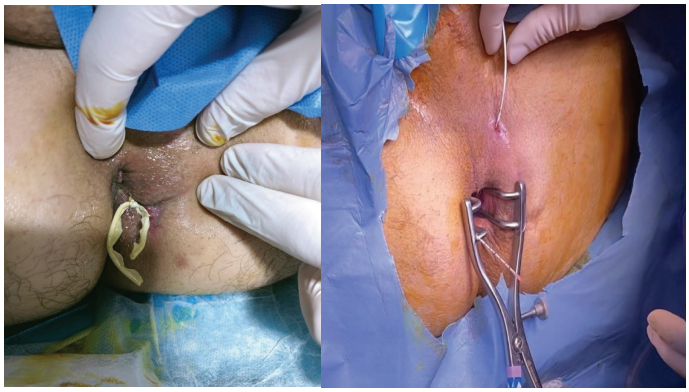

Figure 1. Applied version of LAFT and HS technique

Statistical analysis

For data evaluation, the SPPS 25 (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) statistical software was used. The variables were stated using the mean±standard deviation, percentage, and frequency values. Kolmogorov Smirnov test was performed to evaluate the homogeneity of the data. In the analysis of data, Mann-Whitney U test was used for the comparison of CCFFSI and VAS scores. Wilcoxon t-test was used to evaluate dependent groups. $P < 0.05$ was considered statistically significant.

Results

A total of 74 patients were evaluated. 32 patients were operated with LAFT (group 1), and 42 patients were operated with hybrid seton technique (group 2). In Group 1, 12 female and 20 male patients, and in Group 2, 10 female and 32 male patients were evaluated. The mean age of group 1 was calculated as 37.71±9.18, and the mean age of group 2 was 36.85±7.34 (p=0.98). In Group 1, 11 patients with intrasphinteric (IS), 2 extrasphinteric (EXS), 16 transsphinteric (TS), and 3 suprasphinteric (SS) fistulas were operated. In Group 2, 4 patients with EXS, 35 patients with TS, and 3 patients with SS fistulas were operated. The average follow-up period in Group 1 was calculated as 48.43±9.99 weeks, and in Group 2 the average follow-up period was calculated as 39.26±11.17 weeks (p=0.001). Recurrence was observed in 9 (28.1%) patients in Group 1 and 4 (9.5%) patients in Group 2 (p=0.03). Postoperative anal abscess developed in one patient in Group 1. Follow-up periods were calculated as 48.43±9.99, 39.26±11.17 weeks, respectively. Postoperative first day VAS scores were calculated as 4.53±1.36, 4.61±0.93, respectively (p:0.39). Postoperative day 7 VAS scores were calculated as 0.96±1.14, 1.83±0.98, respectively (p<0.001). Preoperative CCFI scores were calculated as 1.71±1.25, 2.19±0.7, respectively (p:0.07). Postoperative CCFI scores were calculated as 1.78±1.23, 3.76±1.26, respectively (p<0.001). The study analysis results are shown in table 1. When the preoperative and postoperative CCFSI scores were compared, the preoperative CCFSI value and postoperative CCFSI values in Group 1 were calculated as 1.71±1.25 and 1.78±1.23, respectively, and are shown in table 2(p=0.52). In Group 2, preoperative and postoperative CCFSI values were calculated as 2.19±0.7 and 3.76±1.26, respectively (p<0.001). Postoperative recurrence occurred in 9 patients in group 1 and in 4 patients in group 2.

Table 1. Analysis of study

	LAFT	Hybrid	p
Number of patient	32	42	
Gender	12 Female/ 20 Male	10 Female/ 32 male	
Age	37.71±9.18	36.85±7.34	0.98
Fistula type			
EXS	2(6.25%)	4(9.52%)	
IS	11(34.37%)	0	
TS	16(50%)	35(83,3%)	
SS	3(9.37%)	3(7,14%)	
Recurrence	9(28.1%)	4(9.5%)	0.03
Morbidity	5(15.6%)	2(4.8%)	0.22
ccfıpreop	1.71±1.25	2.19±0.7	0.07
Ccfıpostop	1.78±1.23	3,76±1,26	<0.001
Vas 1. day	4.53±1.36	4.61±0.93	0.39
Vas 7. day	0.96±1.14	1.83±0.98	<0.001
Healing time(week)	4.25±1.04	15.76±3.34	<0.001
follow-up time(week)	48.43±9.99	39.26±11.17	0.001

