ORIGINAL RESEARCH PAPER

Volume-7 | Issue-10 | October-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A PROSPECTIVE STUDY OF SACROCOCCYGEAL PILONIDAL SINUS BY ROTATION AND TRANSPOSITION FLAP, IN G.S. MEDICAL COLLEGE, HAPUR, UTTAR PRADESH, INDIA.

Plastic Surgery

Dr. Mohd. Aslam Khan M.S, M.ch. (Plastic surgeon),Associate Professor, Department of Surgery,G.S Medical College, Pilkhuwa (Hapur), Uttar Pradesh, India.

Dr. Moinuddin Ahmed* M.S, M.ch. (Plastic surgeon),Assistant Consultant- King Fahad Medical City, Riyadh. *Corresponding Author

Dr. Shabir Ahmad dar MBBS, MS. (Gen. Surgery), Assistant Professor, Department of Surgery, G.S Medical College, Pilkhuwa (Hapur), Uttar Pradesh, India.

Dr. Mohammad Zakiuddin Associate Professor, Department of Physiology. IQ City Medical College, Durgapur, West Bengal.

ABSTRACT

BACKGROUND. Pilonidal sinus disease has been treated for a long time with conventional open excision technique. The transposition flap has been pleaded for treatment of this condition.

AIMS AND OBJECTIVE. The aim of this study was to treat sacrococcygeal pilonidal sinus by rotation and transposition flap in terms of incidence of post-operative pain, total hospital stays, total recovery time, complications and recurrence rate.

METHODS AND MATERIALS. Prospective study conducted from September 2016 to July 2017 in a 30 Patients having sacrococcygeal pilonidal sinus, who were admitted in the surgical department of G.S. Medical college and hospital, Hapur, Delhi. All the patients were prepared 2 hours before the surgery. were operated under spinal anaesthesia, in prone position. All the patients were males and fascio cutaneous flap were used. In some cases, rotation flap and in some transposition, flap were used for coverage of defect. Pre-operative prophylactic single shot of antibiotic. Visual analog scale was recorded 8th hourly and the mean value was calculated for each POD1, POD2, POD3.

RESULT All the patients in this study were males. Maximum number of patients (56.66%) were in the age group of 20-35 years and the remaining (43.33%) were in the age group of 36 -50 years. The mean age was 29.34 years. Nearly 43 % of patients were overweight and obese (BMI>25kg/m2) and 32% of patients were with abundant hair. The post-operative pain assessment was done by VAS and the mean was taken on PODS 1,2 and 3. It was found that the mean post-operative pain score was higher on POD 1,2 and 3 but it was statistically significant as regard to mean post-operative pain on POD 2 ($p<0.05$) and 3 ($p<0.01$). There were no recurrences.

CONCLUSION Fascio cutaneous flap have low morbidity, easy to raise and inset in the defect after excision of pilonidal sinus. Both types of flap have low recurrence, equally good and depends on skin laxity.

KEYWORDS

Pilonidal Sinus, Sacrococcygeal, Flap Closure, Secondary Healing.

