

Evaluation of Patient Satisfaction After Lateral Internal Sphincterotomy For The Treatment Of Chronic Anal Fissure

Mutlu Sahin*, Dogan Ozturk

Department of General Surgery, Keçioren Training and Research Hospital, Ankara, Turkey

ABSTRACT

Lateral internal sphincterotomy (LIS) improves chronic fissures, but is associated with potential long-term complications such as fecal incontinence (FI). Our aim in this study is to reveal the effects of chronic anal fissure (CAF) and related FI on quality of life (QOL), and to evaluate the changes in patients' QOL after LIS operation.

Patients who had undergone open LIS operation between 2016 and 2019 were included in the study. "Short Form-36 (SF-36)" QOL assessment form was applied to all patients, in the preoperative period and on the sixth month and / or first year follow-up. A total of 86 patients were included in the study. In the SF-36 QOL scale comparisons of patients with and without FI; general health (GH), physical condition (PHC), psychological state (PSS) and social condition (SC) subscale scores were found to be statistically significantly different ($p < 0.05$). SF-36 QOL subscale scores were found to be higher in the postoperative period compared to the preoperative period. The differences were statistically significant for GH, PHC and SC ($p = 0.002$, $p = 0.005$, $p = 0.001$, respectively), except for PSS ($p = 0.178$).

LIS is a reliable operation with low complication rates, other than fecal incontinence. Fecal incontinence reduces the quality of life score, but can be ignored. Although there is a certain level of fecal incontinence risk after LIS operation, the quality of life increases in the majority of patients after this operation. Therefore, it is appropriate to recommend LIS operation to CAF patients, for a better quality of life.

Key Words: Anal fissure, lateral internal sphincterotomy, quality of life, fecal incontinence

Introduction

Anal fissure is a common condition that usually affects young and middle-aged people. It is the most common benign anorectal disease after hemorrhoids. It is generally presented after constipation that occurs after an unhealthy and irregular diet. Despite the emergence of new modalities in the conservative treatment of chronic fissures, such as nitric oxide donors, surgical treatment is often needed.

The most effective method accepted in surgical treatment is lateral internal sphincterotomy (LIS) method. In addition, there are different surgical techniques such as fissurectomy, fissure excision (1) or anoplasty. LIS improves chronic fissures in the anal area in more than 90% of cases, but is associated with potential long-term complications. Incontinence complaints such as flatus and fecal contamination are troublesome complications that can occur in 35% of patients with sphincterotomy (2-4).

Although the efficacy and complications of open LIS have been extensively studied, patients' perception of outcome is rarely evaluated (5). A study, comparing the quality of life of patients with chronic anal fissures (CAF) before the operation and at the sixth month after open LIS surgery, found an improvement in the quality of life of patients at 6 months after LIS (6). Our aim in this study is to reveal the effects of CAF and related fecal incontinence on quality of life, and to evaluate the changes in patients' quality of life with the LIS operation.

Materials and Methods

A retrospective and cross-sectional study was planned. Approval was obtained for the study with the decision of the Ethics Committee of Keçiören Training and Research Hospital, number 2012-KAEK-15/1990 and date 23 October 2019

*Corresponding Author: Mutlu Sahin, University of Medical Sciences, Keçioren Training and Research Hospital, Department of General Surgery, Pınarbaşı mahallesi Sanatoryum caddesi Ardahan sok. No:1 Keçioren 06280, Ankara, Turkey

E-mail: drmutlu@gmail.com, Phone: +90 (312) 356 90 00, Fax: +90 (312) 356 90 02

ORCID ID: Mutlu Sahin: 0000-0003-0371-4095, Dogan Ozturk: 0000-0003-1754-9246

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Image 1. Chronic anal fissure (red arrow=fissure tract, blue arrow=skin tag)

Training and Research Hospital Ethics Committee dated 23.10.2019. One hundred and twenty-three patients who had undergone open LIS operation with the diagnosis of CAF, between September 2016 and September 2019, were planned to be included in the study. All patients included in this study were operated by the same surgeon. In the preoperative period, "Short Form-36 (SF-36)" quality of life assessment form was applied to all patients to undergo LIS operation. However, 86 patients who were invited for the sixth month and/or first year follow-up, by the surgeon who performed the operations, and who accepted to fill the SF-36 quality of life form postoperatively, were included in the study.

