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Use of Liquid Phenol for Management of Pilonidal Disease

Pilonidal Hastalığın Tedavisinde Sıvı Fenol Kullanımı

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ABSTRACT

Introduction: This study describes the treatment of pilonidal sinus with liquid phenol and reports its short-term results.

Methods: Patients with pilonidal disease were operated under local anesthesia. Primary and secondary pits were excised. Pilonidal cyst cavity was cleaned with brushing, curettage and irrigation. Wounds were left open. Chemical destruction of sinus wall was performed by liquid phenol.

Results: A total of 67 patients with pilonidal sinus were enrolled in this study. The mean duration of surgery was 14.7 minutes. The mean follow-up period was 27.3 months. There were no systemic complications. Two patients had hemorrhage and three patients had wound infection. The wound healing time was 3-6 weeks. Three cases of recurrence were observed in the follow-up period (4.47 %).

Conclusion: Minimally-invasive surgical technique with liquid phenol is a safe and effective outpatient procedure that can be performed under local anesthesia. It has low recurrence and postoperative morbidity rates.

Keywords: Phenol, pilonidal sinus, wound healing

ÖZ

Amaç: Bu çalışma, pilonidal sinüsün sıvı fenol ile tedavisini tanımlayıp kısa dönemdeki sonuçlarını bildirmektedir.

Yöntemler: Pilonidal sinüslü hastalar lokal anestezi altında ameliyat edildiler. Primer ve sekonder delikler eksize edildi. Pilonidal sinüs kavitesi fırçayla temizlendi, kürete edildi ve yıkandı. Yaralar açık bırakıldı. Sinüs duvarı sıvı fenol kullanılarak kimyasal olarak tahrip edildi.

Bulgular: Bu çalışmaya pilonidal sinüsü olan toplam 67 hasta alındı. Ortalama ameliyat süresi 14,7 dakika idi. Ortalama takip süresi 27,3 ay idi. Sistemik komplikasyon görülmedi. İki hastada kanama ve üç hastada yara enfeksiyonu gelişti. Yara iyileşme süresi 3-6 hafta idi. Takip süresinde üç hastada (%4,47) nüks görüldü.

Sonuç: Sıvı fenol ile minimal invaziv cerrahi yöntem, lokal anestezi ile uygulanabilen güvenli ve etkili bir işlemdir. Bu işleminin nüks ve morbidite oranları düşüktür.

Anahtar Kelimeler: Fenol, pilonidal sinüs, yara iyileşmesi

Introduction

Pilonidal disease lesions are usually located beneath the skin in the sacrococcygeal region. Since its first definition, there are discussions about the treatment of pilonidal disease. Surgeons prefer to operate pilonidal diseases with wide excision extending to sacral tissue. Some surgeons leave the wound to secondary healing, some suture midline wounds for primary closure, and others use more complicated procedures, such as different kind of skin flaps designed to protect the incision away from the midline or flatten the natal cleft. Most commonly, such a complicated procedure requires general anesthesia and hospitalization. In addition, antibiotic treatment, drainage and variable use of sutures are also needed. Pilonidal sinus surgeries are notorious for their associated morbidity, recurrence rates, poor cosmetic results and costs (1). This study describes outpatient liquid phenol treatment of pilonidal disease with local anesthesia and reports short-term results of the technique.

Methods

Study Design

From February 2011 to March 2014, a total of 67 patients with symptomatic pilonidal disease were treated in our hospital. The surgeries included acute/ chronic or primary/recurrent pilonidal diseases. Patients did not receive any premedication or antibiotics, with the exception of medical management in five patients with infected pilonidal disease. Clinical, operative and follow-up data were recorded prospectively. No patients were excluded. The patients were followed-up on a monthly basis and disease recurrence was assessed by office interview and

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physical examination. The interviews were held between September 2012 and December 2014. Recurrence was defined as the return of the symptoms after a recovery period. All patients signed a written informed consent form. The study was performed with the approval of the Fatih University Sema Practice and Research Hospital Ethics Committee of the Hospital (date: 22.11.2010, decision no: 204).

