ORIGINAL ARTICLE

Experience of Pilonidal Sinus Excision with Off Midline Closure Over A Drain

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ABSTRACT

Objective: Despite different research studies available advocating various methods of treatment for Pilonidal sinus, recurrence rate and complications are marked. The aim of our study was to evaluate the efficacy of pilondal sinus excision with off midline closure over a suction drain and establish it as a standard treatment protocol.

Methods: This prospective study was conducted over a period of six years from March 2005 to April 2011 in Kohat, KPK, Pakistan. A total of 125 patients were included in the study. All the patients were male between 25 to 40 year of age and had chronic pilonidal sinus diagnosed on history and physical examination alone. Extensive shaving of back hair from nape of neck to natal cleft pre- and post operatively at regular intervals for six months was performed. Excision of the chronic pilonidal sinus along with all tracks and recesses with off midline closure over suction drain was done under general anesthesia.

Results: Full primary healing was obtained in 112 (89.6%) patients, only 4 (3.2%) patients had recurrence. Wound infection occurred in 9 (7.2%) patients. But all these complications healed. The average stay in hospital was 3 days. Follow up period was 1 year.

Conclusion: Off midline closure over the drain is a superior surgical technique to treat pilonidal sinus. It helps in early recovery and discharge from hospital and has minimal recurrence rate.

Keywords: Pilonidal sinus, natal cleft, off midline primary closure

INTRODUCTION

Pilonidal sinus is a blind epithelial tract situated in the skin of the intragluteal cleft, a short distance behind the anus and generally containing hair.[1] The etiology and pathogenesis of pilonidal sinus is still controversial. Consensus of majority of clinicians and pathologists is that it is basically caused by excessive hairiness, poor hygiene, and humidity.[2] Other contributory factors are increased sweating, prolonged sitting and buttock friction, poor personal hygiene, obesity, local trauma, increased depth and narrowness of the natal cleft. Pathogenesis states that the friction movements of the buttocks paves the way for loose hair to collect and insert in deep cleft.[4] Loose hairs are then collected in the cleft by increased sweating associated with prolonged sitting and buttock friction, obesity, poor hygiene, and local trauma. The hairs act as a foreign body, initiate an inflammatory response and can then lead to a pocket of infection leading to abscess or sinus formation.[5]

Pilonidal sinus is usually seen in young adults. The estimated incidence is 26 in 100000 cases [1,2]. Pilonidal sinus is considered a very troublesome disease entity because of the high morbidity and recurrence. Several treatment modalities have been tried including shaving, incision and drainage, phenol application, cryosurgery, excision with primary closure, excision with open packing, excision with marcupialization, and recently, flaps surgery.[6,7,8]

Surgery is the mainstay of treatment. Principles of treatment are eradication of the sinus tract, good wound healing, and prevention of recurrence.[9,10] After excision, the wound is either left open to heal by secondary intention or primarily closed with or without a suction drain in place. Reduced wound tension in open healing method facilitates trouble free healing without recurrence if all sinus tracts are fully excised, however, open methods are troublesome due to painful wound management and delayed wound healing. On the contrary, primary closure leads to easy wound management and rapid healing, but the main problem observed with the primary closure technique is wound infection and high rate of recurrence.[11,12,13]

Primary closure can be broadly categorised as midline (with the wound lying within the natal cleft) or off midline closure (where the wound is placed out with the midline). Midline closure leads to midline scar in a persistent deep natal cleft potentially leading to high recurrence rate. The problems related to a continuing natal cleft prompted surgeons to discover techniques to

flatten the natal cleft and shift the scar laterally to diminish the recurrence rate. Bascom recommended excision of the midline pits with lateral open drainage of any associated abscess. Karydakis used an asymmetric excision and primary closure.[14] Recently various types of reconstructive procedures like Z-plasty, W-plasty, V-Y plasty and various flap techniques have been used. The advantage of off midline closure is that it is easy to perform, enables tension free suturing, prevents wound breakdown, and its off midline location eventually helps in maintaining local hygiene, avoids hair insertion by reducing the friction between buttocks, reduces maceration, erosions and scar formation at the natal cleft.

In our local set up, where chronic pilonidal sinus disease is a common problem, the usual treatment adopted by surgeons is surgical excision with secondary wound healing. The objective of our study was to evaluate the efficacy of off midline primary closure with suction drain in place and establish it as a standard treatment for pilonidal disease. Efficacy was measured in terms of wound infection and recurrence rate.