The demographic data and the operation data of the patients were recorded by examining the patient files in the database. Patients who agreed to fill in SF-36 life quality form were taken to the interview room, where only the patient and the doctor were present for one to one interview. First, a questionnaire was filled in which preoperative and postoperative clinical findings of CAF were questioned. Then, filling the SF-36 form was applied (7). The questions were asked to

the patients face to face and individually. The SF-36 form was evaluated under four main headings. These were divided into general health (GH), physical condition (PHC), psychological state (PSS) and social condition (SC), and scoring was done accordingly. Scoring was done between 0 and 100. The higher score indicated a better functioning level. The patients who described fecal incontinence were scored separately with the "Cleveland Clinic California Fecal Incontinence Score" (CCF-FI scoring) (8).

All of the operated patients were those, who had complaints for at least 2 months. The patients included in the study were definitely treated at least twice in the preoperative period. Patients whose complaints started in the past year and whose medical complaints did not regress after at least two sessions of medical treatment were included in the study. However, patients who had CAF history for long years and had big skin tags (Image 1) during their physical examination were operated without planning a new medical treatment.

Statistical Analysis: Continuous variables, mean \pm standard deviation, categorical data were expressed as numbers and percentages. In the intergroup analysis of continuous variables, normality analyzes were done with the Kolmogorov-Smirnov Goodness of Fit Test. Mann Whitney U Test was used in the analysis between the groups, since the continuous variables did not conform to the normal distribution. "Wilcoxon Signed Ranks Test was used for the comparison of preoperative and postoperative quality of life status." The comparison of categorical data was made with the Chi-Square Test. Analyzes were made with IBM SPSS Package Program version 24.0 (IBM Corporation, Armonk, NY, USA). Statistical significance level was considered as $p < 0.05$.

Results

A total of 86 patients, 48 female (55.81%), 38 male (44.18%), were included in the study. The average age of men was 38.15 ± 13.39 (18-66), and the average age of women was 43.37 ± 11.38 (20-68). The reason for the application before the decision of operation is shown in Table 1. Accordingly, no statistically significant difference was found between men and women in terms of application reasons ($p > 0.05$). As can be seen from this table, 70 (81.39%) patients had pain symptoms. The number of patients with constipation was 60 (69.76%). Whilst questioned

Table 1. Comparison of reasons for application by gender

Application reason	Female	Male	Total	P
	n (%)	n (%)	n (%)	
Pain	16 (%33.3)	16 (%42.1)	32 (%37.2)	0.977*
Bleeding	4 (%8.3)	3 (%7.9)	7 (%8.1)	
Pain +swelling	6 (%12.5)	4 (%10.5)	10 (%11.6)	
Itching	5 (%10.4)	4 (%10.5)	9 (%10.5)	
Pain + bleeding	9 (%18.8)	6 (%15.8)	15 (%17.4)	
Pain +itching	8 (%16.7)	5 (%13.2)	13 (%15.1)	
Total	48 (%100)	38 (%100)	86 (%100)	

* Chi-square Test

Table 2. Comparison of preoperative and postoperative quality of life status for preoperative fecal incontinence (+) patients (n=26)

SF-36 Quality of Life Scale	Preop. Mean±SD	Postop. Mean±SD	P
GH	93.84±2.98	95.69±3.23	0.004*
PHC	80.61±7.06	83.69±9.74	0.041*
PSS	83.00±5.60	84.15±9.92	0.499*
SC	90.07±4.97	94.07±7.25	0.012*

*Wilcoxon Signed Ranks Test

GH: General Health, **PHC:** Physical Condition, **PSS:** Psychological State, **SC:** Social Condition

in terms of defecation habits, it was learned that 34 (39.53%) of the patients defecate every day, 32 (37.2%) every two or three days, and 20 (23.25%) defecate longer than three days. Of the 86 patients included in the study, 71 (82.55%) had a toilet phobia before the operation, or they were concerned when they needed to defecate. This finding was seen in only 19 (22.09%) patients within 6 to 12 months after the open LIS operation.

