Research Article

Operative Treatment Of Acute Sacrococcygeal Pilonidal Sinus With A Single Opening Under The Effect Of Local Anesthesia

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Date Submitted: 24/4/2017
Date Accepted:5/6/2017

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Abstract

Background: Pilonidal sinus is an acquired disease due to the collection of fallen hair in the sacrococcygeal area; there may be one or more openings which communicate with one or more tracts lined by granulation tissue. There are many surgical operations to treat the condition, but no single operation carries a 100% cure rate without the risk of recurrence. Financial considerations are important in the management of patients with pilonidal sinus, because it affects young adult patients, so admission to the hospital and the work off time has significant considerations in choosing the type of operative management.

Objective: To study the significance of operative treatment of acute uncomplicated sacrococcygeal sinus under the effect of local anesthesia.

Patients and Methods: A randomized cross sectional analytic study performed at the Al-Imamain Al-Kadhimain Medical City, for patients with acute pilonidal sinus with a single opening, over the period from April 2007 to April 2015. The operation was done in the theater with the patient in the prone position, local anesthetic infiltration around the opening of the sinus, and along its tract; incision along the tract of the sinus and laying it open, removing the hair, debris, and the granulation tissue by gently curating it. Excision of the lateral wall of the sinus, and the skin edges are trimmed, secure hemostasis, and dress the wound. Follow up of patients was daily for one week, then every week till complete healing occurred (usually 2-4 weeks), looking for any complications; then follow up of the patients every month for three months, and every three months for one and a half year, for any recurrence.

Results: A total of 53 patients; 52 males (98.11%), and one female (1.88%), their age ranged from 17-39 years, mean age was 25.16±76 years. The patients presented with pain 43 (81.13%), infection was 8 (15.09%), and abscess 2 (3.77%) patients. The average healing time was about 2-4 weeks. The patients returned to their work one week after the operation. There were no complications other than one patient 1 (1.88%) who had recurrence after 9 months, and the procedure was repeated to him successfully.

Conclusion: Treatment of sacrococcygeal pilonidal sinus under the effect of local anesthesia is a safe and simple procedure; there is no need for admission to the hospital, the patient can return to his work after one postoperative week, and the procedure can be repeated in case of recurrence.

Key words: Acute Sacrococcygeal pilonidal sinus, Local anesthesia.

INTRODUCTION

Pilonidal (Latin; pilus: hair; nidus: nest) sinus was described by Herbert in 1883;[1] sacrococcygeal pilonidal sinus means a sinus containing hair in the natal cleft overlying the coccyx.[2] Since that time to date, there is no single appropriate operative treatment of the disease that gets rid of the disease without the risk of recurrence. It is a chronic disease which is more common among young men with dark hair,[3] and its incidence ranges from 10-26 per 100,000 of the population[4].It is an acquired disease due to the presence of fallen hair in the natal cleft overlying the coccyx, which may also affect other regions like between the fingers of barbers, the umbilicus, and the axilla[5].The nature of the hair (dark hair), and the skin vulnerability affect the occurrence of the disease.[6] A wide range of operative treatments of the condition, from excision and leaving an open wound, excision with primary wound suturing which carries high risk of recurrence, or the use of different types of flaps to close the wound cavity.[7]

Although different surgical approaches have been used to manage sacrococcygeal pilonidal sinuses, none of these operations are ideal to eliminate the postoperative morbidity, including delayed wound healing, discomfort, and the high rate of recurrence. One of the factors that increases the incidence of recurrence is the presence of a midline wound and scar, which must be taken into consideration in the operative procedure and management.[8]

The patient may present with pain in the lower back overlying the sacrococcygeal area, infection, or abscess formation with discharge. Chronic sacrococcygeal pilonidal sinus is treated by wide excision of the whole diseased area to ensure removal of all the tracts (the main, and the side tracts of the sinus); and the wound cavity is either left open with daily dressing to heal by granulation tissue,[9] or closed by sutures primary suturing which carries a high incidence of recurrence, secondary intention or the use of different types of flaps (Bascom procedure [10] - Z-palsty, Limberg flap and Karydakis flap) aiming at the achievement of complete healing of the wound away from the midline.[4] In spite of the more advanced operative treatment of the disease with these flap operations with increase morbidity, there is still a risk of recurrence of the disease after these operations.[11- 13]

