

# Is Pathological Assessment Necessary for Excised Sacrococcygeal Pilonidal Sinus Specimens?

*Sakrokoksigeal Pilonidal Sinüs Spesmenlerinde Patolojik Değerlendirme Gerekli midir?*

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## Abstract

In some surgical methods, the cavity of the sacrococcygeal pilonidal sinus remains in the patient. This situation leads us to question the necessity of routine pathological examination. Patients undergoing surgical excision for sacrococcygeal pilonidal sinus between January 2016 and March 2020 at Gaziantep Dr. Ersin Arslan Training and Research Hospital were retrospectively screened. Patients with pilonidal sinus in the non-sacrococcygeal region and patients with minimally invasive treatment and without histopathological examination were excluded. Gender, age, operation notes, and pathology results of the patients were analyzed. For all patients, an excision plus flap (Limberg or Karydakis) procedure was performed and the specimen was sent to routine histopathological examination. Of 1971 patients who underwent surgery for sacrococcygeal pilonidal sinus, 1551 (79%) were male and 420 (21%) were female, with an average age of 24 years (13-66). None of the pathological findings revealed any malignancy. The rate of malignancy reported in the literature is not in concordance with minimally invasive procedures in which pathology samples are not taken. Except in cases of prolonged duration of disease, elderly age, macroscopic suspicion, or recurrence, we believe that routine pathological examination of the pilonidal sinus may be unnecessary.

**Keywords:** Pilonidal sinus, carcinoma, pathology, squamous cell carcinoma, phenol.

## Özet

Pilonidal sinüsün bazı cerrahi yöntemlerinde hastada sakrokoksigeal pilonidal sinüs boşluğu kalmaktadır ve bu durum bizi patolojik incelemenin gerekliliğini sorgulamaya yöneltmiştir. Ocak 2016-Mart 2020 tarihleri arasında Gaziantep Dr. Ersin Arslan Eğitim ve Araştırma Hastanesi'nde sakrokoksigeal pilonidal sinüs için cerrahi eksizyon uygulanan hastalar retrospektif olarak tarandı. Sakrokoksigeal bölge dışındaki pilonidal sinüsü olan hastalar, minimal invaziv tedavi gören ve histopatolojik incelemesi olmayan hastalar çalışma dışı bırakıldı. Hastaların cinsiyeti, yaşı, ameliyat notları ve patoloji sonuçları analiz edildi. Tüm hastalara eksizyon artı flep (Limberg veya Karydakis) prosedürü uygulandı ve spesmenler rutin histopatolojik incelemeye gönderildi. Sakrokoksigeal pilonidal sinüs nedeniyle ameliyat edilen 1971 hastanın 1551'i (% 79) erkek, 420'si (% 21) kadındı ve yaş ortalaması 24 (13-66) idi. Patolojik bulguların hiçbiri malignite göstermedi. Literatürde bildirilen malignite oranı, patoloji örneklerinin alınmadığı minimal invaziv prosedürlerle uyumlu değildir. Uzun süreli hastalık, yaşlılık, makroskopik şüphe veya nüks durumları dışında pilonidal sinüsün rutin patolojik incelemesinin gereksiz olabileceğine inanıyoruz.

**Anahtar Kelimeler:** Pilonidal sinüs, karsinom, patoloji, skuamöz hücreli karsinom, fenol.

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## 1. Introduction

Pilonidal sinus is a benign condition, primarily in the sacrococcygeal region, that may cause abscesses, cellulitis, or recurrent sinus tracts. Risk factors include male gender, obesity, and excessive hair growth (1). It is most frequently seen in patients aged 15 to 40 years but is also rarely seen in those over the age of 50 (2). Treatment options include conservative methods such as phenol application, simple incision and drainage, excision, and unroofing, as well as surgical methods such as advancement flaps, cleft lift closure, and Limberg flaps (3).

Histopathological examination of pilonidal sinus specimens detects malignancies only rarely (4, 5); the routine examination is therefore controversial (6-8). Minimally invasive techniques have been successfully used in the pilonidal sinus, such as cleaning the cavity hair, destruction of the cavity of the sinus with silver nitrate and phenol, and destruction of the fistula tract with laser (9-13). These techniques have been used widely and reliably, leading us to question the necessity of histopathological examination. Here, we discuss the pathological findings of the patients who underwent surgery for sacrococcygeal pilonidal sinus in our clinic in the light of the literature.

