

Comparison of early surgery (unroofing-curettage) and elective surgery (Karydakias flap technique) in pilonidal sinus abscess cases

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ABSTRACT

BACKGROUND: The aim of this study is to compare the effectiveness and success of early (acute) period local surgical intervention (unroofing-curettage) followed by dressing and secondary healing with the surgery performed in elective conditions (pilonidal sinus excision and Karydakias flap) following conventional abscess treatment (drainage-antibiotic therapy) in pilonidal sinus abscess cases.

METHODS: The data of the patients treated for pilonidal sinus abscesses in our clinic between January 2012 and March 2013 were analyzed, retrospectively. Those who had early surgery were determined as Group S, and those who had elective surgery following drainage-antibiotic therapy were determined as Group K. Patients in both groups were compared in terms of age, gender, complications, recurrence rate and healing time. Patients were followed for an average of 14 months.

RESULTS: Of the 53 patients included in the study, 28 were in Group S and 25 in Group K. The mean age and gender distribution of both groups were similar and a significant difference was not found between the groups in terms of complication development and recurrence. However, there was a statistically significant difference between the groups in terms of treatment duration ($p=0.02$).

CONCLUSION: In treating acute pilonidal abscesses, the Karydakias method, following drainage-antibiotic therapy, is a preferable method due to its shorter treatment duration and higher patient comfort.

Key words: Antibiotic therapy; drainage; incision; Karydakias; pilonidal abscess.

INTRODUCTION

Pilonidal sinus disease (PSD), which was first described by Anderson in 1847, still remains a controversial disease for which modern surgery has not created a precise treatment algorithm and the etiology has still not been illuminated.^[1] PSD, which is observed at a rate of 0.7% in the general population, most commonly affects young adults between the ages of 15-25.^[2]

The treatment of this disease is one of the most actively discussed topics in surgery. Many methods have been presented in the literature. There are many surgical methods described, varying from the simple incision, drainage, unroofing, curettage and spontaneous secondary healing to excision-flap sliding, Karydakias, Bascom, and MacFee methods. Conservative methods including phenol solution, the crystallized phenol method, cauterization and alcohol injection have also been used.^[3,4] However, among these treatment methods, an optimal treatment type has not been described yet.

Although there is no accepted precise treatment method, a consensus does exist regarding the symptoms and clinical findings of the disease. Patients may either be asymptomatic or may present in any of the four distinct forms of acute pilonidal abscess, chronic fistula form or recurrent complex PSD. Although the chronic fistulizing form is the most common type seen on admission, the ratio of the patients admitted with acute pilonidal abscess reaches about 30%.^[5]

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When an acute pilonidal abscess is formed, within a short period of time, hyperemia, swelling and complaints of pain are observed in the sacrococcygeal area. While abscesses with these complaints may spontaneously drain, surgical intervention is usually required. The initial treatment for acute abscess is urgent drainage. However, despite drainage, antibiotic therapy, regular dressing and meticulous hygiene measures, the abscess usually reoccurs and chronic PSD develops. Surgical treatment usually awaits the patient in the chronic process.^[5,6] This condition both negatively affects the patient comfort and increases treatment cost. In fact, a successful and reliable treatment method is one with a low rate of recurrence, high patient satisfaction and low costs. Therefore, in cases of acute pilonidal abscess, treatment should be performed either during drainage or right after the acute infection subsides before a basis for chronic disease can be formed. Most debates in the literature are about how the most commonly encountered clinical form of chronic fistulization should be treated. Although there are publications regarding the abscess form, they are few in number.^[7,8]

The aim of our study was to retrospectively compare the unroofing-curettage-secondary healing we performed during drainage with the Karydakis method followed by drainage-antibiotic therapy in patients admitted to our clinic with acute pilonidal abscesses.

MATERIALS AND METHODS

Patients who were treated for acute pilonidal abscess in our clinic between January 2012 and March 2013 were analyzed, retrospectively. When selecting acute abscess cases, previous complaints were ignored and patients with a few days history of painful swelling and hyperemia in the sacrococcygeal region were accepted.

