



Research Article

Is Botox an Alternative to Surgery for Anal Fissure?

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Abstract

Objective To compare the results of the lateral internal sphincterotomy(LIS) technique and high dose botulinum toxin, which is one of the treatments applied when medical treatment is insufficient in anal fissure.

Materials and methods The files and outpatient clinic notes of the patients who underwent lateral internal sphincterotomy and botulinum toxin injection due to lack of response to medical treatment due to anal fissure between May 2020 and May 2023 were examined retrospectively. Preoperative and postoperative visual analog scale (VAS) scores, five-point horizontal scale (FPHS) scores, hospitalization times, fissure locations, follow-up periods, anesthesia type, and postoperative complications of the patients were recorded.

Results Total 30 LIS and 24 botulinum toxin-treated patients were included. Hospitalization time was shorter in botulinum toxin groups than in the LIS group ($p<0.001$). First-week VAS score was lower than botulinum toxin injection group ($p<0.001$). There was no significant difference between the groups in terms of FPHS scores, follow-up periods, and recurrence ($p:0.15$, $p:0.07$, $p:0.14$).

Conclusion: While LIS is faster in the early period, botulinum toxin injection can be considered as an alternative to surgical treatment for long-term results.

Keywords: anal fissure, sphincterotomy, botox

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1. Introduction

Currently, the most commonly adopted surgical method in the treatment of anal fissures is lateral internal sphincterotomy (LIS), with a rate of 95% [1]. However, the surgical procedure has certain complications [2]. There are currently various nonsurgical methods for the treatment of anal fissure [3]. Botulinum Toxin (BoNT) injection is one of these methods, and it is an alternative treatment method for patients who do not prefer surgical treatment[4]. In our study, we aimed to compare LIS, a surgical method, with BoNT and to reveal the differences between them.

2. Materials and Methods

We analyzed the data of patients who did not benefit from medical treatment for anal fissure and underwent BoNT and LIS between May 2020 and May 2023. Demographic data were evaluated. Preoperative and postoperative VAS scores and FPHS scores were noted. The duration of hospitalization, fissure locations, follow-up periods, type of anesthesia, postoperative complications, and recurrence rates were evaluated retrospectively.

3. Statistical Analysis

For data evaluation, the SPSS 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, Student's *t*-test were used for the comparison of two groups. When the Student's *t*-test did not provide preconditions, the Mann Whitney-U test was used. Categorical data

were analyzed using Fisher's Exact Test and Chi-Square Test. $P < 0.05$ was considered statistically significant.

4. Results

The number of patients who underwent LIS operation (group 1) was 30, and the number of patients who underwent BoNT (group 2) was 24. There were 19 females (63.3%) and 11 males (36.7%) in group 1 and 19 females (79.2%) and 5 males (20.8%) in group 2. Group 1 mean age was 33.36 ± 8.33 years, and group 2 mean age was 28.5 ± 4.37 years ($p:0.002$). Preoperative VAS scores in groups 1 and 2 were 7.86 ± 1.16 and 7.83 ± 1.16 , respectively ($p:0.9$). Postoperative VAS scores in the 1st week were calculated as 1.3 ± 0.95 and 3.37 ± 1.43 , respectively ($p < 0.001$). FPHS scores were calculated as 4.5 ± 0.62 and 4.16 ± 0.86 in groups 1 and 2, respectively ($p: 0.15$). The duration of hospitalization was 14.26 ± 6.25 hours in group 1 and 1.2 ± 0.41 hours in group 2 ($p: < 0.001$). The follow-up duration was 39 ± 12.62 and 31.04 ± 8.77 weeks in groups 1 and 2, respectively ($p:0.07$). Three patients (10%) in group 1 and 6 patients (25%) in group 2 had recurrence ($p:0.75$). Four patients in group 1 presented with postoperative complications, and no postoperative complications were observed in group 2 (< 0.001). In group 1, 29 patients underwent spinal anesthesia, and one patient underwent local anesthesia, while none of the patients in group 2 underwent anesthetic intervention ($p < 0.001$). In Table 1, demographic data and study results are presented in detail.

5. Discussion

LIS is an essential method in anal fissure in terms of getting quick results. There are studies indicating that patients have more complaints and pain in the early postoperative period, as it takes time to see the effect of BoNT injection regarding pain and

TABLE 1: Demographic data and study results.

Factors	LIS(n:30)	Botoks(n:24)	p
Age(year)	33.36±8.33	28.5±4.37	0.002
Gender(n)	F: 19(63.3%) M: 11(36.7%)	F:19(79.2%) M:5(20.8%)	0.2
Preop VAS	7.86±1.16	7.83±1.16	0.9
First week VAS	1.3±0.95	3.37±1.43	<0.001
FPHS score	4.5±0.62	4.16±0.86	0.15
hospitalization time(hour)	14.26±6.25	1.2±0.41	<0.001
Follow up time(week)	39±12.62	31.04±8.77	0.07
Procedure	30	24	
recurrence	3(10%)	6(25%)	0.14
Fissure placement	A:10(33.3%) P: 20(66.7%)	A: 9(37.5%) P:15(62.5%)	0.75
Complication(n)	4(13.3%)	0	0.06
Anesthesia	S: 29(96.7%) L:1(3.3%)	L:24(100%)	<0.001

n: number; F: female; M: male; A: anterior; P: posterior; S: spinale; L: local

symptom control [5]. In our study, postoperative first-week VAS scores were significantly lower in group 1 compared to group 2.

Even though LIS remains the gold standard in the treatment of anal fissures, complications such as incontinence, perineal abscess, perianal hematoma, and rectal bleeding may occur after surgical intervention [6]. Several studies report postoperative rectal bleeding rates as 34% [7]. In our study, complications occurred in 4 patients in group 1, and no significant statistical difference was found between the two groups.

The majority of the patients who underwent LIS in group 1 in our study underwent spinal anesthesia, and therefore, the duration of hospitalization was longer compared to group 2. Although the recurrence rates were found to be 25% in group 2 and 10% in group 1 in the BOnT group of our study, no significant difference was observed. Since our follow-up durations were calculated as 39±12.62 weeks in group 1 and 31.04±8.77 weeks in group 2, we consider that longer follow-up periods would provide more reliable results regarding precise results. Recurrence rates were found to be significantly higher (50%) in studies with longer follow-up [8].

6. Conclusion

LIS, which is considered the gold standard among the various treatment methods defined in the treatment of anal fissures, is both more invasive and has higher complication rates compared to other methods. Botulinum toxin injection, one of the less invasive methods, can be regarded as an alternative treatment method in selected patients due to its low complication rates, although recurrence rates are higher.

Ethical considerations

Consent was obtained from the patients for the study. However, since the study was the result of a retrospective file scan, ethics committee approval was not received.

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Conflicts of interest

The authors declare no competing interests.

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