INTRODUCTION

Sacrococcygeal pilonidal sinus is a chronic disease that mostly affects young adults (1). in the age group 15-30 years, after puberty when sex hormones are known to affect pilosebaceous glands and change healthy body hair growth. The term pilonidal is derived from the Latin word Pilus (hair) and Nidus (nest), coined and described by Hodges in 1880. Its incidence varies from 10 -26 per 100,000 population (2,3). It is diagnosed by the finding of a characteristic epithelial tract (the sinus) located in the natal cleft, a short distance behind the anal verge and generally containing hair (4). Some etiologic factors such as hirsutism, deep natal cleft, obesity, local trauma, familial predisposition, smoking and sedentary life style have been suggested (5, 6). Surgery is the main treatment and up to 40% of the patients develop recurrence. The management of patients with recurrence disease has led to the development of different surgical approaches. There is no agreement on any optimal surgical technique that would minimize the recurrence rate and controversies are still common (7,8). It can be associated with considerable morbidity and have significant socio-economic impact on affected individuals (7). The management of pilonidal disease is variable, contentious and problematic. Principles of treatment require eradication of sinus tract, complete healing and prevention of recurrence (9). The surgical treatments of primary pilonidal sinus include a wide spectrum of techniques that vary from sinus excision with secondary healing of the surgical wound or to the use of flap reconstruction (8). Primary closure is preferred in patients with pathology limited to midline and for whom residual defect after excision is narrow: Karydakis or Bascom procedure can be used. When the residual defect is anticipated to be wide, excision with secondary healing of the wound or flap reconstructions are preferred (9). The management of the patient with recurrent disease may require a more complex surgical approach as the excision may be wider or the initial surgery may have led to the loss of the intergluteal tissue (10, 11). Several techniques such as cryosurgery (4), Z-plasty procedure (12), lancing under local anaesthesia, vacuum assisted closure (13), excision with secondary healing, excision with primary closure (14,15), local flap surgery (16-19) and Bascom procedure (20) have been described by various authors. This study was undertaken to compare the results of excision of sinus followed by dressing the wound regularly versus primary closure of the wound by Z-plasty technique.

MATERIALAND METHODS.

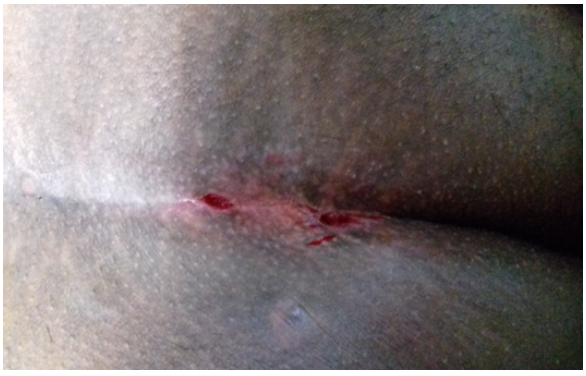
This was a prospective study conducted from September 2016 to July 2017 in a 30 Patients having sacrococcygeal pilonidal sinus, who were admitted in the surgical department of G.S. Medical college and hospital, Hapur, Delhi. All patients were informed about the study and written consent were obtained. Ethical clearance was also obtained from the institutional ethical committee. A proforma was designed which included Demographic data, Signs, Symptoms, Predisposing risk factors, Investigations, diagnosis, Type of operative technique, operative time and complications- early and late.

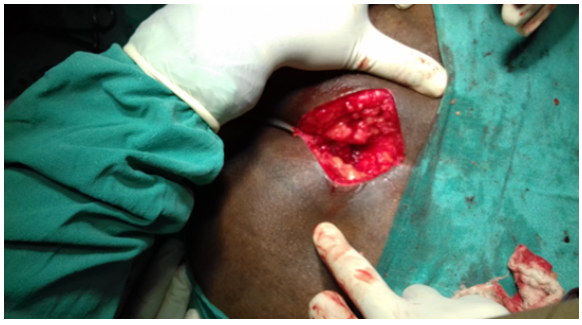
After preliminary investigations, confirmation of diagnosis, and pre-anaesthetic check-up, patient was counselled about the nature of surgery. On the day of surgery, all the patients were prepared 2 hours before the surgery by shaving of natal cleft and back areas, followed by painting with 10% povidine-iodine solution. All the cases were operated under spinal anaesthesia, in prone position. All the patients were males and fascio cutaneous flap were used. In some cases, rotation flap and in some transposition, flap were used for coverage of defect. The visibility of the intergluteal area was maintained by lateral traction from the lateral margin of the gluteus, by use of skin hook for holding flap edges. No use of cautery in flap dissection. The natal area was thoroughly cleaned with 10% povidine iodine. Prior to incision methylene blue was instilled using infant feeding tube in to the sinus opening to map the sinus cavity and its lateral extensions if any and hence the whole sinus and ramifications were fully demarcated. Vertical elliptical / rhomboid incision was made including the affected skin and deepened up to the fascia covering the sacrum to achieve extension of main and secondary sinus tracts. The sinus tract was excised en-block, including the narrow margins of healthy granulation tissue and sinus tracts at the lateral edges. skin flaps were raised and