MATERIALS AND METHODS

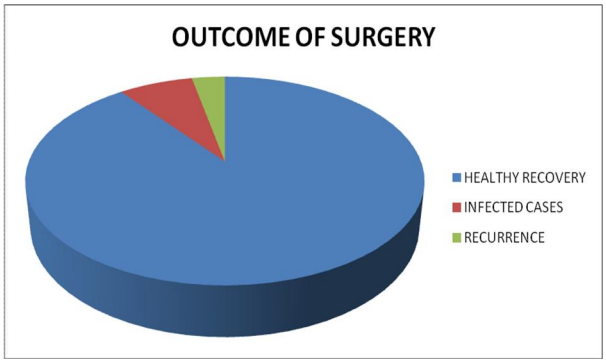
The prospective study was conducted over a period of six years from March 2005 to April 2011 in Kohat, KPK, Pakistan. A total of 125 patients with primary or recurrent pilonidal sinus disease were included. All the patients were male between 25 to 40 year of age. Patients who had pilonidal abscess had incision and drainage first before the definite treatment. Surgery was performed under general anesthesia with patients placed in prone jackknife position and buttocks strapped for wide exposure. After adequate shaving and skin preparation, area to be excised was carefully marked. Sinus was widely excised along with all the tracts and pits and wound closed off midline with a suction drain in place. Drain was removed subsequently after 24 to 48hrs when the reveal was less than 30 millilitres. Patients were advised to return to normal activities after removal of stitches i.e at 10th day, but exercise or sitting down on the wound was avoided for two weeks. Follow up of all patients was performed on outpatient basis, every month for first three months and then monthly for a period of twelve months.

RESULTS

One hundred and twenty five patients had this surgery. Among them, the mean age was 21 years (Range: 17–45 years). One hundred and twelve patients (112 i.e 89.6 %) had full primary healing without any complication. Nine patients (9 i.e7.2%) presented with infection. Three patients had minimal epidermolysis of flap corners, two (1.61%) had slight gaping of wound edges and remaining four were infected grossly and required opening of stitches and secondary closure after 7days. However all 9 healed completely with conservative treatment. Only 4 patients had recurrence (3.2%), seventh month after surgery. Probably the cleft was not properly flattened at the site of recurrence. The mean length of hospital stay was 3 days (Range: 2–5 days) and most patients returned to work within 2 weeks.

Table 1: Outcome of Surgery

Total Patients	Healthy Recovery	Infected Cases	Recurrence
125	112	09	4



DISCUSSION

Pilonidal sinus is a disease that most commonly arises in the hair follicles of the natal cleft. Incidence is reported to be 26 per 100□000 population, affecting males twice as often as females and predominantly young adults of working age.[15,16] Pilonidal sinus usually presents as an acute abscess or a chronic discharging sinus tract. Irrespective of the mode of presentation the painful nature of the condition causes significant morbidity, often with loss of normal daily activities.

Although seemingly a simple condition, the management of chronic pilonidal disease is problematic. Principles of treatment require eradication of the sinus tract, complete wound healing, and prevention of recurrence. The ideal therapy would be a quick cure that allowed patients to resume normal activity early, with low morbidity and a low rate of recurrence.

Definitive treatment of pilonidal sinus is achieved through complete excision of infected sinuses in one block.[18] Despite numerous surgical techniques and publications on management, controversy on the best treatment for this conditions still remains. This is owing to the conviction that there is a direct relationship between closure method and the risk of recurrence. Gluteal pulling forces on the wound and macerated skin in a deep raphe inhibit proper wound healing. The location of the wound after surgery, a closed humid environment and serosanguineous fluid collection are factors that negatively affect the outcome.

Traditional approaches have been to excise the whole sinus and either attempt primary closure (sometimes with large tension sutures) or leave the wound to close by second intention. These operations are successful in many cases, but may result in extensive excisions which are unnecessary and can be associated with recurrence rates as high as 22–41%.[9,10] Better results can be obtained if attention is paid to the causative factors (the cleft and the midline portal of entry) and only minimal tissue is excised.

Randomised trials have now established that excision, with off-midline primary closure and some elevation of the natal cleft, should be standard practice. The entire wound should end up off the midline, especially the lower end, requiring flap formation. Off-midline wounds heal better than deep midline wounds as they are better aerated (there is no longer a deep cleft), easier to keep clean, and more supple (based on fat not bone) and therefore are able to withstand stretching and pressure on sitting.[19]

In our study too, off-midline closure over a drain was adopted. It accelerated wound healing, shortened the times of surgery and hospitals stays, and has proven to be more beneficial in avoiding recurrence. Out of 125 patients, 112 patients recovered smoothly and 9 patients had wound infection that subsequently subsided with adequate wound care and broad spectrum antibiotics. Follow up after 3 months, 6 months and 1 year was done. Only 4 patients had recurrence. Our results with the off midline closure over the drain are therefore comparable with other series that have shown wound complication and recurrence rates of 0–16% and 0-5% respectively.[20,21]

CONCLUSION

Conclusion of our study is that our approach of treatment of pilonidal sinus gave excellent results in terms of treatment and reducing post operative complications and recurrence rate. Hence the longstanding controversy can be resolved by following this technique after excising the sinus allowing early recovery and discharge along with swift resumption of routine work.