More simple operations of just laying open of the tracts of the pilonidal sinus under the effect of local anesthesia with cleaning of the tracts from the hair and granulation tissue and leaving it open, has been described previously as an option of management of sacrococcygeal pilonidal sinus as a day clinic or even as an outpatient procedure.[14,15]

This study is a randomized cross sectional study between 2007 and 2015 to evaluate the treatment of acute uncomplicated sacroccocygeal pilonidal sinus with a single opening by laying it open, and curettage of the tract under the effect of local anesthesia, and evaluating the healing time, complications, recurrence, the period of time to return to work, , and patient's satisfaction.

PATIENTS AND METHODS

After ethical approval of the study by Institution Review Board in the College of Medicine Al-Nahrain University, a randomized cross sectional analytic study was performed at the Al-Imamain Al-Kadhimain Medical City (the Teaching Hospital of the Medical College), for patients with pilonidal sinus with a single opening, over the period from April 2007 to April 2015.

Inclusion criteria include patients with acute pilonidal sinus with a single opening, with or without infection and abscess formation.

Exclusion criteria include:

1- Patients with more than one opening

2- Recurrent pilonidal sinus.

After a proper history, and physical examination, the disease and options of treatment, risk, and complications were fully explained to the patients. Written consent was taken after agreement of the patients. The operations were done in the operating theater (side room of the theater specified for operations under local anesthesia).

One vial of ceftriaxone 1 gram intravenously was given before operation. The patient was positioned in the prone position. Under complete aseptic technique, exposure of the pilonidal sinus was done by separation of the gluteal area by adhesive straps, and sterilization of the surgical field by 10% Povidine iodine. Local anesthetic infiltration around the opening of the sinus and along its tract using xylocaine 2%; determination of the tract of the sinus and its length was done by a probe inserted through the opening of the sinus. Incision along the tract of the sinus, and laying it open; removal of the hair and curettage of the wound was done. Carful checking of the main tract of the sinus was done to exclude any branching or side tracts which were opened if they were found. The lateral wall of the sinus was excised, and trimming of the skin edges was

done. Hemostasis was secured, and then dressing of the wound with 10% Povidine iodine and packs was done. The patients were kept in the supine position for two hours in the recovery room, and then check the wound and dressing (for any bleeding), and when everything is satisfactory; a phone number was given to the patient for an emergency call if needed before discharging the patient, on ceftriaxone 1 gram twice daily for three days, and analgesia (paracetamol 500 mg); to be seen next day.

The patient was seen next day; examination of the wound is done and change of dressing with packs and 10% Povidine iodine, and the patient was advised for changing the dressing daily in the same way. After the first three days of injectable antibiotics (ceftriaxone 1 gram vials twice daily), oral antibiotics (ciprofloxacin tablets 500 milligrams twice daily), and metronidazole tablets 500 milligrams thrice daily were given for another five days .The patient can return to his work one week postoperatively. The patient was advised to keep the intergluteal area and the back clean, and free of hair.

The Patients who presented with abscess formation; drainage of the abscess was done under the effect of local anesthesia, with cleaning of the abscess cavity, and evacuation of pus and hair, and the patient is advised to daily change of the dressing of the wound. The patient was advised to regularly shave the area and strict hygiene.

Follow up of patients was daily for one week, then every week till complete healing occurred (usually 2-4 weeks), looking for any complications; then follow up of the patients was done every month for three months, and every three months for one and a half year, for any recurrence.

Statistical Analysis used:

- Categorical variables frequency , %s
- Continuous variables Means ± SD

RESULTS

Over the period from April 2007- April 2015, a total of 53 patients were included in this study; 52(98.11%) males, and one female (1.88%). The age of the patients ranged from 17- 39 years, mean age was 25.16±76 years. Average healing time was about 2-4 weeks. Table (1) shows the patient's age and their gender.

