Original Article

RECURRENCE AFTER EXCISION AND PRIMARY CLOSURE OF PILONIDAL SINUS

Tariq Wahab Khanzada[1], Abdul Samad[2]

ABSTRACT

Objective: The objective of this study was to determine the recurrence rate of pilonidal sinus after excision and primary closure.

Methodology: This was a prospective study conducted at King Khalid Hospital, Najran, Kingdom of Saudi Arabia between February 2002 and January 2004. The data was collected for all patients undergoing excision and primary closure of pilonidal sinus disease during above mentioned period. This data was analyzed with special reference to recurrence rate and was compared with local and international studies.

Results: Sixty patients with pilonidal sinus fulfilling the selection criteria were treated with excision and primary closure during the stipulated period. Six patients (10%) developed wound infection and half of these were categorized as minor wound infections. The recurrence rate was observed to be 5% with a mean follow up of about one year.

Conclusion: Excision and primary closure of uncomplicated pilonidal sinus disease is associated with short hospital stay, less postoperative time off work and decreased chances of recurrence.

KEY WORDS: Pilonidal sinus, Recurrence, Primary closure.

Pak J Med Sci May - June 2007 Vol. 23 No. 3 375-379

INTRODUCTION

Pilonidal sinus disease is a common disorder of the sacrococcygeal region. It presents in a variety of ways including asymptomatic, acute pilonidal abscess, chronic pilonidal sinus or complex/recurrent pilonidal sinus disease.[1] Surgical treatment of pilonidal sinus disease is challenging due to high rates of wound infection, impaired wound healing and recurrence of disease after some time.[2] Various different techniques have been used with variable success rates but no single method can be labeled as the ideal treatment. Some times the operation is worse than the disease itself. Both techniques of excision of sinus with secondary healing or performing marsupialization result in a midline wound that takes several weeks to heal and there is significant recurrence rate because of open wound.

Excision and primary closure is a preferable method as compared to simple excision and secondary healing. Primary closure results in lower wound dehiscence and infection, quicker healing time, fewer postoperative visits, reduced pain and shorter time off work.[3] Considering the early recurrence and secondary infection, various flap techniques and lateralization of anal cleft procedures have been attempted. The common feature of all these different procedures is that they reduce the depth of cleft and place the suture line away from midline and attempt to achieve low

1. Dr. Tariq Wahab Khanzada
Assistant Professor
2- Dr. Abdul Samad
Associate Professor
1-2 Department of Surgery
Isra University Hospital,
Hyderabad - Pakistan.

Correspondence:

Dr. Tariq Wahab Khanzada,
Flat. No. C-51, Hasnain Square,
Liberty Market, Jacob Road,
Hyderabad, PAKISTAN.
E-mail: tariqwahab@yahoo.com

* Received for Publication: October 17, 2006
* Revision Received: December 23, 2006
* Accepted: December 29, 2006

recurrence rate.[2] However these procedures are technically more demanding and are probably best performed by plastic surgeon. Their use is generally restricted to recurrent complex pilonidal sinus disease. The objective of this study was to determine the recurrence rate of treating pilonidal sinus with excision and primary closure.

PATIENTS AND METHODS

This is a prospective study of all patients undergoing excision and primary closure of pilonidal sinus disease from February 2002 to January 2004 at King Khalid Hospital, Najran, Kingdom of Saudi Arabia. The patients who presented with acute pilonidal abscesses were excluded from this study. Recurrent or complex pilonidal sinuses were also excluded from this study. All patients underwent routine physical examination and were prepared for surgery after routine laboratory investigations. Standard surgical technique and perioperative management was done. Operative area was shaved on the morning of operation day. All patients were operated under general anaesthesia. Patients were intubated on trolley and then shifted to the operating table in prone position. Both buttocks were strapped widely by elastoplaster. Operative area was prepared by using povidone-iodine three times and draped usually. Antibiotic prophylaxis of 1.2 gm amoxicillin-clavulinic acid was given intravenously at the time of induction and continued for 48 hours. Then this was changed to oral form for five days.