A total of 64 patients treated in the same center by the same team were included in the study. Data was obtained from the records in the archive of the hospital (operation notes, epicrisis and polyclinic dressing records). Patients were questioned on the phone for recurrence. Suspicious patients were called back and controlled. Eleven patients who could not be reached and whose data was incomplete were excluded and the study was completed with 53 patients. In twenty-eight patients, unroofing and curettage was performed and left for secondary healing and in 25 patients the Karydakis method was performed following drainage-antibiotic therapy [Group S (n=28) secondary healing and Group K (n=25) Karydakis following drainage-antibiotic therapy]. The age, gender, complications, recurrence rates, and healing times of the patients were analyzed and compared.

The procedure of the removal of the sinus roof (unroofing) and subsequent secondary healing were performed under sterile conditions with local anesthesia in the operating room. After the infiltration of a local anesthetic agent, the abscess was drained and the sinus tract was determined by placing a metal probe or a stile along the whole sinus tract (Figure 1a). The tract was opened by cutting the skin towards the probe. Afterwards, unroofing was performed by removing the sinus tissue and the roof of all the extensions. The sinus base was curettaged removing all the debris, hair and granulation tissue. The surgical field was washed with oxygenated water and saline solution after curettage. The fibrotic posterior wall of the sinus tract was left so as not to include any epithelium or hair tissue (Figure 1b).^[7-11] Patients were prescribed oral antibiotics and analgesic drugs following dressing and were discharged. Daily wound dressings were recommended for the first week followed by three dressings the second week and then two dressings a week thereafter (Figure 1c). The patients were recommended to periodically clean hair and take



Figure 1. (a) Insertion of a metal probe along the whole length of the sinus tract. (b) Unroofing by removal of the whole roof of the sinus tissue and extensions. (c) Appearance of the same patient 21 days after unroofing. (d) Postoperative appearance of a patient following the Karydakis technique.

care of hygiene. When calculating the treatment duration; the time from the drainage of the abscess to the total healing of the sinus opening with the patient not requiring any dressings was considered. This procedure did not require hospitalization except for those who developed complications.

In patients, on whom the Karydakis technique was performed after antibiotic therapy, the abscess was drained with local anesthesia, antibiotic therapy was given and the abscess regressed clinically. The surgical technique described by Karydakis was performed under spinal anesthesia (Figure 1d).^[12] In these patients, the duration of treatment was calculated as the time from the abscess drainage, including the days of antibiotic use, to the day on which the sutures were removed. All patients were called in the morning of surgery and discharged on the day the drainage tube was removed. The drainage tube was removed when the amount of fluid drained was below 20 ml.

By using the SPSS for Windows 11.5 program to statistically evaluate the data, the Student's t-test and the qui-square test were applied. A p level of <0.05 was accepted to be statistically significant.

The trial was initiated upon approval of the protocol by the Ethical Committee of Firat University Medical Faculty, dated January-2014 and designated number 2014-02/01.

RESULTS

Of the 53 patients included in the study who were treated for acute pilonidal abscess in our clinic, twenty-eight had unroofing-secondary healing performed (Group S) (52.8%) and twenty-five (47.2%) had the Karydakis operation following antibiotic therapy (Group K) (Table 1).

The mean age of the secondary healing group was 22.7±3.3 (20-33) and the mean age of Group K was 23.4±4.8 (16-35) and this difference was not found to be statistically significant (p=0.21). While all patients in Group S were male, in Group K, 3 patients (12%) were female and 22 (88%) were male.

No statistically significant difference was found between the groups in terms of gender distribution (p=0.05). The mean duration of treatment was 34.7±3.3 (28-42) days in Group S and 25.9±6.6 (21-46) in Group K. This difference was found to be statistically significant (p=0.0) (Figure 1a). The duration of treatment was observed to be significantly shorter in Group K. The mean duration of follow-up was 14.09±2.9 (8-21) months in Group S and 14±2.7 (8-20) in Group K and this difference was not found to be statistically significant (p=0.55).

