

Is Histopathological Examination of Excision Material in Pilonidal Sinus Surgeries A Waste of Cost, Time and Labor?

Pilonidal Sinüs Ameliyatlarında Eksizyon Materyalinin Histopatolojik İncelenmesi Maliyet, Zaman ve İş Gücü Kaybı mı?

Doğan Erdoğan¹, Aylin Gönüldaş²

¹University of Health Sciences, İstanbul, Haydarpaşa Numune Research and Training Hospital, Department of General Surgery, İzmir, Turkey

²University of Health Sciences, İstanbul, Haydarpaşa Numune Research and Training Hospital, Department of Pathology, İzmir, Turkey

ABSTRACT

Aim: Pilonidal sinus (PS) surgery is one of the most common operations performed in general surgery. Although different treatments are used nowadays, the main treatment of the disease is still surgical excision. Malignant degeneration is very low in patients with chronic pilonidal sinus. Cases have been reported in the literature as case reports. In this study, we aimed to reveal the necessity of routine histopathological examination of the excision material in PS surgery.

Materials and Methods: We have considered patients in our hospital database, who had pilonidal sinus surgery with a diagnosis of PS retrospectively. Nine hundred thirty nine patients, whose histopathological examination reports of PS excision specimen were accessed, were included in the study.

Results: Of the 939 patients included in the study, 721 of which (76.8%) are male and 218 of which (23.2%) are female. The mean age of the patients is 25.6 ± 7.4 (min-max:59) years. The number of patients over 50 years was 24 (2.6%). The number of patients operated with recurrent pilonidal sinus was 26 (2.8%). No malignancy was observed in any of the histopathological examinations of 939 excision materials.

Conclusion: No malignancy has been detected in any of our PS cases in the histopathological examination. The necessity of routine histopathological examination of PS excision materials should be questioned and discussed. It causes both a waste of time and money. However, it can be considered for the patients over 50, since the literature shows an increase in risk of malignancy after this age.

Keywords: Pilonidal sinus disease, malignancy, histopathological examination

ÖZ

Amaç: Pilonidal sinüs (PS) genel cerrahide en çok yapılan ameliyatlardan birisidir. Günümüzde farklı tedaviler kullanılmakla birlikte hastalığın başlıca tedavisi hala cerrahi eksizyondur. Kronik pilonidal sinüsü olan hastalarda malign dejenerasyonu oldukça düşüktür. Literatürde olgu sunumu şeklinde vakalar bildirilmiştir. Bu çalışmada, PS cerrahisinde, eksizyon materyalinin rutin olarak yapılan histopatolojik incelemesinin gerekliliğini ortaya koymayı amaçladık.

Gereç ve Yöntem: Hastanemiz veri tabanında kayıtlı PS tanısıyla pilonidal sinüs eksizyonu yapılan hastalar retrospektif olarak değerlendirildi. Pilonidal sinüs eksizyonu piyesinin histopatolojik inceleme raporlarına ulaşılan 939 hasta çalışmaya dahil edildi.

Bulgular: Çalışmaya dahil edilen 939 PS hastasının 721'i (%76,8) erkek, 218'i (%23,2) kadındı. Hastaların yaş ortalaması $25,6 \pm 7,4$ (min - maks:18-59) yılı. 50 yaş üstü hasta sayısı 24 (%2,6) idi. Nüks pilonidal sinüs tanısı ile ameliyat edilenlerin sayısı 26 (%2,8) olarak belirlendi. Dokuz yüz otuz dokuz hastanın eksizyon materyallerinin histopatolojik incelemesinin hiçbirinde malignite görülmedi.

Sonuç: Histopatolojik inceleme yapılan hiçbir PS vakamızda maligniteye rastlanmadı. PS ekizyon materyallerinin histopatolojik incelemesinin rutin olarak yapılmasının gerekliliği sorgulanmalı ve tartışılmalıdır. Maliyet ve zaman açısından kayba neden olmaktadır. Ancak literatürde tariflenen şüpheli ve malignite riski yüksek olan, 50 yaş üstü hastalarda düşünülebilir.

Anahtar Kelimeler: Pilonidal sinüs hastalığı, malignite, histopatolojik inceleme

Introduction:

Although PS is mostly in the intergluteal region, it can also be seen in other parts of the body that contain hair. Risk factors include deep intergluteal sulcus, obesity, localized hirsutism, long sitting time, sweating and poor hygiene(1). The diagnosis of PS is usually made by anamnesis and physical examination. There are characteristic physical examination findings in the intergluteal sulcus. Although there may be diseases such as hidraadenitis suppurativa, furuncles, Crohn's disease, perianal fistula, tuberculosis and actinomycosis in the differential diagnosis, the diagnosis is usually made easily by physical examination (2). It is most common in the population between the ages of 15-40, being 3 times more common in men (3). There are two approaches in treatment of PS, that can be classified as surgical excision and local applications. However, surgical excision is still the most common method, since local applications have high recurrence rates (4). The recurrence rate after PS surgery varies between % 3-20 (5). The rate of malignancy in PS disease is very low and its incidence is reported as %0,1. Most of them are squamous cell carcinomas. Risk factors include advanced age, complex and recurrent cases with untreated chronic inflammation (6-7). Our aim in this study is to discuss the necessity of routine histopathological examination in every patient except PS cases with high malignancy risk.