The operative procedure was done for 51 (96.22%) male patients, while the other two (3.77%) patients with abscess formation (one male and one female); drainage of the abscess and removal of the hair inside the abscess cavity was done, but unfortunately those patients were not attending the hospital after complete healing of the abscess.

The patients presented with either:

1- Pain at the sacroccoygeal area without signs of infection, which was the complaint of 43 (81.13%) patients.

2- Mild infection and cellulitis without abscess formation (in addition to the pain at the sacroccoygeal area) which was the complaint of 8 (15.09%) patients.

3- Abscess at the sacroccoygeal area (with pain) which was the complaint of 2 (3.77%) patients; 1 (1.88%) males, and 1 (1.88%) female patient.

Table (2) shows the patient's complaint and their incidence.

There were no complications other than one patient 1 (1.88%) who had a recurrence after 9 months, and the procedure was repeated for him successfully. Table (3) shows the outcome of patients and recurrence after surgical treatment.

The patients returned to their work after one week of the procedure, and all patients were fully satisfied with the procedure.

Table (1): Shows the patient's age and their gender.

Age group	Number of the patients	Gender of the patients
17-19 year	5(9.43%)	All were Male
20-29	46(86.79%)	45 male 1 female
30-39	2(3.77%)	All were Male
Total	53	

Table (2): Shows the patient's complaint and their incidence.

The presentation of patients	Number of patients	Gender
Pain without signs of infection	43 (81.13%)	All were males
Mild infection and cellulitis (with pain)	8 (15.09%)	All were males
Abscess formation (with pain)	2 (3.77%)	1(1.88%) males 1 (1.88%) female
Total	53	

Table (3): Shows the outcome of patients and recurrence after surgical treatment.

Type of the operation	Number of the patients	Outcome
Laying open the pilonidal sinus under local anesthesia	51 (96.22%)	50 cured 1 recurrence after 9 months
Drainage of abscess	2 (3.77%)	Patients were not attending the hospital after complete healing of the abscess.
Total	53	

DISCUSSION

Although sacrococcygeal pilonidal sinus is not a life threatening disease, but it is a distressing condition due to the pain and attacks of infection with or without abscess formation and sometimes discharge from the sinus[13]. The management of the wound cavity after complete surgical excision of the sinus, is either by leaving it open with daily dressing to be healed by granulation tissue (secondary intention), or closure of the wound by different methods of closure (suture in layers, or the use of different types of flaps).[(11)] Leaving the wound cavity open is associated with a low recurrence rate, but it takes a prolonged period of time for healing and it needs daily dressing of the wound[16]. In spite of the presence of many types of closures of the wound cavity after excision of the sinus as, midline suturing, an off-midline closure, or the use of different types of flaps; none of these different operations are considered ideal in the prevention of recurrence of the disease, and avoiding the complications of wound healing of the flaps.[(17)]

The idea behind this study is that:

1- General anesthesia especially when the patient is in the prone position carries a risk to the patient's life.

2- No definitive ultimate operation is available without an incidence of recurrence.

3- Avoidance of a large wound cavity with a prolonged healing time.

4- To shorten the period of the patient off work.

5- Easy treatment of the recurrence.

6- Patient's satisfaction with the procedure due to its simplicity and safety.

In this study, local anesthesia was used to treat acute uncomplicated pilonidal sinus with a simple procedure of laying open the sinus, and removal of the granulation tissue and hair and curetting the track of the sinus to enhance new healthy granulation tissue formation. The patient was advised to keep the area clean, and free of hair always to avoid recurrence, or new sinus formation.

Sacrococcygeal pilonidal sinus is much more common in males than females (especially hairy males); in this study there were 52 (98.11%) male patients, and only one female, but unexpectedly the female patient was a blonde young female, and presented with a deep abscess. The age of the patient ranges from 17-39 years with a mean age of 25.16±76 years which is comparable with other studies.