## 2. Materials and Methods

This study was approved by the Gaziantep University Ethical Community (2020/177) and registered in an international database (ClinicalTrials.gov NCT 04356768). This study has been conducted in accordance with the Strengthening the Reporting of Cohort Studies In Surgery (STROBE) criteria (14). Patients who were treated for pilonidal sinus between January 2016 and March 2020 at Gaziantep Dr. Ersin Arslan Training and Research Hospital were retrospectively screened. In our clinic, pilonidal sinus specimens are routinely sent to the pathology department for histopathological examination for medico-legal reasons. Patients with pilonidal sinus in the non-sacrococcygeal regions (intermammary, umbilical, etc.) and patients without histopathological examination who had minimally invasive treatment were excluded from the study. A

total of 1971 patients who underwent surgery for sacrococcygeal pilonidal sinus met the inclusion and exclusion criteria and were included in the study. Gender, age, operation grade and pathology results of the patients were analyzed. Statistical analyses were performed using SPSS v22.0 software (IBM, Armonk, NY, USA). Quantitative variables were expressed as mean  $\pm$  SD, median, min-max, and interval. Qualitative variables were reported as numbers and percentages (%). The Shapiro-Wilk test was used to assess the normality distribution of quantitative variables. While means and standard deviations are used for homogenous distributions, medians and ranges are given for heterogeneous distributions. Fisher's Chi-Square test was used to compare qualitative variables. The Mann-Whitney U test was used for heterogeneous distributions and Student's t-test was used for homogeneous distributions. A p-value below 0.05 was considered statistically significant.

## 3. Results

Preoperative diagnosis was based on clinical findings. A total of 1971 patients were included in the study and analyzed; 1551 (79%) of the patients were male and 420 (21%) were female. The age distribution of the patients was not homogeneous (Shapiro-Wilk test,  $p < 0.05$ ), and the overall average age was 24 years (13–66). The mean age was 25 (15–66) for male patients and 21 (13–51) for female patients. All patients underwent an excision plus flap (Limberg or Karydakis) operation, and all specimens were sent to routine histopathological examination.

No significant pathological finding was found in 1284 patients (65%). The pathological findings of the remaining 687 patients (35%), listed in order of frequency, included foreign body ( $n=603$ ), fibrosis ( $n=54$ ), chronic inflammation ( $n=24$ ), pseudoepitheliomatous hyperplasia ( $n=6$ ), epidermoid cyst ( $n=2$ ), and dermoid cyst ( $n=1$ ). No malignancy was detected in any patient.

#### 4. Discussion

The most frequent complications of pilonidal sinus are abscesses and cellulitis, but in very rare recurrent cases, it might cause malignancy (0.1%) (15, 16). There is a wide spectrum of treatment for pilonidal sinus, from minimally invasive treatments to surgical excision. In most minimally invasive techniques, specimens are not routinely taken for histopathological examination. Phenol application is a fast and effective treatment for pilonidal sinus without acute or chronic disease and is a minimally invasive method with a strong recommendation based on moderate-quality evidence, 1B. (17). Phenol application is a simple procedure that can be performed with local anesthesia but requires patience for both the surgeon and the patient. Studies have reported successful treatment of the pilonidal sinus at a rate of 70–95% in 14–56 months (18). Pit-picking and sinus cavity destruction with laser or silver nitrate are other minimally invasive methods (12, 19); improvement in pit excision has been reported at a rate of 79% (20), whereas the success rate via laser ablation is reported as 80–90% (11).

The satisfactory results, rapid improvement, possibility of outpatient treatment, and use of only local anesthesia have increased the acceptance of these non-invasive techniques, in all of which the cavity of the sinus remains in the patient. Because the cavity of the sinus remains and no pathological specimens are taken, a malignancy could theoretically be missed. However, to our knowledge, there has been no such reported case.

After surgical excision of pilonidal sinus, specimens are usually sent for pathological examination. Some authors suggest that the pilonidal sinus excision material should be examined after any surgery, whereas some advocate that only suspicious cases (such as prolonged duration of development or patient age over 50 years) should be sent for histopathological examination (6-8). The common feature of cases with malignancy is

that they have been treated repeatedly for recurrent pilonidal sinus (21-23). A published review of the development of malignancy in the pilonidal sinus by Eryilmaz et al. identified 83 patients with malignancies (4); a PubMed literature review found three additional reported cases (6, 20, 21). The average age of these 86 patients was 55.3, and the age range was 18–83. Malignancy is more common in men, with a male/female ratio of 4.7:1. Most of the pathology diagnoses in these patients were squamous cell carcinoma, detected in 76 (89.4%). Other diagnoses included epidermoid carcinoma, basal cell carcinoma, and malignant degeneration. Besides, there are also series without malignancy (8, 18). In our clinic, a total excision plus flap (Limberg or Karydakı) operation was performed in all 1971 patients, with routine histopathological examination performed for medico-legal reasons. The average age of our patients was 24 years (13-66), the male/female ratio was 3.7:1, and no malignancy was detected in any patient.

Our study includes a large number of patients who underwent surgery. In patients having minimally invasive procedures, histopathological sampling is not usually performed, and the absence of pathological data from these patients is one of the limitations of this study. In pilonidal sinus patients undergoing minimally invasive treatment, taking a brush or small biopsy from the cavity could help ensure that potential malignancies are not missed. Prospective randomized studies are needed to confirm this approach.

#### 5. Conclusion

The rate of malignancy in the literature is low in spite of minimally invasive procedures in which pathology samples are not taken. Besides, routine histopathological examination causes additional workload and cost. Therefore, except in cases of prolonged duration of disease, advanced age, macroscopic suspicion, or recurrence, we believe that routine pathological examination of the pilonidal sinus may be unnecessary.

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