OUTCOME OF THE LIMBERG'S FLAP TECHNIQUE IN THE TREATMENT OF PILONIDAL SINUS

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ABSTRACT

Background: Pilonidal sinus disease is a common condition often seen in young adults, affecting male twice then the female. Many surgical and non- surgical treatment modalities have been suggested. **Objective**: To evaluate the results of rhomboid excision and Limberg flap reconstruction in the treatment of pilonidal sinus disease. **Methodology:** This cross-sectional study was carried out at Surgical Department Unit-II Sheikh Zayed Medical College and Hospital, Rahim Yar khan. The study was conducted from 1ST June 2014 to 31ST January 2016. A total of 34 patients were included in this study. Patients having primary pilonidal sinus disease underwent this operation. Data analysis was carried out by using SPSS Version16 software. **Results:** 34 patients has undergone this surgery. All study subjects were males. The mean age was 26 years (Range: 18–36 years). No patient presented with recurrent pilonidal sinus. The mean operative time was 55 minutes and ranged from 45 to 65 minutes. Hospital stay ranged from 3 to 4 days. Two (5.88%) patients has minimal epidermolysis of flap corners. Two (5.88%) has slight gaping of wound edges. However all four healed completely with conservative treatment. One patient has persistent discharge which took 3 weeks to settle down. 100% success rates with no recurrence was achieved. **Conclusion:** Limberg flap technique is very effective for pilonidal sinus disease with low complication and excellent success rates.

Key Words: Pilonidal sinus, Limberg flap technique, Rhombus shaped.

INTRODUCTION

Pilonidal sinus disease is one of the common condition often seen mainly adults in young adults.[1,2] It is a cleavage between the buttocks, and diagnosis is made by presence of epithelialized follicle opening. Many factors play role in for the for the causing of pilonidal sinus disease e.g. implantation of loose hairs into the depth of natal cleft, increased sweating with prolong sitting and friction, obesity, local trauma, poor personal hygiene, and narrow natal cleft.[3,4,5,6] The debate regarding the best treatment of pilonidal disease is continuing because the outcome management of pilonidal sinus disease is unsatisfactory. Surgical procedures include laying the track open, wide excision with open wound, excision with primary midline or asymmetric closure and techniques involving various flaps procedures. All the surgical procedures have their advantages and disadvantages.[7] Limberg described a new technique for closing a 60^0Rhombus shaped defect with transposition flap.[1] This study was conducted to evaluate the results of rhomboid excision and Limberg flap reconstruction in the treatment of pilonidal sinus disease.

METHODOLOGY

This cross-sectional study was carried out at Surgical Department Unit-II, Sheikh Zayed Medical College and Hospital Rahim Yar khan. The study was conducted from 1ST June 2014 to 31ST January 2016. A total number of 34 patients were included in this study. Patients having primary pilonidal sinus disease underwent this procedure. Patients who has pilonidal abscess has got incision and drainage first before the definite treatment. These patients were advised to return to normal activities after removal of stitches, after about 14 days, but to avoid excessive physical strain and strenuous sports for following 3 to 4 weeks. Follow up of all patients was performed on outpatient basis, every month for up to six months. The protocol of this study has been approved by the Institution Review Board of the hospital. All patients informed verbal consent to participate in this study. Data analysis was carried out using SPSS Version 16.

Procedure: The patient was operated in prone position, and with spinal anesthesia with buttocks strapped apart. A rhombic area of skin as marked (Figure I a) over pilonidal sinus involving all midline pits and lateral extension if needed. The skin and subcutaneous fat was removed is excised down to deep fascia, and a rhomboid area of specimen including pilonidal sinus and its all extensions are