When the pre- and postoperative quality of life scores of those who had fecal incontinence preoperatively (n = 26) were compared; It was found that the GH, PHC, and SC quality of life subscales increased significantly (Table 2).

SF-36 quality of life subscale scores (GH, PHC, PSS and SC) were found to be higher in the postoperative period compared to the preoperative period. The differences were statistically significant for GH, PHC and SC ($p=0.002$, $p=0.005$, $p=0.001$, respectively), except for PSS ($p=0.178$) (Table 3).

There were different sizes of fecal incontinence in 26 (30.23%) patients in the preoperative period and in 21 (24.42%) patients in the postoperative period. Eleven of these 21 patients already had fecal incontinence complaints before the

operation. As a complication related to the operation, it was observed that 10 (11.62%) patients had different levels of fecal incontinence in the following year the operation. The preoperative fecal incontinence findings of the patients, categorized by CCF-FI scoring are shown in Table 4, and the postoperative scores in Table 5.

In addition, a 39-year-old female patient had severe anal pain and swelling on the 3rd day after the operation. The patient was found to have anal abscess on physical examination, and abscess drainage was performed under local anesthesia. She was discharged with antibiotherapy and hot water sitting bath recommendations. There was no pathological finding in her controls.

Discussion

CAF can be distinguished among benign anorectal diseases with the complaint of painful defecation. The prominent view in the etiology is the hypothesis of the increased resting pressure of anal sphincter caused by the hypertrophy of the internal sphincter, which results with an ischemia in anoderm (9). They develop equally often in both sexes, and more often they tend to occur in

Table 3. Comparison of preoperative and postoperative quality of life scores

SF-36 Quality of Life Scale	Preoperative	Postoperative	p
	Mean±SD	Mean±SD	
GH	96.20±3.06	97.06±2.85	0.002*
PHC	85.46±7.62	86.97±9.29	0.005*
PSS	86.39±5.19	87.23±7.93	0.178*
SC	92.44±5.46	94.86±5.83	0.001*

*Wilcoxon Signed Rank test

GH: General Health, **PHC:** Physical Condition, **PSS:** Psychological State, **SC:** Social Condition**Table 4.** Preoperative CCF-FI scores (*=Cleveland Clinic California-Fecal Incontinence)

CCF-FI* Score	n	%
0	60	69.76
1	8	9.3
2-3	6	6.97
4-5	5	5.81
5-6	4	4.65
7-8	2	2.32
10	1	1.16
Toplam	86	100

Table 5. Postoperative CCF-FI scores (*=Cleveland Clinic California-Fecal Incontinence)

CCF-FI* Score	n	%
0	67	77.9
1	5	5.81
2-3	5	5.81
4-5	6	6.97
5-6	2	2.32
7-8	1	1.16
9-10	2	2.32
Toplam	86	100

young and middle-aged people. In this study, 55.81% of the patients were female and 44.18% were male. The average age of 86 patients was calculated as 41.06 years.

CAF usually manifests as a painful linear ulcer extending in the posterior midline of the anal canal. An ulcer, formed by a rupture of the squamous epithelium extending from the dentate line to the anal threshold is called, anal fissure. In addition, skin tag observed in the anoderm is an important finding of obstinacy. The most common application complaint is severe pain. Patients describe anal fissure pain as "a broken glass piece passes through the anus" during defecation, and they usually talk about a burning pain that can remain a few hours after defecation (10). The most common application symptom of

the patients included in this study was pain that was seen in 81.39% of the patients. While 37.20% of these patients presented only with pain complaint, the remaining 44.12% had complaints of bleeding, itching or swelling that accompanied the pain.

In acute anal fissures and patients who are afraid of surgery, hot water sitting baths and medical treatments are the first choice. The first thing to do in medical treatment is to relieve constipation. For the healing of the fissure, creams containing diltiazem or glycerin trinitrate can be used (11). Application of botulinum toxin has also been shown to be very effective in the short term (12). However, it is thought that it is not a good alternative to surgical treatment due to its high recurrence rates in the long term (13). For these

reasons, the gold standard treatment method of CAF is open or closed LIS (14). Open LIS was applied to all patients in this study.