REFERENCES

1. Harlak A, Mentes O, Kilic S, Coskun K, Duman K, Yilmaz F. Sacrococcygeal pilonidal disease: analysis of previously proposed risk factors. Clinics 2010;65(2):125–131
2. Doll D, Matevossian E, Wietelmann K, Evers T, Kriner M,Petersen S. Family history of pilonidal sinus predisposes to earlier onset of disease and a 50% long-term recurrence rate.Dis Colon Rectum 2009;52(9):1610–1615
3. Sessler DI. Supplemental oxygen and surgical site infection. Arch Surg 2011;146(10):1221–1222.
4. Can MF, Sevinc MM, Yilmaz M. Comparison of Karydakis flap reconstruction versus primary midline closure in sacrococcygeal pilonidal disease: results of 200 military service members. Surg Today 2009;39(7):580–586
5. Osmanoglu G, Yetisir F. Limberg flap is better for the surgical treatment of pilonidal sinus: results of a 767 patients series with an at least five years follow-up period. Chirurgia (Bucur) 2011;106(4):491–494.
6. Anderson JH, Yip CO, Nagabhushan JS, Connelly SJ. Day Case Karydakis flap for pilonidal sinus. Dis Colon Rectum 2008;51(1):134–138.
7. Jamal A, Shamim M, Hashmi F, Qureshi MI. Open excision with secondary healing versus rhomboid excision with Limberg transposition flap in the management of sacrococcygeal pilonidal disease. J Pak Med Assoc 2009;59:157–60.
8. Mentes O, Bagci M, Bilgin T, Ozgul O, Ozdemir M. Limberg flap procedure for pilonidal sinus disease: results of 353 patients. Langenbecks Arch Surg 2008;393:85–9.

9. Akin M, Gokbayir H, Kilic K, Topgul K, Ozdemir E, Ferahkose Z. Rhomboid excision and Limberg flap for managing pilonidal sinus: long-term results in 411 patients. Colorectal Dis 2008;10:945–8.
10. Ersoy E, Onder Devay A, Aktimur R, Doganay B, Ozdogan M, Gundogdu RH. Comparison of the short-term results after Limberg and Karydakis procedures for pilonidal disease:Randomized prospective analysis of 100 patients. Colorectal Dis 2008;11:705–10.
11. Efthimiadis C, Kosmidis C, Anthimidis G, et al.Barber's hair sinus in a female hairdresser: uncommon manifestation of an occupational disease: a case report. Cases J. 2008 6; 1: 214.
12. Lukish J, Kindelan T, Marmon L, et al. Laser epilation is a safe and effective therapy for teenagers with pilonidal disease. J Pediatr Surg. 2009; 44: 282-285.
13. Oram Y et al (2010) Evaluation of 60 patients with pilonidal sinus treated with laser epilation after surgery. Medical Laser Application; 19, 155-159.
14. McCallum IJ, King PM, Bruce J. Healing by primary closure versus open healing after surgery for pilonidal sinus: systemic review and meta-analysis. BMJ 2008;336:868-71.
15. Petersen S et al (2009) Long-term effects of postoperative razor epilation in pilonidal sinus disease. Diseases of the Colon and Rectum; 52: 1, 131-134.
16. Velasco AL, Dunlap WW (2009) Pilonidal disease and hidradenitis. Surgical Clinics of North America; 89:3, 689-701.
17. Harlek A et al (2010) Sacrococcygeal pilonidal disease: analysis of previously proposed risk factors. Clinics; 65: 2, 125-131.
18. Ghnnam WM, Hafez DM (2011) Laser hair removal as adjunct to surgery for pilonidal sinus: our initial experience.Journal of Cutaneous Aesthetic Surgery; 4, 192-195.
19. Kitchen PRB. Pilonidal sinus: has off midline closure become the gold standard? Aust N Z J Surg 2009;79:4-5
20. Doll D et al (2008) Surgery for asymptomatic pilonidal sinus disease. International Journal Colorectal Disease; 23: 9, 834-844.
21. Al-Khamis A et al (2010) Healing by primary versus secondary intention after surgical treatment for pilonidal sinus. Cochrane Database of Systematic Reviews; 20: 1: CD006213.