While complications were observed in four of the 53 patients (7.5%), recurrence was detected in two (3.77%). Complications developed in two patients (7.1%) in Group S and two (8%) in Group K. There was no statistically significant difference between the groups in terms of complication rate (p=0.52). While bleeding was seen in two patients in Group S, wound infection developed in two patients in Group K. Patients who developed bleeding were treated with compression dressings and observed. No additional interventions were required. The wounds of the patients who developed wound infection were opened and treated with oral antibiotics. One of these patients had recurrence during follow-up.

One of the recurrences (3.5%) was in the secondary healing group and another was in Group K (4%). A statistically significant difference was not observed between the groups in terms of recurrence (p=0.46). Patients in both groups with recurrence had a second operation where a rhomboid excision + Limberg flap method was performed. One of the recurrences was detected on the 11th month follow-up and another on the 14th month follow-up.

DISCUSSION

PSD is commonly observed between the ages of 15 and 25 and is 3-4 times more common among males than females. While its incidence decreases after the age of 25, it is quite rare in the middle and advanced ages.^[13] In our study, the mean age of the patients was consistent with that of the literature.

Table 1. Comparison of patient data

| | Unroofing-curettage-secondary healing (Group S) | Karydakis following antibiotic therapy (Group K) | p |
|--------------------------------|---|--|-------------|
| Number of patients (n) | 28 (52.8%) | 25 (47.2%) | – |
| Distribution of gender (F/M) | 0/28 | 3/22 | 0.05 |
| Age (years) | 22.7±3.3 (20-33) | 23.4±4.8 (16-35) | 0.21 |
| Duration of treatment (days) | 34.7±3.3 (28-42) | 25.9±6.6 (21-46) | 0.02 |
| Duration of follow-up (months) | 14.09±2.9 (8-21) | 14±2.7 (8-20) | 0.55 |
| Complications | 2 (7.1%) | 2 (8%) | 0.52 |
| Recurrence | 1 (3.5%) | 1 (4%) | 0.46 |

The main complaint of the patients is painless, continuous or periodic discharge. However, with a carefully taken medical history, a large percentage will reveal previously experienced abscesses.^[11] Many treatment options are available in the literature for this disease. The main principle of treatment is to have the patients return to their daily routine and work pattern and eliminate recurrence. The aim should be to obtain a low recurrence rate and have the patient return to a functional daily routine as soon as possible. Patient comfort should also be remembered. Successful treatment should include a minimally invasive and cost effective operation, and easy postoperative care.

Karydakis introduced a novel method for the treatment of PSD in 1973 and published the largest pilonidal sinus series in the world in 1992. In his paper, he presented the data of 7471 patients between the years 1966-1990 and reported a less than 1% recurrence rate on follow-ups of 2-20 years.^[12]

Most patients with a chronic, painless discharge do not immediately apply to physicians. However, when an abscess develops, there is swelling, hyperemia and severe pain in the sacrococcygeal area of the patient. In these cases, patients usually admit to the hospital as soon as possible. Sinus abscesses present as severe pain and loss of labor. The primary treatment option is the regression of the complaints caused by the abscess. However, again, patients usually apply to physicians after the primary treatment. Due to after drainage-antibiotic therapy, a high rate of chronicity, reported as high as 90% in some series, is observed.^[11,14]

Leaving the patient for secondary healing after abscess, drainage negatively affects patient comfort. A painless discharge occurs on the chronic background and this condition upsets the patient. Therefore, in our opinion, treatment should be planned and performed on admission. In our study, the morbidity ratio was detected to be 8% in patients who underwent the Karydakis technique. This ratio was found to be 7.1% in the secondary healing group.

While the recurrence rate was 1% in Karydakis' own study, this was reported being 4% in a study by Kitchen.^[15] In our study, the recurrence rate was found to be 4% in the Karydakis group. The recurrence rate has been reported to vary between 1-19% in patients who undergo unroofing-curettage^[7,8] and this ratio was found to be 3.5% in our study.