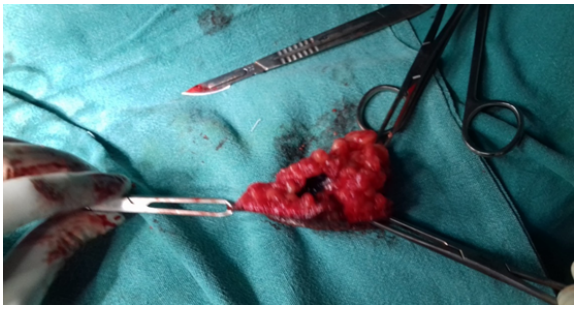
transposed. Angle of the was roughly equal to 45 degree. The wound was closed in two layers after keeping a suction drain (Romo vac drain no.14). The dressing was checked after 48 h, and subsequently on alternate days till the sutures were removed. Suction drain was removed when drain output was < 10 ml/24h. Sutures were removed on 10 th post-operative day (POD). Pre-operative prophylactic single shot of antibiotics in the form of injection ampiclox 500 mg and injection metronidazole 500 mg intra venous were administered to all the cases. The excised specimen was checked for adequacy of the excision. If part of any sinus tract was left behind, the wound was re-explored for further excision.

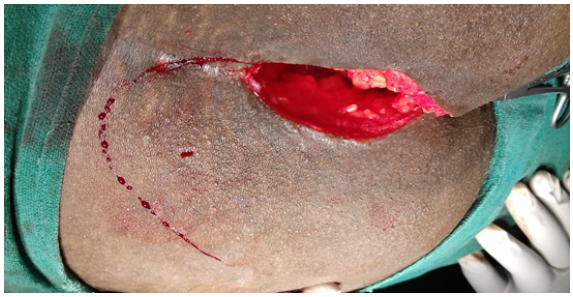
Post- operative measures

Patients were nursed in lateral and prone position in post-operatively for first 48h. All patients were given injection ampiclox 500 mg 6th hourly and injection metronidazole 500 mg 8th hourly for first 3 days followed by oral Ampiclox 500 mg 6th hourly and metronidazole 400 mg 8th hourly for 5 days. Pain was assessed using visual analog scale on POD 1, POD 2, POD3 before analgesic were administered. Visual analog scale was recorded 8th hourly and the mean value was calculated for each POD1, POD2, POD3. In all, patients were started on full diet on the evening of surgery. Time of complete healing was recorded in each case.









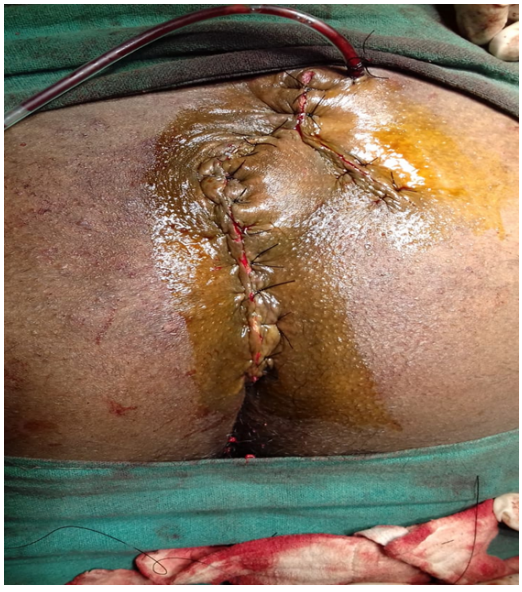


Fig: post-surgical status after closure.