Materials and Methods

Between January 2015 and December 2021, 939 patients operated with the diagnosis of pilonidal sinus at the Haydarpaşa Numune Training and Research Hospital General Surgery Clinic were identified by scanning the hospital registry system and included in the study retrospectively. Ethical approval for this study (No:HNEAH-KAEK 2021/KK/296) was obtained. Patients under the age of 18 and patients whose histopathological examination reports could not be found were excluded from the study.

Age, gender, primary or recurrent case and histopathological specimen examination data have been analyzed and recorded.

Statistical Analysis

Mean, standard deviation, median minimum, maximum, frequency and ratio values were used in the descriptive statistics of the data. SPSS 28.0 program was used in the analysis.

Additional Histopathological data were evaluated primarily for malignancy in the specimen. Then, the pathology of the play was classified under 5 headings.

(1.No pilonidal sinus / No neoplasm seen in specimen
2.Chronic Inflammation and Fibrosis, Active Chronic Inflammation
3.Granulation Tissue, Foreign Body and Foreign Body Giant Cell Reaction
4.Pilonidal Sinus Abscess Formation
5.Epidermal Cyst)

Results

Pilonidal sinus excision has been performed in all patients, albeit with different surgical techniques. All of the patients had histopathological reports of the specimens. Of the 939 patients included in the study, 721 of which (%76.8) are male and 218 of which (%23.2) are female. The mean age of the patients is 25.6 ± 7.4 (min- max:59) years. The number of patients over 50 years was 24 (%2.6). The number of patients operated with recurrent pilonidal sinus was 26 (%2.8). No malignancy was observed in any of the histopathological examinations of 939 excision materials. Demographic data of the patients and histopathological examination report results of pilonidal sinus excision materials are shown in (Table-I).

Discussion:

Pilonidal Sinus disease occurs as a chronic skin infection progressing deep into the intergluteal sulcus. It is a chronic inflammatory process, usually with intermittently draining sinus formation or abscess formation. Treatment is usually surgical excision. However, there is a significant increase in the tendency to use minimally invasive methods in the treatment of PS recently. Although PS is a common disease, malignant transformation is rare and the average transformation period is 20 years according to the literature (8-9). There are studies defining this period as at least 10 years (10). Although malignant transformation is rare, it is a complication of PS that can be seen in approximately %0.1 of elderly, recurrent, complex disease and chronically inflamed pilonidal sinus cases (5). PS-associated malignancy: A rare complication that can be seen mostly in men older than 50 years old (11).

In other studies, pilonidal disease associated with malignancy has been detected in 56 patients until 2001 and in 35 patients after 2001, which have all been reported in the form of case reports. In most of these 35 case reports identified after 2001, the malignancy type was squamous cell carcinoma, and all patients were over 50 years old (12-14). While well-differentiated squamous cell carcinoma is the most common histological type, basal cell carcinoma, sweat gland adenocarcinoma, and verrucous adenocarcinoma are other rare histological types (11). Pilonidal sinus carcinoma can be suspected or even diagnosed by physical examination. It is important to pay attention to fast-growing, ulcerated, fungal appearance, fragile, bleeding-prone sinuses, and if suspicion arises for malignancy multiple biopsies should be taken (16).

In our study, 939 patients have been retrospectively screened, most of whom were younger than 50 years old, the average age is 24. There were 24 patients older than 50 years old corresponding to %2.6 of all patients. The rate of recurrent pilonidal sinus patients operated on was as low as %2.8 of all patients (26 patients). Preoperative biopsy was not taken because the suspicion of

malignancy, as a physical examination finding, was not considered in any of the patients. No malignancy has been found in the 939 pilonidal sinus patients who underwent surgery. Considering the time allocated per case for histopathological examination, it is an inevitable fact that it causes both a waste of time and workload. In addition, it is certain that the histopathological examination is routinely performed on all patients and it causes a serious cost to the institution due to the high number of pilonidal sinus patients.

Therefore, we suggest that histopathological examination would be more appropriate in cases of suspicious pilonidal sinus and in patients over 50 years of age, as described in the literature, instead of routinely performing histopathological examination on every patient.