Most of the patients 43 (81.13%) presented with pain at the sacrococcygeal area without signs of infection, the other 8 patients (15.09%) presented with a mild infection and cellulitis, those patients were treated first with antibiotics, and then after complete resolution of the infection, the operation was done for the patients.

The only female patient (1.88%) was a young blonde female who presented with acute pain and tenderness in the sacrococcygeal area for a few days duration with deep tenderness in the area; diagnosis of an abscess was done clinically, and drainage of the relatively deep abscess (about 1.5 centimeters from the skin) under the effect of local anesthesia with removal of pieces of hair from the abscess cavity was done. The patient improved, but unfortunately she did not attend to the hospital after complete healing.

The other patient with abscess was a young hairy male patient (1.88%) who presented with a pilonidal abscess at the sacrococcygeal area, the abscess was drained under the effect of local anesthesia, and injectable antibiotics were given (ceftriaxone 1 gram twice daily) and metronidazole tablets 500 milligrams thrice daily, with a daily dressing, but also the patient did not attend to the hospital after complete healing of the abscess.

Regular follow up of patients for one and a half years showed no complications other than one patient who developed a recurrence of the sinus nine months postoperatively, and the same procedure was repeated for him with success. He ignored the shaving of hair in the area, and his job as a worker in the hot weather caused a lot of sweating in the area, and the cleaning was not standard, in addition to that, it may be a new pilonidal sinus.

In review of literature with other modalities of surgical treatment; excision of the sinus with primary closure carries a risk of recurrence ranging from 7- 42% in some studies [18] while other operations like rhomboid excision, and Limberg flap repair carries a 0-3% recurrence rate in other studies.[19-22]

Wide excision of the pilonidal sinus with wound closure by skin flaps to keep the scar off the midline, and to flatten the natal cleft using different techniques like; cleft closure, local advancement flap (V-Y advancement flap), advancement flap (Karydakis procedure), and rotational flap [Limberg flap, and its modification (Mentes modification of Limberg flap), and gluteus maximus myocutaneous flap.[19,22] Although the rhomboid excision and Limberg flap techniques promise successful results, the recurrence rate following Limberg flap procedures has been reported to range from 0 to 7% and has primarily been encountered at the lower portion of the incision left on the intergluteal sulcus.[23,24]

Mentes and his colleagues modified the Limberg's flap for the treatment of sacrococcygeal pilonidal sinus in 2004, and their study shows a healing time of two weeks and 0% recurrence rate.[22, 25]

Karydakis and Bascom described a technique of asymmetrical closure of the wound cavity after excision of the pilonidal sinus with excellent results.[10] There was a less than one percent recurrence rate in Karydakis study and a hundred percent healing rate in Bascom's study of 9-10% of his patients with refractory sinus after a second cleft lift or minor revision procedures.[26]

In this study, there was no admission to the hospital, and the healing time is about 2-4 weeks, and the patient can return to his job one week after the operation.

Financial considerations are important and significant in the management of patients with sacrococcygeal pilonidal sinus, because the disease affects young adult patients. Limberg flap operations report a week to 17.5 days' work off time,[27,28] while a midline primary closure report a three weeks to 23 day's work off time.

The number of days of admission to the hospital that the patient needed for management in the hospital is also important. Zahid et al,[29] reported five to six days of hospital admission for patients with wide excision of the sinus, while management of the patients with Karydakis operation (closure of the wound) needs two and a half days of admission to the hospital. They report a seven and a half weeks for healing of the wound of patients with excision of the sinus, and leaving the wound open to be healed by granulation tissues, while only three weeks for healing of the wound after closure using karydakis operation; another study[30] report six to twelve weeks for healing of the open wound without closure, and ten to sixteen days after wound closure.

CONCLUSION

Operative management of acute uncomplicated sacrococcygeal pilonidal sinus with single opening under the effect of local anaesthesia is a safe and simple procedure with minimal complications; there is no need for admission to the hospital, the patient can return to his work after one postoperative week, and the procedure can be repeated in case of recurrence.

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