SELECTION CRITERIA

INCLUSION CRITERIA: -

1) Pilonidal sinus in the natal cleft of the sacrococcygeal area.
2) Patients aged 20-50 years.
3) Failure of conventional treatment.
4) Recurrences.

EXCLUSION CRITERIA: -

1. Pilonidal abscess.
2. Patients with diabetes mellitus.
3. HIV positive patients.
4. Patients on chemotherapeutic drugs.
5. Patients on immunosuppressive therapy.
6. Wounds left to heal by secondary intention, patients refused for flap coverage.

STATISTICALANALYSIS

Statistical analysis of the result was performed using SPSS/17. Descriptive statistics were applied to calculate mean. MANN-Whitney test was applied to calculate the z value of visual analogue score. Z-test was used to compare the BMI, the hospital stays, recovery time, early post-operative complications and follow up. p less than 0.05 were considered as significant.

RESULT

All the patients in this study were males. Maximum number of patients (56.66%) were in the age group of 20-35 years and the remaining (43.33%) were in the age group of 36 -50 years. The youngest patient was 18 years of age and the eldest being 43 years. There was a male preponderance noted in 100% of cases. The mean age was 29.34 years. Nearly 43 % of patients were overweight and obese (BMI>25kg/m2) and 32% of patients were with abundant hair. The post-operative pain assessment was done by VAS and the mean was taken on PODS 1,2 and 3. It was found that the mean post-operative pain score was higher on POD 1,2 and 3 but it was statistically significant as regard to mean post-operative pain on POD 2 ($p<0.05$) and 3 ($p<0.01$) -table 1.

TABLE-1: day wise comparison of VAS.

VAS on	Mean ±SD (n=25)	P Value
Day 1	4.11±0.42	>0.05
Day 2	2.62±0.36	<0.05
Day 3	1.63±0.26	<0.001

In our study redness and induration around the wound was noted in 12% of the patients. Discharge from the wound, tip necrosis of the flap and wound dehiscence was noted in 3% of patients. Early post-operative complications were statistically not significant ($p>0.05$). In this study, follow-up of the patients was carried out up to 6 months and there was no recurrence. One patient (0.90%) patient had minimal epidermolysis of flap corners and one had slight gaping of wound

edges. However, both the patients healed completely with conservative treatment. None of the patients had re-admission due to pilonidal disease so far. The mean length of hospital stay was 4.08 (Range:2-8 days) and most patients returned to work within 3 weeks.

DISCUSSION

Pilonidal sinus is characteristically a blind epithelial tract (the sinus). Sacrococcygeal pilonidal sinus has been surgically managed for many years but the ideal surgical technique remains controversial (21). The aim of treatment in pilonidal sinus disease is to render cure of the disease, minimize the chances of recurrence and early return of work (22). In our study 100 % of patients were male and in the age group of 20-45 years. In the present study, total hospital stay was taken as a time of complete healing of wound. This was time elapsed from the end of surgery until complete wound healing and the recurrence was defined as the presence of any persistent purulent or blood-stained discharge from the previously operated or the nearby area during the follow-up.

Girgin et al reported 42 patients who had undergone Crystalized phenol and laser depilation prior to it. According to the authors a combination of crystalized phenol treatment and laser depilation is a minimally invasive method with perfect cosmetic results and low recurrence rates (23). Each of these techniques has been used in the treatment of the primary pilonidal disease, but in the management of recurrence flap reconstruction or secondary wound healing techniques after sinus excision is preferred (24).

CONCLUSION

Fascio cutaneous flap have low morbidity, easy to raise and inset in the defect after excision of pilonidal sinus. Both types of flap have low recurrence, equally good and depends on skin laxity.

