

The comparison of cosmetic results of Karydakakis and Limberg flap Techniques in pilonidal sinus

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ABSTRACT

Background: Repairing of pilonidal sinus with flap techniques is very effective in prevention of recurrence. Karydakakis and Limberg are two popular flap techniques. Their postoperative clinical outcomes are almost the same in the literature. Recently, all surgical techniques try to be less invasive as minimal as possible with the best cosmetic outcome. The aim of this study is to compare these two techniques in terms of cosmetic results.

Methods: Total 100 patients operated with Karydakakis or Limberg were divided into two groups for comparison of their cosmetic results. Age, gender, BMI and postoperative period are used for demographic comparison and Stony Brook Scar Evaluation Scale (SBSES) was used to compare the cosmetic results of both surgical flap techniques.

Results: We found no difference between the groups in terms of demographic features but the SBSES scores was found higher in Karydakakis group.

Conclusion: Karydakakis technique might be preferred more than limberg technique with its better cosmetic result.

Keywords: minimal invasive, cosmetic, pilonidal sinus, flap technique

Introduction

Pilonidal sinus is the most common chronic disease of the sacrococcygeal region. Even most of the studies reported an incidence of 26/100,000 in the worldwide, in some of them the incidence was found around 8% among men, that is more common especially in Mediterranean region countries (1-5). It was first described by Herbert Mayo in 1833. Treatment options range from microsinusectomy to excision with flap repairing (6). Karydakakis and

limberg flap repairs are most popular surgery techniques in the literature, and also mostly preferred techniques in our clinic. The search for minimally invasive and more cosmetic techniques with similar clinical results must be the target of the preferred treatment technique. No studies have been conducted comparing these two techniques only in terms of objective cosmetic results. We aimed to compare the cosmetic results of these two techniques, those have almost the same clinical results in the literature.

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Patients and Methods

Patients, who underwent karydakis and limberg flap repair surgery for pilonidal sinus disease in Acibadem Fulya Hospital and Esenyurt State Hospital general surgery clinics in between 2019 and 2023, were invited by phone for clinical examination. First 50 patients for each surgery group who accepted to be in our study were included in this study. Patients with recurrence or who underwent surgical intervention due to recurrence were not included in the study. Two separate groups were formed as Karydakis group (n=50) and Limberg group (n=50). Both groups were evaluated according to demographic features; age, gender and body mass index (BMI).

For comparison of cosmetic results of these two techniques, Stony Brook Scar Evaluation Scale (SBSES), a validated scale specifically to

measure the long-term appearance of scars was used (Table 1) (7). For statistical analysis SPSS Student -t test was used.

The study was designed in accordance with Principles of the Declaration of Helsinki and ethically approved by Committee of Ethics of Acibadem University (2020/05).

Results

The mean age was 24 (17-38), and the female-male ratio was 16/84. There was no difference between the groups in terms of postoperative period, gender ratio, and BMI. The cosmetic scores of the karydakis group were found to be significantly higher. Demographic features of the patients are summarized in Table 2, and SBSES scores are summarized in Table 3.

Table 1. Stony Brook Scar Evaluation Scale (SBSES)

	Scar Category	Points
Width	>2 mm	0
	< 2 mm	1
Height	Elevated/Depressed in relation to surrounding skin	0
	Flat	1
Color	Darker than surrounding skin	0
	Same color or lighter than surrounding skin	1
Suture Marks	Present	0
	Absent	1
Overall Appearance	Poor	0
	Good	1

Total Score = Sum of individual score, from 0 (worst score) to 5 (best score)

Table 2. Demographics of Patients

	Group 1	Group 2	P
Age (Mean)	26.45±5.35	27.73±6.18	0.08
F/M Ratio	9/41 (21.9%)	7/43 (16.3%)	0.07
BMI	24.53±5.5	25.12±5.8	0.1
Mean	15.5±3.3	16.2±3.6	0.1
Postoperative Period (Month)			

Table 3. SBSES Scores

	Group 1	Group 2	P
Width	43	32	0.02
Height	46	29	0.01
Color	47	48	0.09
Suture Marks	14	9	0.01
Overall Appearance	47	36	0.04
Mean Total Score	39.4	30.8	0.01

Discussion

Even though there are some studies still searching whether pilonidal sinus disease is a congenital or acquired disease, the common view is that it is more of an acquired disease (8-10). The treatment of the disease is surgery, and lower recurrence rates make surgeries performed with flaps advantageous over primary repair, making it the preferred surgical technique (11-15). Comparing these 2 most preferred flap techniques (Karydakakis and Limberg flaps) in their systematic review and meta-analysis, Gavriilidis et al. evaluated both techniques in terms of recurrence and complications and concluded that there was no significant difference between them (16).

With the same clinical results, one of these two techniques is preferred according to surgeon's choice. Although these techniques were slightly superior to each other in a limited number of studies comparing operative time, early and late postoperative complications, and recurrence rates, they were not superior to each other in systematic reviews and meta-analyses conducted on this subject (16-18). In the study of Erkent et al., they stated that in the retrospective analysis of 924 cases with flap and primary closure, the primary closure technique was preferred especially in female patients, and cosmetic preferences were at the forefront in this (19).

In the literature, satisfaction questions regarding the incisions were asked to patients after the surgery, while similar rates were reported in the studies, some studies reported that they found a statistically higher satisfaction rate for Karydakakis (20-24). However, in a few of these clinical studies, patients were questioned in terms of scar satisfaction, and it was found higher in Karydakakis group (25,26).

Our study is original in terms of more objective comparison of cosmetic results. The scale, which include the evaluations of both the patient and

the surgeon, is the first objective scale using in a study to compare these two techniques cosmetically. According to SBSES, our study found the cosmetic score to be significantly higher in the Karydakakis group than in the Limberg group.

So we may conclude that Karydakakis technique may be preferred instead of Limberg technique with its better cosmetic outcome.

Conclusion

Pilonidal sinus is a common disease of the intergluteal region. Flap repairs are very effective in its treatment. Karydakakis and Limberg flap techniques are the 2 important surgical techniques preferred in this region diseases. Today, where minimally invasive and more cosmetic surgery options are more preferred, we aimed to compare these two surgical techniques in terms of cosmetic outcome. For such an objective study, which has never been done before, we used the Stony Brook Scar Evaluation Scale. As a result of our study, we found the cosmetic score of the Karydakakis flap technique to be higher than the limberg flap technique.

As a result, we revealed out that the choice of the karydakakis flap in intergluteal pilonidal sinus disease has better cosmetic results.

Ethical approval

The study was approved by Acibadem University Ethics Committee (2020/05).

Author contribution

The authors confirm contribution to the paper as follows: Study conception and design: US; data collection: HK; analysis and interpretation of results: HK; draft manuscript preparation: US, MP. All authors reviewed the results and approved the final version of the article.

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Conflict of interest

The authors declare that there is no conflict of interest.

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