IS: Intrasphincteric EXS: Extrasphincteric TS: Transsphinteric SS: Suprasphinteric

Table 2. Comparison of preoperative and postoperative CCFSI values

	Preopccfı	PostopCcfı	p
LAFT	1.71±1.25	1.78±1.23	0.52
Hybrid	2.19±0.7	3.76±1.26	<0.001

Discussion

Although many sphincter-preserving techniques have been described for high-located anal fistulas, none of these techniques have taken the place in the literature as the gold standard treatment. In a prospective study on the LAFT technique, one of these techniques, the success rate was found to be 79% [5]. In another technique, the fibrin glue technique, the recurrence rate was found to be 36% [6]. The recurrence rate in the rectal mucosa advancement flap technique is stated to be 23%. In a study on another technique, endorectal mucosal advancement flaps, the recurrence rate was reported as 43% [7]. There are studies reporting recurrence rates in LAFT and hybrid seton techniques as 38% and 1.2%, respectively [8, 9]. Some of the factors affecting recurrence after anal fistula surgery have been stated as recurrent anal fistulas, diabetes, smoking, immunosuppressive diseases, and Crohn's disease [10]. Since our study was retrospective, the risk factors of the patients could not be evaluated. Although there is no study comparing the hybrid seton and LAFT technique in high-located anal fistulas, our study showed that the recurrence rate in the LAFT technique was higher than that of the hybrid seton.

Fecal incontinence poses a serious problem in high-located fistulas after anal fistula surgery. There are studies showing that there is no significant difference between preoperative and postoperative incontinence scores after hybrid seton surgery [9]. There are a few studies in the literature that evaluate incontinence using a scoring system after the LAFT technique. In the study conducted by Giamundo et al. [11], no significant difference was found between preoperative and postoperative CCFFSI scores after the LAFT technique. In our study, when the preoperative and postoperative CCFFSI scores were examined, it was seen that there was no significant difference between the preoperative CCFSI values in group 1 and the 1st month postoperative CCFSI values; In group 2, preoperative CCFSI scores were found to be significantly lower compared to the CCFFSI scores measured at the first postoperative month. Based on this, we can say that the LAFT technique is a more reliable technique in terms of incontinence compared to the hybrid seton technique.

Postoperative pain is an important factor in terms of patient comfort and quality of life after surgery in anorectal diseases. In a study conducted by Giamundo et al. [11] on the LAFT technique, the average VAS values in the VAS questionnaires they used to evaluate the preoperative and postoperative pain status were found to be 4 and no change was detected. In the study conducted by Ege et al. [9], post-operative day 1 and day 7 VAS scores were found to be 3.23 and 0.61, respectively. In this study, VAS values in Group 1 were found to be 4.53±1.36 and 0.8±1.02 on postoperative day 1 and postoperative day 7, respectively. In group 2, VAS values on postoperative day 1 and postoperative day 7 were calculated as 0.96±1.14 and 1.83±0.98, respectively, and postoperative day 7 VAS values in group 2 were higher than group 1. In the study, considering the VAS values at the first post-operative week, we can say that the LAFT technique is more comfortable than the hybrid seton technique in terms of pain. LAFT can be considered a comfortable method when evaluated in terms of postoperative pain. For more detailed postoperative comfort, quality of life surveys similar to page 36 are required. Howver, since our study was a retrospective study, patients could not be surveyed.

While the healing time in hybrid seton varies between 1 and 3 months [9], the average healing time in the LAFT technique is stated to be 5 weeks [12]. In our study, the healing time for hybrid seton was found to be 15.76±3.34 weeks, and for the LAFT technique, 4.25±1.04 weeks, and the healing time for hybrid seton was longer than that of the LAFT technique.

Conclusion

Although it is not a gold standard treatment for high-located anal fistulas, it is considered a preferable method in terms of preserving sphincter functions, postoperative pain comfort, and healing time. However, considering the surgical recurrence rates, it is higher than hybrid seton. We think that prospective studies comparing with other techniques are needed to access more detailed information.

Study limitations

The study is retrospective and the number of cases is low, which causes a limitation in the study.

Ethics

Informed Consent: All patients were informed about the procedure, and certificate of consent was taken for every patient.

Conflict of Interest statement

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

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