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CLINICAL RESEARCH / KLİNİK ARAŞTIRMA

Karydakis Procedure without a Drain for Sacrococcygeal Pilonidal Sinus Patients

Sakrokoksigeal Pilonidal Sinüs Hastalarında Dren Kullanılmadan Karydakis Prosedürü

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Abstract

Objective: This study aimed to evaluate patients with sacrococcygeal pilonidal sinus (PS) disease who underwent the Karydakis procedure without any drains.

Methods: Ninety-eight patients presenting with PS at our center underwent the Karydakis procedure from September 2017 to April 2018. These patients were evaluated for fluid collection, failure of wound healing, wound infection and dehiscence on the postoperative first, third, the seventh days and the first month.

Results: A total of ninety-eight patients underwent Karydakis procedure, of which 84 were males and 14 females. Of the two patients had recurrent disease. Three patients had a serious collection on the third postoperative day. One patient had a wound infection on the seventh postoperative day and drainage was performed. One patient had wound dehiscence on the 10th postoperative day due to local trauma. The remaining 93 patients had normal physical examination findings on the first, third, seventh days and the first month after surgery.

Conclusion: We think that not using drains in the Karydakis procedure does not increase the complications. However, drain usage should be weighed according to its costs and benefits in every case, especially in patients with a body mass index greater than 30.

Keywords: Karydakis, drain, pilonidal sinus, seroma, complication, wound

Öz

Amaç: Bu çalışmanın amacı merkezimizde rutin dren kullanımı olmaksızın Karydakis prosedürü uygulanan sakrokoksigeal pilonidal sinüs (PS) hastalığı hastalarını değerlendirmektir.

Yöntem: Merkezimizde PS ile başvuran 98 hastaya Eylül 2017-Nisan 2018 tarihleri arasında Karydakis prosedürü uygulandı. Bu hastalar, postoperatif birinci, üçüncü, yedinci günler ve ilk ayda sıvı toplama, yara iyileşmesinde başarısızlık, yara enfeksiyonu ve açılma yönünden izlendi ve değerlendirildi.

Bulgular: Seksen dördü erkek 14'ü kadın olmak üzere toplam 98 hastaya Karydakis prosedürü uygulandı. İki hastada nüks mevcuttu. Üç hastada ameliyat sonrası üçüncü günde ciddi bir koleksiyon vardı. Bir hastada postoperatif yedinci günde yara enfeksiyonu gelişti ve drenaj yapıldı. Bir hastada postoperatif 10. günde lokal travma nedeniyle yara ayrılması gelişti. Kalan 93 hastanın ameliyat sonrası birinci, üçüncü, yedinci günler ve birinci ayda normal fizik muayene bulguları vardı.

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Öz

Sonuç: Karydakis işleminde dren kullanılmamasının komplikasyonları artırmadığını düşünüyoruz. Hastalarda dren kullanımına özellikle vücut kitle indeksi 30'un üzerinde olan hastalarda maliyet ve faydasına göre karar verilmelidir.

Anahtar Kelimeler: Karydakis, dren, pilonidal sinüs, seroma, komplikasyon, yara

Introduction

Pilonidal sinus (PS) disease is a worldwide problem that often affects young men and women with a tendency to relapse, causing significant problems if not properly addressed in the primary setting. In the etiopathogenesis of PS, hair-related foreign body reaction causes an abscess and sinus formation. Additionally, in previous years, it was considered to be caused by congenital factors[1]. The incidence is higher in men and especially those who are soldiers. The development of PS associated with male sex, adolescence or youth, and a familial disposition. Overweight and local trauma are the most important factors that play a role in the development of PS[2-4].

The Karydakis procedure, which is one of the most asymmetric flap techniques, is used to treat PS disease. This method has been used since 1973, and the largest series on it is published by Karydakis himself[5]. The recurrence was reported that less than one percent with this method. Drain usage is used routinely in this procedure. Although Sakr et al.[6] reported that the results are similar between non-obese and obese patients, no recurrence was seen in these patients, and complications occur in patients with a body mass index (BMI) greater than 30. Using a suction drain in the Karydakis procedure recommended in these patients with a BMI greater than 30 to avoid seroma.

In this study, we attempted to evaluate patients who underwent the Karydakis procedure without routine drain usage at our center with early and late postoperative results.

Materials and Methods

This retrospective study was conducted at Gaziantep Dr. Ersin Arslan Education and Research Hospital General Surgery Clinic in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Ethics committee approval was obtained for this study from the Ethics Committee of Gaziantep Islamic Science and Technology University (2022/84). This study was undertaken as a retrospective study from September 2017 to April 2018. All patients who were subjected to the Karydakis procedure for PS at our center were included in the study whether presenting with primary or recurrent disease. All procedures were performed by the same surgeon. The parameters as precurrent disease, incision length, BMI, wound collection, wound infection and wound dehiscence were assessed with respect to each patient. Patients who used drains and had wound separation because of trauma were excluded from the study.

Statistical Analysis

Quantitative variables were expressed as mean±standard deviation, median, minimum-maximum, and interval. Qualitative variables were reported as numbers and percentages (%). While the mean and standard deviations are used for homogenous distributions, median and range are given for heterogeneous distributions.