Although there is great relief in patients after LIS operation, complication rates cannot be ignored. Although complications such as infection, abscess, fistula and hematoma can be seen in the early period after LIS, they rarely occur (15). In this study, anal abscess occurred in only one patient and treated with early intervention. When the history of this female patient was examined in detail, it was learned that the patient was treated several times due to immunodeficiency and often had soft tissue infections. However, it was observed that the patient did not give this information before the operation, and therefore the necessary prophylaxis was not applied.

However, the most important complication that is common in the early period, which is later permanent and affects the quality of life, is fecal incontinence. While the frequency of fecal incontinence reaches 47% in the early period, 15% of it is permanent (16). One of the methods that best describe the level of fecal incontinence, which can be in the form of gas, liquid or solid stool incontinence, is the CCF-FI scoring system (8). In this study, 30.23% of the patients had fecal incontinence in the preoperative period and 24.42% had in the postoperative period. However, most patients who described postoperative incontinence also had fecal incontinence before the operation. As an operation-related complication, 10 (11.62%) patients had different levels of fecal incontinence.

Many patients with acute or CAF have reported lower quality of life due to pain (17). SF-36 quality of life assessment form is a 36-item questionnaire based on the patient's answers. Apart from the studies related to the CAF (5, 6, 17), it has been used in the cases of comparing many diseases or operation results in the field of health. In a study, investigating the effects of open LIS under local anesthesia on quality of life with the gastrointestinal quality of life index (GIQOL), it has shown that patients' GIQOL has improved significantly, regardless of surgical complications or postoperative continence disorders following LIS (18). A study examining the effect of postoperative anal incontinence on quality of life reported that quality of life is rarely affected, even if there are measurable functional disorders after LIS (5). Interesting results have emerged in a prospective study designed to compare the quality of life of CAF patients before surgery and after six months from open LIS. According to SF-36

questionnaire, patients showed improvement in quality of life at 6 months after LIS operation, but patients with postoperative continence disorder showed less satisfaction (6). In this study, all subscale scores were found to be statistically significant in patients with and without fecal incontinence in the preoperative and postoperative period. This is a clear indication that fecal incontinence reduces the quality of life score. In general, when patients' preoperative and postoperative quality of life scores are compared, it is seen that GH, PHC and SC subscale scores increase with LIS operation. This may mean that with LIS surgery, patients' pain-related complaints are reduced and their overall health and quality of life improves. However, there was no psychologically significant improvement in patients with excessive expectations. These patients are especially those with preoperative fecal incontinence who do not recover, or patients with newly emerging fecal incontinence.

Although LIS has the best results in the treatment of CAF with a success rate of over 90%, there is a risk of fecal incontinence that cannot be ignored (19). However, the vast majority of patients are still happier after this surgery. When we asked 86 patients who participated in this study, "Are you satisfied with this surgery?", 79 of the patients (91.86%) stated that they were satisfied. Only 7 (8.13%) patients stated that they regret this surgery and did not see any benefit. We believe that one of the most important factors in this satisfaction is the comfort that patients' obtain during defecation. Because 82.55% of the patients included in the study were concerned about going to the toilet before the operation, but this rate decreased to 22.09% within 6 to 12 months after the LIS operation. For these patients, painless defecation is undoubtedly one of the important factors that improve the quality of life.

In the treatment of CAF, which is characterized by severe pain, the best results are obtained with LIS. LIS is a reliable operation with low complication rates, other than fecal incontinence. Fecal incontinence reduces the quality of life score in both preoperative and postoperative period. On the other hand, is present in the majority of CAF patients during the preoperative period. Although there is a certain level of fecal incontinence risk after LIS operation, the quality of life increases in the majority of patients after this operation. This may mean that with LIS surgery, patients' pain-related complaints are reduced and their overall health and quality of life improves. Therefore, it is an appropriate option to recommend LIS

operation to CAF patients, for a better quality of life.

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