The duration of healing varies between 4-6 weeks in patients with chronic pilonidal sinus having excision and been left for secondary healing and followed up with dressings.^[16] While long healing period is the main disadvantage of this method, the need for dressing at certain intervals seems to be another disadvantage. However, this technique, which reduces the likelihood of chronicity in patients with abscesses, is easily applicable, and besides the abscess drainage, the treatment may

be done in a single session. The most important advantage is that it can be performed under local anesthesia.

Performing abscess drainage and the Karydakis method after antibiotic therapy seems to treat the acute pilonidal abscess making it chronic. In this method, the operation is performed after clinical regression of the abscess. In fact, the interval between the day of abscess development and the operation day is shortened, thus, the chronic symptoms of the patient are prevented. The duration of treatment varies between 2-3 weeks in different studies conducted with similar methods. However, in many patients operated on due to chronic pilonidal sinus complaints, the postoperative period is accepted as the duration of treatment.^[17,18] The duration of antibiotic therapy applied after drainage is not calculated. In this study, as different from the literature, the duration of treatment was accepted as the time from the day of abscess drainage to the day of suture removal, thus including the days of antibiotic therapy. With this method, the duration of treatment was found to be statistically significant compared to the unroofing-curettage secondary healing group ($p=0.02$). Long durations of treatment and dressing requirement negatively affect patient comfort. Therefore, the secondary healing method is not preferred by the patients despite being performed under local anesthesia and eliminating the need for a second intervention.

Acute pilonidal abscesses are common in the young population and therefore prolonged curative therapy leads to the loss of labor. Performing surgical procedures earlier or later may affect the overall success of treatment. Therefore, we suggest that the Karydakis flap application should be preferred after abscess treatment as it shortens the duration of treatment.

Conflict of interest: None declared.

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KLİNİK ÇALIŞMA - ÖZET

Pilonidal sinüs apse olgularında erken cerrahi (unroofing-küretaj) ile elektif cerrahinin (Karydakos flep tekniği) karşılaştırılması

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AMAÇ: Pilonidal sinüs apse olgularında erken (akut) dönemde uygulan lokal cerrahi müdahale (unroofing-küretaj) ve sonrasında pansuman takibi ve sekonder iyileşme ile apsenin klasik tedavisini takiben (drenaj-antibiyoterapi) elektif şartlarda uygulanan cerrahinin (pilonidal sinüs eksizyonu ve Karydakos flep uygulama) etkinlik ve başarısını karşılaştırmak.

GEREÇ VE YÖNTEM: Ocak 2012 ile Mart 2013 tarihleri arasında kliniğimizde pilonidal sinüs apsesi nedeniyle tedavi uygulanan hastaların verileri geriye dönük olarak incelendi. Erken dönemde cerrahi uygulananlar Grup S, drenaj-antibiyoterapi sonrası elektif şartlarda cerrahi uygulananlar Grup K olarak belirlendi. Her iki gruptaki hastalar yaş, cinsiyet, komplikasyonlar, nüks oranları, iyileşme süreleri incelenerek karşılaştırıldı. Hastalar ortalama 14 ay takip edildi.

BULGULAR: Çalışmaya alınan 53 hastanın dağılımı Grup S (n=28) ve Grup K (n=25) olduğu görüldü. Her iki grubun yaş ortalaması, cinsiyet dağılımı benzerdi ve komplikasyon gelişimi ve nüks açısından iki grup arasında anlamlı fark bulunmadı. Buna karşın tedavi süresi açısından arada istatistiksel olarak anlamlı fark vardı (p=0.02).

TARTIŞMA: Drenaj-antibiyoterapi sonrası Karydakos yöntemi daha kısa tedavi süresi ve yüksek hasta konforu nedeniyle akut pilonidal apse tedavisinde tercih edilebilecek bir yöntemdir.

Anahtar sözcükler: Antibiyoterapi; drenaj; insizyon; Karydakos; pilonidal apse.

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