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Original Article

Pilonidal disease management results

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ABSTRACT

Objective: This study aimed to compare the effectiveness, recurrence, and complication rates of different surgical methods used in the treatment of pilonidal sinus disease.

Methods: A total of 49 patients who underwent elective surgery between September 2023 and September 2024 were retrospectively evaluated. Surgical techniques included unroofing, liquid phenol application, Limberg flap, and primary closure. The primary endpoint was recurrence; the secondary endpoint was complication rate.

Results: Of the 49 patients, 41 were male and 8 were female. The most commonly performed procedure was unroofing (51.1%). The overall complication rate was 8.4% and recurrence rate was 4.2%. There was no statistically significant difference between surgical methods in terms of recurrence or complications ($p > 0.05$).

Conclusion: Each surgical method may be effective for selected patient groups. Treatment should be individualized based on patient characteristics and surgeon experience. Larger-scale studies with longer follow-up are needed.

Keywords: Pilonidal disease, recurrence, complications, Limberg flap, unroofing, phenol treatment.

Introduction

Pilonidal disease is an infection of the subcutaneous tissue in the gluteal cleft. Acute pilonidal disease may present as an abscess characterised by pain, swelling and redness in the coccyx or as a pilonidal sinus characterised by pain, swelling and sinuses in the chronic period. It is usually seen in men in their twenties. It is more common in hairy men. Obesity, people who drive sitting for a long time, sedentary life, development of furuncles in other parts of the body are also risk factors for pilonidal disease (1).

Discussions about the pathogenesis of pilonidal disease development continue. Although it is historically thought to be embryological development, it is thought that the development of pilonidal disease is a secondary process with the studies of Karydakis and Bascom (2,3). Theories converge on the idea that foreign bodies such as hair, hair, feathers accumulate in the natal cleft and cause inflammation (4).

There is no gold standard method in the treatment of pilonidal disease and various surgical procedures can be applied. Leaving the sinus to secondary healing after primary

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excision, unroofing, Bascom Cleft Procedure, Karydakis Flap, Limberg flap application, phenol application, laser applications are among the preferred methods in current applications (4). In our study, we aimed to evaluate the results of elective pilonidal sinus applications performed in our clinic in the last year.

Material and Method

This study was approved by the institutional ethics committee and informed consent was obtained from all participants. Patients who underwent elective operation by a single surgeon for pilonidal sinus between September 2023 and September 2024 in our clinic were retrospectively evaluated. Patients older than 18 years were included in the study. Patients who underwent abscess drainage due to pilonidal sinus abscess were excluded from the study. Patients who underwent unroofing, primary closure after excision, secondary healing after excision, Limberg flap procedure, liquid phenol due to pilonidal disease were included in the study. The study's primary endpoint is the recurrence rates during the follow-up period, and the secondary endpoint is the complication rates of the procedures.

Patient data were analysed by examining outpatient clinic records and operation notes. The data obtained were transferred to the database prepared in Microsoft Excel programme and analysed with Jamovi programme. After descriptive statistics, normality was evaluated by Kolmogrov-Smirnow test in the comparison of groups, Independent T-Test was applied in the comparison of paired groups with normal distribution, and Mann-Whitney-U test was applied in the comparison of paired groups without normal distribution. In the comparison of two or more groups, One Way Anova test was applied for data showing normal distribution and Kruskall-Wallis test was applied for tests that did not show normal distribution. In our study, the confidence interval was accepted as 95% and 0.05 was accepted as the limit for the significance of p value.