Sinuses were probed under anaesthesia and methylene blue was injected by attaching the syringe with I/V cannula into the sinuses. An elliptical incision was made around the sinuses and further dissection is done by using diathermy till the whole tract was excised completely. Haemostasis was secured and rechecked after cutting the elastoplaster traction. Full through and through tension sutures were applied by using polypropylene 0 sutures. Wound was closed in layers. Simple skin sutures were applied by using polypropylene 2/0. Tension sutures were tied over the gauze piece. A Redi-vac drain was placed in the wound and brought out through a separate stab incision. Drains were removed when the drainage was minimal. All the excised pilonidal sinuses were subjected to histo-pathological examination.

Patients were discharged 5th-6th days after the operation. Tension sutures were removed on 5th post operative day. All patients were advised to avoid pressure on the wound until the removal of sutures. Skin sutures were removed on 10th post operative day in out-patients department. Patients were given instructions regarding anal hygiene and hair removal from the area. Subsequently patients were reviewed about one month after surgery in out-patients department and then every three months for about one year. Time off work was defined as the time from time of surgery to the date on which the patient returned to normal activities including employment and leisure activities.

The data of these patients was analyzed with special reference to recurrence rate. Recurrence was defined as the presence of any persistent purulent / blood stained discharge from the previously operated or nearby area during the follow up. This rate was compared with recurrences observed in local and international studies.

RESULTS

During the above mentioned period, sixty patients with pilonidal sinus fulfilling the selection criteria were treated with excision and primary closure. These include 53 males and seven females with mean age of 35 years (range 18-50). The mean post operative hospital stay was six days (range 5-7) and mean time to return to work was twenty one days (range 14-35). The mean time for drain removal was three days (range 2-8). Tension sutures were removed on 5th post operative day in all patients.

In all, six patients (10%) had wound infection. Out of these three were minor wound infections and remaining three were major wound infections. Wounds were laid open

after removing the sutures and subsequently dressings were done in these patients for about ten to fifteen days. Two patients had seroma formation which were aspirated and both patients responded well. One patient had haematoma which was evacuated in out-patient department by removing few skin sutures. Wound was subsequently dressed for about two weeks. The mean follow up of patients was about twelve months (range 10-14). Only three patients had recurrence which represents an over all recurrence rate of 5%. These recurrences were identified during the follow up between 3-6 months. These three patients had blood / pussy discharge from the operated site. In two patients, secondary infection caused by residual hair and debris was responsible for recurrence and this was further complicated by inadequate wound care and insufficient attention to depilation. In third patient, the recurrence was caused by failure to identify small secondary sinus at the time of primary operation. The complications have been summarized in Table-I.

Table-I: Complications of pilonidal sinus surgery (n = 60)

Minor wound infection	3 (5%)
Major wound infection	3 (5%)
Seroma formation	2 (3.3%)
Haematoma formation	1 (1.6%)
Overall recurrence	3 (5%)

DISCUSSION

Pilonidal sinus disease was first described by Hodges in 1880 when he used the term "pilonidal sinus" to describe a chronic infection that contained hair and was usually found between buttocks. The term 'pilonidal' comes from pilus (hair) and nidus (nest) meaning literally "nest of hair". The disease most commonly involves the saccrococcygeal region between the buttocks but it also occurs in axilla, umbilicus and interdigital space. Interdigital pilonidal sinus is an occupational disease of hair dressers and the hairs within the interdigital cleft or clefts belong to the customers.[4]