Surgical Technique

We performed the same surgical technique in all patients regardless of the forms of the disease. Except for three patients, all participants had many primary and secondary pits and had advanced stage pilonidal disease (pit is the tissue including the external orifice and the intradermal part of pilonidal disease). Local infiltrative anesthesia with 2 to 6 mL of bupivacaine (Marcaine 0.5%; AstraZeneca Turkey, İstanbul, Turkey) was usually sufficient for pain control regardless of the extent of disease or coexistence of infection. Local anesthesia was performed in all patients who underwent surgery, except six patients who asked for spinal anesthesia. Four of these six patients had an infected pilonidal disease.

Patients were placed in a prone or proctologic position. The buttocks were retracted with adhesive tape. The sacral region was completely shaved and disinfected with povidone iodine solution. The sinus was explored with a metal probe and marked with a marker pen. No blue dye or similar substance was used for demonstration of sinus tracts.

Figure 1. Destruction of sinus wall by liquid phenol

Figure 2. Packing sinus cavity

We made a minimum of two holes by excision of primary or secondary pits. If there were more than two pits, we performed deconstruction with a round cautery blade. Using surgical forceps, aspirator, curette or brush, we cleaned the entire contents of each sinus with debridement. We injected or dripped 3 to 5 mL of 80% liquid phenol into the sinus cavity, waited for 3 to 5 minutes and aspirated and irrigated the cavity with saline solution. The sinus wall was destroyed with this application (Figure 1). The phenol application was repeated if necessary. After careful hemostatic control, we packed the sinus cavity with a thin rolled wet gauze (Figure 2).

Postoperative Care and Follow-up

There was a relatively short period of postoperative follow-up (15 minutes to 2 hours for local anesthesia) before discharge. While antibiotics and analgesics were prescribed for patients with infected pilonidal disease, only analgesics were given to patients with non-infected pilonidal disease. There was no activity restriction such as driving, sitting or walking.

On the first or second postoperative day, we checked the patients for bleeding and other morbidities and instructed relatives of the patients about wound care. Patients were followed weekly until complete wound healing and then re-checked at 6 months (Figure 3).

Statistical Analysis

We evaluated our results in Excel program as percentage and ratio. We did not use any statistical program.

Results

A total of 67 patients with pilonidal sinus were treated by two surgeons between February 2011 and March 2014. Forty-eight patients (71.6%) were male and 19 (28.4%) were female. Male to female ratio was 2.5. The mean age of the patients was 26.8 years (range=16-52). The mean duration of symptoms was 3.8 years (range=2 months-10 years). Forty-six

Figure 3. Complete wound healing

patients had a primary pit in the midline. Of these, 28 had a single pit and 18 had multiple pits. Twenty-one patients had one or more pits extending in the midline. Eight of 67 patients were recurrent pilonidal disease. In our series, 11 patients had acute (infection or abscess) pilonidal disease.

The mean duration of surgery was 14.7 minutes (range=10-22 min), excluding the waiting time of the local anesthesia effect. Local anesthesia prevented pain for 3 to 4 hours after surgery. Three patients required parenteral analgesia in the postoperative period. The time required for wound healing was 3 to 6 weeks (mean 38 days). The mean follow-up was 27.3 months (range=6-37 months). The characteristics and operative findings of patients are shown in Table 1.

There were no systemic complications. Local complications included hemorrhage in two patients (one on the first postoperative day and one on the fourth postoperative day) that were both treated with blood stopper solution (Ankaferd, Immun Pharmaceutical Cosmetics, Ankara, Turkey) and infectious, foul-smelling, yellow-green discharge in three patients which were treated locally with antibiotic solution (Rifocin 125 mg/1.5 mL ampoule, Sanofi Turkey, İstanbul, Turkey). In 22 patients, we used a silver nitrate stick to permanently destroy unwanted granulation tissue.

There were three recurrences (4.4%) during follow-up. All three patients were treated with the same technique. Patient outcomes with liquid phenol treatment are summarized in Table 2.