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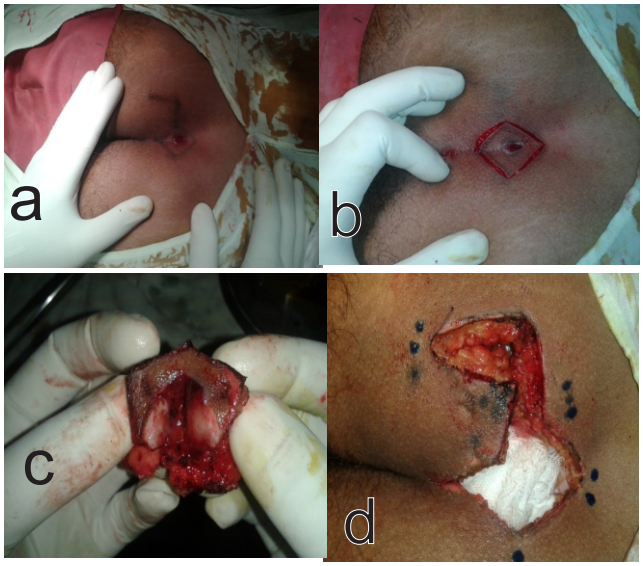
removed (Figure I b,c). Then flap is raised so that it includes skin, subcutaneous fat, and the fascia overlying gluteus maximus. Then dots were are marked as shown in (Figure I d). Flap was rotated to cover midline rhomboid defect. Deep absorbable sutures with vicryl No.1 to include fascia and fat were placed over a vacuum suction drain, and then finally the skin and subcutaneous fat closed with interrupted Prolene No.1 suture. The operation produced a tension-free flap of unscarred skin in the midline. Antibiotics were given for 7 days initially intravenously, then orally, suction drain was removed after 2 to 3 days, sutures were removed around 14th day. Outcome variable included: Total healing, recurrence, operate time and hospital stay.

RESULTS

In this study, 34 patients were included, all were male. The mean age was 26 years (Range: 18–36 years). No patient presented with recurrent pilonidal sinus. The average operative time was 55 minutes and ranged from 45 to 65 minutes. Hospital stay ranged from 3 to 4 days. Two (5.88%) patients has minimal epidermolysis of flap corners. Two (5.88%) patients has slight gaping of wound edges. However all four healed completely with conservative treatment.

Figure I: Limberg's Flap techenique



One patient has persistent discharge which took 3 weeks to settle down. In all patients wound healed nicely with minimal scarring, with very less postoperative pain and no recurrence so far. None needed readmission due to pilonidal sinus operation or its complication and most patients returned to work after 3 weeks.

DISCUSSION

Pilonidal sinus is acquired a blind epithelial tract present in the skin of the natal cleft, behind the anus and usually containing hair,[8] affecting mostly young adults.[1] The goals of the ideal procedure should be off course good wound healing, low risk of recurrence, and a short period of hospitalization,[9,10] Multiple surgical procedures have been published for treatment of this disease which itself reflects the need for a safe and efficient surgical method. The main problem associated is recurrence of the disease which is quite high with various procedures,[1] Flap techniques have been associated.

Advantages of Limberg flap reconstruction included the flatting of the natal cleft with a large and well vascularised pedicle that can be suture without tension, midline dead space and scar is avoided.[1]

In this study, 34 patients with sacrococcygeal pilonidal sinus disease were managed with rhomboid excision and Limberg flap reconstruction. 100% success rate was noted with no recurrence. Two (5.88%) patients has minimal epidermolysis of flap corners and two (5.88%) patients has slight gaping of wound edges which may be due to the design of the long flap or faulty technique mostly in our initial patients. However, all four healed completely with conservative treatment.

One patient has persistent discharge which took 3 weeks to settle down with dressings. In all of our patients wound healed nicely with minimal scarring, with very less postoperative pain and no recurrence. Several studies reported similar results that are comparable to our results in terms of complications, operation time and hospital stay and recurrence rates.[11-15]

Several series reported recently about the usefulness of this flap technique in the treatment for sarcococcygeal pilonidal sinus. Katsoulis had 25 patients; with 16 of them having complications with no recurrences.[11] Aslam et al has 110 patients, with 5 of them having complications and 1 recurrence.[6]

CONCLUSION

Limberg flap is very effective for pilonidal sinus disease with low complication rates, short hospital stay, and low recurrence rates. This technique is easy to master and may be recommended as an effective surgical treatment for pilonidal Sinus.

Conflict of interest

The authors have declared no conflict of interest.

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