The onset of pilonidal sinus is rare before puberty and after the age of 45 years. Males are affected more frequently than females probably due to their more hirsute nature.[5] During World War II, the condition was common in jeep drivers which led to it being known as 'jeep disease'.[1] This is because of shearing action of buttocks which is increased by sitting on a hard seat and especially vibration of the vehicle, loose hair travel down the interdigital furrow and penetrate the skin and resulting in pilonidal sinus disease.[4] The condition is more common in Caucasians than Asian or Africans due to different hair characteristics and growth pattern.[6] Malignant change is a relatively rare complication of pilonidal disease. The most common scenario is of squamous cell carcinoma arising after decades of antecedent's pilonidal disease.[7] Malignancy arising in a chronic wound seems to have worse prognosis than cutaneous malignancy arising de novo on skin, hence early detection is imperative.[8] Although malignancy is rare complication but it carries a significant risk to young men and a more sinister reason why besides discomfort and inconvenience, pilonidal sinus disease should be taken seriously.[1]

The treatment of pilonidal sinus is controversial. The number and variety of published techniques are testament to the complexity of treating pilonidal sinus and the fact that no single procedure is superior in all respect.[1] An ideal operation should be simple, offer shorter hospitalization as well as rapid wound healing, a low recurrence rate, minimal pain, decreased time off work and cost effective.[3] Allan Mersh in 1990 reviewed many surgical procedures available for symptomatic pilonidal sinus disease.[9] The summary of his results is shown in Table-II.

The most unpleasant complication after pilonidal sinus surgery is persistently unhealed midline wound which is commonly seen after laying open the sinus or wide local excision without primary closure. Such wounds are often painful, delay the return to normal activity and usually demand regular nursing and medical attention. These wounds can persist

Table-II: Summary of treatment for pilonidal sinus[9]

Method	*Time to healing (Days)*	*Recurrence/ failure (%)*
Curettage of tract	21-52	3-24
Phenol injection	14-61	0-35
Wide excision and marsupialization	31-90	1-43
Primary closure	10-50	0-37
Asymmetric closure	8-16	0-5

for longer periods of time. Considering the above disadvantages, the primary aim of treatment should be to reduce the duration of treatment, cost and recurrence rate. Karydakis has described a technique of asymmetrical wound closure. Different studies have shown an overall recurrence rate of 4% by using Karydakis technique.[10-12] Bascom's technique has a higher success rate. It involves an incision lateral to midline. Midline pits are excised and the abscess cavity is drained laterally 2-3cm away from midline and curetted.[13]

For more complicated and recurrent Pilonidal sinuses and unhealed midline wounds, more aggressive treatment with Rhomboid flaps, Z plasty or gluteal myocutaneous flaps are used. In one study, Tekin has treated 162 patients using a Limberg flap with an average hospital stay of four days. About 93% of the cases were reported to be healed primarily with 2% recurrence.[14] Other studies has shown wound complications and recurrence rates of 0-12.5% and 0-5% respectively.[15-18] These operations however require major surgery and are cosmetically disfiguring. They may be viewed as "sledgehammer to crack a nut" where lesser operations are equally preferable.[19]

Excision and primary closure in this study provided good results in terms of healing and an acceptable recurrence rate (5%). This recurrence rate is favourably compared to two recent studies which have shown the recurrence rates of 5.6% and 8% after excision and primary closure.[20,21] In one local study, there were no recurrences up to a maximum follow up of four years when excision and primary closure technique was used.[22] Tension and risk of accumulating hair in midline clefts are considered the main problems in connection with this procedure. Some studies have found excision and primary closure superior to open excision in term of recurrence rate. In a local prospective study, primary closure was found better in terms of hospital stay and postoperative work off.[23] In another study, excision and primary closure of pilonidal sinus was reported to be associated with less morbidity and more cost effectiveness than excision and open packing.[5]

CONCLUSION

Excision and primary closure is a safe operative procedure for uncomplicated cases. It is found better in terms of short hospital stay, less postoperative time off work, quick healing and less chances of recurrence. Complicated, complex or recurrent pilonidal sinuses require more aggressive treatments such as Rhomboid flaps, skin grafting, Z plasty or gluteal myocutaneous flaps etc.