Results

A total of 49 patients, 8 females and 41 males, were included in the study. The mean age of the patients was 24.3 ± 5.5 years. Seven (14.9%) of the patients included in the study were recurrence cases. In 25 patients (51.1%) unroofing, in 14 patients (27.7%) liquid phenol, in 9 patients (19.1%) Limberg flap, in 1 patient (2.1%) primary closure after excision was performed (Table 1). 4 patients (8.5%) developed complications secondary to the procedure. One patient with unroofing developed postspinal headache, two patients with liquid phenol developed skin burns outside the procedure area. One patient who was performed Limberg flap operation developed ischaemia at the lower end of the flap. In the patient who underwent Limberg flap, recurrent pilonidal disease which developed in the area of ischaemia at the 6th month of follow-up, unroofing was applied to this patient, the skin healed and no recurrence was detected at the 3rd month control after treatment. One patient who underwent unroofing developed recurrence at the 11th month of follow-up, liquid phenol was applied to this patient and no recurrence occurred after treatment. The mean follow-up period of the patients was 10.5 ± 2.8 months. There was no statistically significant difference between the surgical procedure and recurrence (p:0,843). There was no statistically significant difference between the surgical procedure and the development of complications (p: 0,051) (Table 2).

Table 1. Surgical Procedures Performed

Surgical Procedure	Number	%
Unroofing	25	51,1
Liquid Phenol Application	14	27,7
Limberg Flap Procedure	9	19,1
Primary Closure	1	2,1
Total	49	100

Table 2. Surgical Procedures and Outcomes

Surgical Procedure	Recurrence n, (%)	P value	Complication n, (%)	P value
Unroofing	1 (%2,1)	0,843	1 (%2,1)	0,051
Liquid Phenol Application	-		2 (%4,2)	
Limberg Flap Procedure	1 (%2,1)		1 (%2,1)	
Primary Closure	-		-	
Total	2			

Discussion

The effectiveness and complication rates of surgical methods applied in the treatment of pilonidal disease are frequently discussed in the literature. In our study, the results of different surgical methods applied in our clinic were evaluated retrospectively. The results obtained are largely consistent with the existing literature.

The unroofing method, which was preferred in the majority of our patients (51.1%), is widely recommended and accepted as a minimally invasive method in the literature. The low recurrence rates obtained with the unroofing method support the effectiveness of the method. However, postspinal headache was observed in one patient, indicating that this method may lead to complications, albeit rare. It is also reported in the literature that unroofing is a reliable method with low complication rates (5-8).

The observation of complications such as skin burns in patients treated with liquid phenol reveals the potential risks of this method. Although phenol is an effective treatment option, it is clear that contact with the skin should be carefully controlled during the procedure (9,10). The cases of flap ischaemia and recurrence in patients treated with the Limberg flap method show that there is a risk of complications and recurrence in more invasive methods. The fact that the patient with recurrence was treated with unroofing and a successful result shows that minimally invasive methods can be effective even in cases of recurrence (11).

In our study, there was no statistically significant difference ($p > 0.05$) between the surgical procedures performed and the development of complications and recurrence rates, indicating that each method may offer advantages and disadvantages according to its own patient group. This emphasises that the choice of treatment should be individualised according to patient characteristics, stage of the disease and the experience of the surgeon.

This study has certain limitations. The retrospective design, relatively small sample size—especially in some surgical subgroups—and the short follow-up period may reduce the generalisability of the findings. Additionally, lack of standardized criteria for recurrence and complication definitions may affect outcome interpretation. Prospective, multicentre studies with longer follow-up are needed to validate these findings

Conclusion

In conclusion, surgical methods applied in our clinic were found to be generally effective and safe in the treatment of pilonidal disease. However, the adoption of individualised patient-specific approaches in the selection of methods is critical in reducing complications and recurrence rates. Future large-scale, prospective and long follow-up studies will increase the knowledge in this field.

Ethical approval

This study was approved by the institutional

ethics committee (Decision number: 2025/447, date: 30.04.2025) and informed consent was obtained from all participants.

Author contribution

The author confirm contribution to the paper as follows: Study conception and design: CU; data collection: CU; analysis and interpretation of results: CU; draft manuscript preparation: CU. The author reviewed the results and approved the final version of the manuscript.

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Conflict of interest

The author declare that there is no conflict of interest.

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