Table 1. Characteristics and operative findings of patients (n=67)

Age	**16-52 years (mean=26.8)**
Gender	
Male	48 (71.6%)
Female	19 (28.4%)
Duration of symptoms	2 month-10 years (mean=3.8 years)
Presentation of disease	
Acute	11 (16.4%)
Chronic	56 (85.6%)
Previous surgery	8 (11.9%)
Location of pits	
Only midline	46
Midline and lateral	21
Anesthesia	
Local	62
Spinal	5
Mean operative time	14.7 minutes (range=10-27)

Table 2. Outcome of the patients

Follow-up	**27.3 months**
Additional parenteral analgesic requirement	3
Complication	
Infection	3
Bleeding	2
Recurrence	3 (4.4%)
Mean recovery time	38 days

Discussion

Many treatment methods have been reported for pilonidal sinus, but few treatments provide perfect long-term results. There are many stages and clinical presentations of pilonidal disease. Therefore, surgeons should know all available techniques and select the proper treatment according to the extent and severity of the disease and patient preference. Scientific data demonstrate that both open and closed surgical approaches have similar complication rates (2). In addition, both extensive and conservative surgical approaches in pilonidal sinus treatment are associated with similar recurrence rates (3).

Commonly, approximate hospital stay is between 5 and 14 days, and recovery period is between 6 and 10 weeks after total excision and open healing of pilonidal sinuses. In addition, the recurrence rate after surgery is 8% to 21%. Following years, instead of traditional methods, different types of primary closure procedures reduced the recovery time by less than 2 weeks, but hospital stay remained between 7 and 10 days and the recurrence rates ranged from 8% to 30%. These results dominate the use of primary closure procedures. However, one report demonstrated that this group had a recurrence rate of 23% compared to 12% in patients treated with excision and packing procedures (4).

There are still many therapeutic challenges in the treatment of pilonidal disease. Many surgical and non-surgical (conservative) modalities have been proposed. The vast majority of cases are treated surgically. However, there is no consensus on the “ideal” surgical technique. In order to determine an ideal surgical technique, we must first define the ideal management principles. According to accepted principles, some authors have suggested minimally invasive surgery (or non-excisional surgery) for pilonidal disease treatment. Support is growing for this treatment modality.

Phenol-based treatment of pilonidal disease is one of the minimally invasive or non-excisional surgery methods. Khanna and Rombeau (5) classified various treatment strategies for pilonidal disease and described phenol application as an “experimental treatment”. However, according to us and based on other studies, this method is suitable following conservative (non-surgical) treatment (6). Some authors stated that non-excisional therapies, such as phenol application, could result in a high rate of recurrence, especially when patients were not followed up closely (7). Crystalline phenol has been shown to be a successful treatment modality for pilonidal sinus disease, with similar results to other surgical treatments (8). Simple treatment methods for pilonidal disease such as minimally invasive surgery or non-excisional treatments have been associated with less morbidity and low recurrence rates (9-13).

Based on the pathogenesis of acquired foreign body, we described a novel surgical treatment for pilonidal disease that integrates the principles of a minimally invasive operative approach. Our method consists of easy excision of primary and secondary pilonidal pits only, with debridement, sinus cavity cleaning, and chemical cauterization of the sinus cavity and sinus wall with liquid phenol.

The results of surgical treatment for pilonidal disease differ substantially between studies, even among those describing similar techniques.

Postoperative infection and recurrence rates vary between nil and 40% or higher (14,15). In general, the recurrence time for pilonidal disease after surgery is 5 years, but recurrence can be seen in ten years after surgery (16).

Because of the small number of patients in this study and the short follow-up period, definitive conclusions cannot be made. However, our study describes a method of minimally invasive pilonidal disease surgery that resulted in no systemic complications. Three patients had recurrence during the follow-up period. We believe that the cause of recurrence was secondary infection.

Conclusion

Liquid phenol application is a simple, safe, and effective outpatient procedure for treating pilonidal sinus disease. It is performed by local anesthesia and can achieve good aesthetic outcomes for both chronic and acute infectious pilonidal disease. In case of recurrence, the same treatment can be repeated without hesitation.

Ethics Committee Approval: The study was performed with the approval of the Fatih University Sema Practice and Research Hospital Ethics Committee of the Hospital (date: 22.11.2010, decision no: 204).

Informed Consent: All patients signed a written informed consent form.

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