



Study of 4,085 Sacrococcygeal Pilonidal Sinus Diseases' Pathological Results in 12 Years

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Abstract

Background: In some minimally invasive approaches, the cavity of the sacrococcygeal pilonidal cyst is not resected. This condition brings to mind the necessity of pathological examination of this cavity. In this study, we aimed to investigate whether or not the resected pilonidal cyst should be examined pathologically.

Methods: Four thousand and eighty-five patients who had undergone resection of a pilonidal cyst were included in the study. Preoperative findings and clinicopathological features were analyzed retrospectively. IBM SPSS Statistics for Windows version 25.0 was used for statistical analyses. Quantitative variables were reported as median (minimum-maximum).

Results: The median age of the patients was 30 (2–87) years. 3,256 (79.7%) patients were male. One hundred and sixty-six (4%) patients were over 50 years. The median pathological specimen length was 5 (0.5–6.5) cm. The median time to pathological result was 6 (0–65) days. The most common diagnosis was a pilonidal sinus (n=3,917, 95.9%). No malignancy was detected after the histopathological examination.

Conclusion: In the absence of suspicious clinical findings, the histopathological evaluation of a resected pilonidal cyst is unnecessary due to the low malignancy rate.

Keywords: Pathology, Pilonidal sinus, Minimally invasive, Marjolin ulcer, Chronic inflammation

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Introduction

Pilonidal cysts occur mostly in the subcutaneous tissue of the upper part of the intergluteal fold, presenting with either a suppurative abscess or intermittent painful drainage from the sinus openings

(1). Penetration of the shed hair into the skin in the gluteal cleft constitutes the etiopathogenesis of the pilonidal cyst (2). Following this, pits develop in the midline, and secondary infection occurs due to a foreign body reaction (2). The worldwide prevalence of pilonidal cyst is between 0–5% (3). In Turkey, this

rate is between 4.6% and 8.3% (4). Most commonly, it occurs between the age of 15-40 years, and it is three times more in men. It is accepted that the etiology is not congenital but acquired (3, 5).

A pilonidal cyst causes pain and purulent drainage, negatively affecting one's quality of life. The treatment of pilonidal cysts ranges from conservative to radical resections. The ideal treatment should be simple to perform and learn, cheap, and minimally invasive; it should also cause minimal discomfort with short bed rest and a low recurrence rate (5, 6). For the reasons listed above, minimally invasive surgical procedures are currently preferred, sometimes without specimen for histopathological examination (7). Is the absence of histopathological examination a problem in terms of treatment strategy? Our aim in this study is to answer this question and to investigate the necessity of histopathological examination of resected pilonidal cysts.

Materials and Methods

This study was approved by the local ethical committee (2021/15304). A total of 4,085 patients underwent surgery for pilonidal cysts between January 2009 and October 2021. The inclusion criteria were the diagnosis of a pilonidal cyst requiring acute or elective surgery with histopathological confirmation. Patients with non-sacroccygeal pilonidal disease and patients without histopathological confirmation who had minimally invasive surgery were excluded from the study.

Statistical Analysis

The Shapiro-Wilk test was performed to determine the normality of the distribution of numerical variables. Numerical variables were defined as median (minimum-maximum). Categorical variables were defined as frequency (percentage). IBM SPSS Statistics for Windows version 25.0 (IBM Corp., Armonk, N.Y., USA) was used for statistical analyses.

Results

Table 1 shows the demographic data and postoperative histopathological results of the patients. The median age of the patients was 30 (2-87 years) years. 166 (4%) patients were older than the age of 50. 3,256 (79.7%) patients were male. The median pathological specimen length was 5 (0.5-65) cm. The median time to pathological result was 6 (0-65) days. Pilonidal sinus was the most common pathological diagnosis (n=3,917, 95.9%). No malignancy was detected after the histopathological examination.

Discussion

Up to now, the largest study that evaluated the pathological results of resected pilonidal cysts in the literature was a series of 2,486 cases by Akin et al.

(3), in which no malignancy was detected. Our study represents the largest series in the field, including a total of 4,085 cases.

Malignant transformation is a rare but known complication for a long-standing pilonidal cyst (8). It is seen in approximately 0.1% of recurrent or complex pilonidal cysts (2). It is thought that free oxygen radicals released by activated inflammatory cells cause genetic damage and malignant transformation (9). The pathogenesis of malignant transformation appears to be similar to other chronic ulcers, such as the marginal ulcer (10). In the literature, the most common cancer of sacrococcygeal pilonidal cyst is squamous cell carcinoma; in addition, basal cell carcinoma, salivary gland adenocarcinoma, and verrucous carcinoma after pilonidal cyst have also been reported (2). Previously, it has been stated that the mean time to malignant transformation is 23 years after the first diagnosis, and the mean age is over 50 years (11). It is accepted that early and effective surgical excision prevents malignant transformation (12).

Nowadays, with a shift toward minimally invasive methods in pilonidal cyst treatment, granulation tissue is mostly removed (3). Most of the time, the specimen is not sent to the pathology department for examination. In the study of Uylas et al. (7) including 1,971 patients, it was stated that routine pathological examination of a pilonidal cyst might be unnecessary except for the long-term presence of the disease, older age, macroscopic suspicion, or recurrence. Similarly, in another study including 320 patients, Otutaha et al. (13) did not find any malignancy and suggested that routine histopathological examination is unnecessary, but the examination should be considered in patients over 50 years of age. Furthermore, Akin et al. (3) stated that examining each pilonidal cyst surgical specimen means extra workload and time loss for pathologists and creates a financial burden for the hospital. Therefore, they recommended histopathological examination only in suspicious cases.

Many studies in the literature offer similar results to ours, where no cases of malignancy were recorded

Table 1: Data of the study group (n=4,085)

Age (years)	30 (2-87)
≥50 years	166 (4%)
Gender (male)	3256 (79.7%)
Pathological specimen length (cm)	5 (0.5-6.5)
Time to pathological result (day)	6 (0-65)
Diagnosis	
Pilonidal sinus	3,917 (95.9%)
Fibrosis and granulation tissue	114 (2.8%)
Foreign body reaction	37 (0.9%)
Keratinous cyst	6 (0.1%)
Fibroepithelial polyp	5 (0.1%)
Dermoid/epidermoid cyst	4 (0.1%)
Hidradenitis suppurativa	1 (0.0%)
Piloma trichome	1 (0.0%)

(1, 2). In contrast, a study from Spain found three squamous cell carcinomas and one basal cell carcinoma in 3,729 patients (0.1%) (14). Moreover, some studies advocate the pathological examination of all pilonidal cyst surgical specimens to exclude malignancy (8).

Conclusion

In conclusion, although malignant transformation is a serious problem, we could not detect any malignancies in 4,085 patients with a pilonidal cyst. In light of our results and the literature data, we believe that routine histopathological examination is unnecessary unless the patient is over 50 years of age or if there are atypical findings such as tissue protrusion or the presence of a long-term, non-healing pilonidal cyst.

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Author Contribution

Study concept and design: AZ, YMB; Acquisition of data: AZ, CAE, SYK; Analysis and interpretation of data: YMB; Drafting of the manuscript: AZ, YMB; Critical revision of the manuscript for important intellectual content: YMB, BHK; Statistical analysis: YMB; Administrative, technical, and material support: SYK; Study supervision: BHK.

Declarations Ethics Approval

This study was performed in line with the principles of the Declaration of Helsinki. This study was approved by the local ethical committee (2021/15304).

Conflicts of interest: None declared.