REFERENCES

1. Miller D, Harding K. http://www.worldwidewounds.com/2003/December/Miller/pilonidal-sinus.html 2003.
2. Katsoulis IE, Hibberts F, Carapeti EA. Outcome of treatment of primary and recurrent pilonidal sinuses with the Limberg flap. Surgeon 2006;4(1):7-10.
3. Werkgartner G. "Knowledg-based therapy of the pilonidal sinus". Eur Surg 2004;36(3):170-1.
4. Williams NS. The anus and anal canal. In Bailey & Love's short Practice of Surgery (24th edn), Russell RCG, Williams NS, Bulstrode CJK (eds.), Arnold Publishers: London, 2004;1242-71.
5. SondenaaK, Nesvik I, Abderson E, Natas O, Soreide JA. Characteristics and symptoms in chronic pilonidal sinus disease. Int J Colorectal Dis 1995;10(1):39-42.
6. Berry DP. Pilonidal sinus disease. J Wound Care 1992;1(3):29-32.
7. Abboud B, Ingea H. Recurrent Squamous cell carcinoma arising in sacrococcygeal pilonidal sinus tract. Report of a case and review of the literature. Dis Colon Rectum 1999;42:525-8.
8. Trent TJ, Krisner RS. Wounds and malignancy. Adv Skin Wound care 2003;16(1):31-4.
9. Allen-Mersh TG. Pilonidal sinus: finding the right track for treatment. Br J Surg 1990;77:123-32.
10. Patel H, Lee M, Bloom I, Allen-Mersh TG. Prolong delay in healing after surgical treatment of pilonidal sinus is avoidable. Colorectal Dis 1999;1:107-10.

11. Anyanwu AC, Hossain S, William A, Montgomery AC. Karydakis operation for sacrococcygeal pilonidal sinus disease: experience in a district general hospitsl. Ann R Coll Surg Engl 1998;80:197-9.
12. Kitchen PR. Pilonidal sinus: experience with Karyadakis flap. Br J Surg 1996;83:1452-5.
13. Bascom J. Pilonidal sinus. In: Current Therapy in Colon and Rectal Surgery. New York: Dekker, 1990;32-9.
14. Tekin A. Pilonidal sinus: experience with Limberg flap. Colorec Dis 1999;1:29-33.
15. Azab AS, Kamal MS, Saad RA, Abou Al Atta AK, Ali NA. Radical cure of pilonidal sinus by a transposition rhomboid flap. Br J Surg 1984;71:154-5.
16. Bozkurt MK, Tezel E. Management of pilonidal sinus with the Limberg flap. Dis Colon Rectum 1998;41:775-7.
17. Cubukeu A, Gonullu NN, Paksoy M, Alponat A, Kuru M, Ozbay O. The role of obesity on the recurrence of pilonidal sinus disease in patients who are treated by excision and Limberg flap transposition. Int J Colorectal Dis 2000;15:173-5.
18. Kapan M, Kapan S, Pekmezci S, Durgun V. Sacrococcygeal pilonidal sinus disease with Limberg flap repair. Tech Coloproctol 2002;6(1):27-32.
19. Senapati A, Cripps NPJ. Pilonidal sinus. In: Recent advances in Surgery, Taylor I, Johnson CD, vol 23. Churchill Livingstone 2000;33-42.
20. Mentes O, Bagci M, Bilgin T, Coskun I, Ozgul O, Ozdemir M. Management of pilonidal sinus disease with oblique excision and primary closure: results of 493 patients. Dis Colon Rectum 2006;49(1):104-8.
21. Dalenback J, Magnussom O, Wedel N, Rimback G. Prospective follow-up after ambulatory plain midline excision of pilonidal sinus and primary suture under local anaesthesia-efficient, sufficient, and persistent. Colorectal Dis 2004;6(6):488-93.
22. Choudhry ZA, Akhter MJ, Rafi Y, Syed AS, Chaudhry AM. Primary closure after Pilonidal sinus Excision. Ann King Edward Med Coll 1997;2(1-2):9-10.
23. Shah PS, Shah SQA, Qazi AR, Memon AS. An experience of close versus open surgical methods for treatment of Pilonidal sinus disease. Med Channel 2005;11(1):65-7.