Surgical Procedure

All patients underwent routine work for surgery. Cefazolin Sodium 2 g, a first-generation cephalosporin, was used as prophylaxis one hour before surgery. All procedures were performed under spinal anesthesia. Patients were placed in a prone jack-knife position. An asymmetrical ellipse marked to encompass the pilonidal complex the upper and lower ends of the ellipse thus marked were at least 2 cm away from the midline. The center of the ellipse was 4 cm from the midline (Figure 1). The area thus marked was then excised full-thickness up to the sacral fascia with a straight edge on the side of flap mobilization and a sloping edge on the other side. This is followed by a mobilization of the flap across the midline (Figure 2). A layer of zero number polyglactin sutures was placed, the needle is passed into the sacral fascia in the midline and then into the V junction of the flap and secured. The second layer of polyglactin sutures then placed to secure the flap to the lateral edge of the wound. Two layers of the sutures placed to advance the base of the flap reduces the dead space and prevent postoperative fluid accumulation in the cavity. The skin was approximated using 2/0 polypropylene by mattress sutures and a pressure dressing was applied (Figure 3). The wound inspection was done on the first, third and 10th postoperative days and the

patient was usually discharged on the first postoperative day. Sutures are usually removed on the 10th or 12th postoperative day. One month after the removal of the sutures, the patients were reexamined.

Results

A total of ninety-eight patients underwent Karydakis procedure, of which 84 were males and 14 were females. Of the two patients had recurrent disease. The age distribution of the patients was not homogeneous [the value of the Shapiro-Wilk test statistic (D) is 0.88, $p<0.05$] and the average age was 23 (17-41). Incision lengths ranged from 5 to 15 cm and the median incision length was 9 cm. The number of pits was 2 to 7 and the median value was 4. The distance from the pit to the anus was 1 to 10 cm and the median was 6 cm. There were 13 patients who had lateral pits to the midline of the sacrococcygeal sulcus.

The BMI of the patients ranged from 18 to 38 and the median value of BMI was 25. Three patients had a serious collection on the third postoperative day and the BMI of all patients was above 30 and the incision length of these patients was 13, 11 and 10 cm, respectively. The fluid collection was treated with wound puncture repeated three times and pressure dressing was applied. one patient who had a wound infection on the seventh postoperative day and drainage was performed. The BMI and incision length of this patient was 38 and 13 cm, respectively. He was administered appropriate antibiotics and healed in 10 days. One patient had wound dehiscence on the 10th postoperative day due to local trauma. So this patient was excluded from the study. The remaining 93 patients had normal physical examination findings on the first, third, seventh days and the first month after surgery.

Discussion

Sacrococcygeal PS disease is a health issue that requires surgical intervention and affects young adults worldwide. Recurrences have led to various procedures being practiced, from simple excision to complicated flap procedures. Many surgical techniques are described and used for treating

Figure 1. Incision landmarks for excising the cyst

Figure 2. The appearance of Karydakis flaps post excision

sacral PS disease. The ideal treatment is still unclear since the different hospitalization times, late recurrence rates and healing times have been reported for each technique[7-9].

The Karydakis procedure is one of the asymmetric flap techniques described by Karydakis in 1973. He has reported the largest patient number and lowest recurrence. Karydakis opined that three main factors play a part in the hair insertion process: The invader, consisting of loose hair, some force, which causes hair insertion, and the vulnerability of the skin to the insertion of hair at the depth of the natal cleft. If these three main occur, then hair insertion and PS result[5]. The use of surgical suction drains is important to prevent postoperative fluid collection. Drain usage has been used routinely in the Karydakis procedure[5]. However, Erdem et al.[10] reported that there was no difference in early wound complications between the drained and non-drained patients treated with the Limberg flap procedure. The disadvantages of using drainage tubes include prolonged hospitalization, patient discomfort and increased risk of infection.

Figure 3. Postoperative image of the Karydakis procedure

The routine use of suction drains with any surgery can prevent fluid accumulation, edema, and hematoma formation[11]. However, despite the major advances in surgical techniques in recent decades, the use of subcutaneous drains remains controversial. Proponents say that subcutaneous drains reduce postoperative wound complications by eliminating dead space and reducing fluid collection, thereby decreasing the economic and psychological burden on the patient and his or her family. Opponents say that subcutaneous drains allow bacterial migration into the wounds, thereby increasing the rate of infection[12]. In their study Sakr et al.[6], closed the wound without drainage and applied a firm dressing to the closed wound. They reported that the results are similar between nonobese and obese patients, to no recurrence seen in these patients and complications occur in patients with BMI greater than 30; and in such patients, they recommended inserting a suction drainage tube during operation. In our study, three patients had a serious collection on the third postoperative day and the BMI of the patients was more than 30.

Study Limitations

We are aware of the limitations of our study. The small number of patients, the retrospective nature of the study, and the lack of comparison are the limitations of the study. However, in our study in a rural state hospital without using a drain, the same positive results were obtained and we think that this will contribute to the literature.

Conclusion

Two layers sutures advance the flap to the lateral side and that reduce the dead space and prevent postoperative fluid accumulation in the cavity. Therefore, we think that not using drains in the Karydakis procedure does not increase the complications. However, drain usage should be considered according to its costs and benefits in every case and especially in patients with a BMI greater than 30.

Ethics

Ethics Committee Approval: Ethics committee approval was obtained for this study from the Ethics Committee of Gaziantep Islamic Science and Technology University (decision no: 84, date: 14.02.2022).

Informed Consent: Retrospective study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: U.U., B.S., K.D., Design: U.U., M.B.Ö., Data Collection or Processing: U.U., B.S., Analysis or Interpretation: U.U., B.S., M.B.Ö., Literature Search: U.U., M.B.Ö., Writing: U.U., B.S.

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