The limitations of our study are that it is retrospective and single-center, and the number of patients over 50 years old is low.

Conclusion:

Histopathological examination of PS excision materials can be interpreted as a waste of time and cost and unnecessary workload except for cases with suspected malignancy and patients over 50 years of age, as described in the literature. It seems unnecessary to perform histopathological examination except in certain selected cases. As a result of our study, we suggest that routine histopathological examination of pilonidal sinus excision materials is not very necessary, except for cases with a suspicion for malignancy and cases over 50 years of age, as reported in the literature.

Demographic Data			
			Frequency(n) 939
Age	Min-Max	Median	Mean±SD n%
	18.0-59.0	24.0	25.6±7.4
50 years old			24(2.6)
Male			721(76.8)
Female			218(23.2)
Histopathological Specimen Examination			
			Frequency (n) 939
			Mean±SD n%
Specimen of pilonidal sinus without neoplasm			805 (85.7)
Chronic Inflammation and Fibrosis			51 (5.4)
Active Chronic Inflammation, Granulation Tissue, Foreign Body and Foreign Body Giant Cell Reaction			47 (5.0)
Pilonidal Sinus Abscess Formation			35 (3.7)
Epidermal Cyst			1 (0.1)
Malignancy in Histopathological Specimen			0 (0)
Recurrent Case			26 (2.8)

Table I: Demographic and Histopathological Result

References

- 1-Kuckelman JP. Pilonidal disease: Management and definitive treatment. *Dis Colon Rectum*. 2018;61:775-77.
- 2-Johnson EK, Vogel JD, Cowan ML, Feingold DL, Steele SR; Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons. *Dis Colon Rectum*. 2019;62:146-57.
- 3-Parpoudi SN, Kyziridis DS, Patridas DC, Makrantonakis AN, Iosifidis P, Mantzoros IG, et al. Is histological examination necessary when excising a pilonidal cyst? *Am J Case Rep*. 2015;21:164-8.
- 4 Sondenaa K, Andersen E, Nesvik I, Soreide JA. Patient characteristics and symptoms in chronic pilonidal sinus disease. *Int J Colorectal Dis*. 1995;10:39-42.
- 5-Parades V, Bouchard D, Janier M, Berger A. Pilonidal sinus disease. *J Visc Surg*. 2013;150:237-47.
- 6-Delvecchio A, Laforgia R, Sederino MG, Minafra M, Carbotta G, Balducci G, et al. Squamous carcinoma in pilonidal sinus: Case report and review of literature. *G Chir*. 2019;40:70-4.
- 7-Humphries AE, Duncan JE. Evaluation and management of pilonidal disease. *Surg Clin North Am*. 2010;90:113-24.
- 8-Borges VF, Keating JT, Nasser IA, Cooley TP, Greenberg HL, Dezube BJ. Clinicopathologic characterization of squamous-cell carcinoma arising from pilonidal disease in association with condylomata acuminatum in HIV infected patients. *Dis Colon Rectum*. 2001;44:1873-7.
- 9-Abboud B, Ingea H. Recurrent squamous-cell carcinoma arising in sacrococcygeal pilonidal sinus tract. *Dis Colon Rectum*. 1999;42:525-8
- 10-Tirone A, Gaggelli I, Francioli N, Venezia D, Vuolo G. Degenerazione maligna di una cisti pilonidale. *Ann Ital Chir*. 2009; 80:407-9.
- 11-Boulanger G, Abet E, Brau-Weber AG, Leclair F, Denimal F, Jean MH, et al. Is histological analysis of pilonidal sinus useful? Retrospective analysis of 731 resections. *J Visc Surg*. 2018;155:191-94.
- 12-De Bree E, Zoetmulder FA, Christodoulakis M, Aleman BM, Tsiftsis DD. Treatment of malignancy arising in pilonidal disease. *Ann Surg Oncol*. 2001;8:60-4.
- 13-Yuksel ME, Tamer F. All pilonidal sinus surgery specimens should be histopathologically evaluated in order to rule out malignancy. *J Visc Surg*. 2019;156:469-70.
- 14-Yuksel ME, Ordu M. Pilonidal disease specimens of 905 patients revealed no malignancy, however we still insist on histopathological examination. *Ann Med Res*. 2020;27:810-3.
- 15-Velitchklov N, Vezdarova M, Losanoff J, Kjossev K, Katrov E. A fatal case of carcinoma arising from a pilonidal sinus tract. *Ulster Med J*. 2001;70:61-3.

The authors declare no conflict of interest.

The authors disclose that no grants or support resources were used.

All authors declared their contribution to the study at all stages and approved the final version of the manuscript.

All authors declared that this manuscript has not been published before and is not currently being considered for publication elsewhere.