REFERENCES

1. Spivak H, Brooks VL, et al, Treatment of chronic pilonidal disease. Dis Colon Rectum1996; 39 (10):1136-1139.
2. Sondenaa K, Nesvik I, et al, Patient characteristics and symptoms in chronic pilonidal sinus disease. Int J Colorectal Dis 1995; 10 (1):39-42.
3. McCallum IJD, King PM, Bruce J. Healing by primary closure versus open healing after surgery for pilonidal sinus: systemic review and meta- analysis. BMJ 2008;336 (7649):868-871.
4. Gage AA, Dutta P, Cryosurgery for pilonidal disease. Am J Surg 1977; 133:249-54.
5. Sondenaa K, Anderson E, Soreide JA, Morbidity and short-term results in a randomised control trial of open compared to closed treatment of chronic pilonidal sinus. Eur J surg. 1992; 158 (6-7):351-355.
6. Doll D, mtevossian E, Wietelmann K, Evers T et al, 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.
7. Allen-mersh G. pilonidal sinus: finding the right track for treatment. Br J Surg 1990; 77 (2):123-132.
8. Muller K, Marti L, et all. Prospective analysis of cosmesis, morbidity and patient satisfaction following Limberg flap for the treatment of sacrococcygeal pilonidal sinus. Dis Colon Rectum 2011; 54(4):487-494.
9. McCallum IJD, 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.
10. Trent JT, Krisner RS, Wounds and malignancy, Adv Skin Wound Care2003; 16(1):31-34.
11. Solla JA, Rothenberger DA. Chronic pilonidal disease: an assessment of 150 cases. Dis Colon Rectum 1990; 33 (9):758-761.
12. Toubanakis G. Treatment of pilonidal sinus disease with the Z-plasty procedure(modified). Am Surg 1986; 52:611-2.
13. McGuinness JG, Winter DC, O'Connell PR. Vacuum-assisted closure of a complex pilonidal sinus. Dis Colon Rectum 2003; 46:274-6.
14. Obeid SA. A new technique for treatment of pilonidal sinus. Dis Colon Rectum 1988; 31:879-85.
15. Tritapepe R, Di Padova C. Excision and primary closure of pilonidal sinus using a drain for antiseptic wound flushing. Am J Surg 2002; 183:209-11.
16. Topgul K, Ozdemir E, et al. Long-term results of Limberg flap procedure for treatment of pilonidal sinus: A report of 200 cases. Dis Colon Rectum2003; 46:1545-8.
17. Bozkurt MK, tezel E. Management of pilonidal sinus with the Limberg flap. Dis Colon Rectum 1998; 41:775-7.
18. Mosquera DA, Quayle JB. Bascom's operation for pilonidal sinus. J R Soc Med 1995; 88:45-46.
19. Eryilmaz R, sahin M, Alimoglu O, et al. Surgical treatment of sacrococcygeal pilonidal sinus with the Limberg transposition flap. Surgery 2003; 134:745-9.
20. Senapati A, Cripps NP, Thompson MR, Bascom's operation in the day-surgical management of symptomatic pilonidal sinus. Br J Surg 2000; 87:1067-70
21. Muzi MG, Milito G, et al. Randomized comparison of Limberg flap versus modified primary closure for the treatment of pilonidal disease. Am J Surg 2010; 200:9-14.
22. Akca T, ColakT, et al. Randomized clinical trial comparing primary closure with the Limberg flap in the treatment of primary sacrococcygeal pilonidal disease. Br J Surg 2005; 92:1081-4.
23. Girgin M, Kanat BH, Ayten R, et al. Minimally invasive treatment of pilonidal disease: crystalized phenol and laser depilation. Int Surg 2012; 97 (4):288-292.
24. Lieto E, Castellano P, Pinto M, et al. Dufourmentel rhomboid flap in the radical treatment of primary and recurrent sacrococcygeal pilonidal disease. Dis Colon Rectum 2010; 53 (7): 1061-1068.