International Journal of Medical and Health Research
ISSN: 2454-9142; Impact Factor: RJIF 5.54
Received: 11-01-2020; Accepted: 12-02-2020, published 07-03-2020
www.medicalsciencejournal.com
Volume 6; Issue 3; 2020; Page No. 32-34

Limberg's flap for sacrococcygeal pilonidal sinus, results and complications of surgery

Dr. Raza Farooqui[1], Dr. Mukesh Saini[2*]
[1] Associate Professor, Department of Plastic Surgery, Muzzafarnagar Medical College, Muzzafarnagar, Uttar Pradesh, India
[2] Postgraduate, Department of General Surgery, Muzzafarnagar Medical College, Muzzafarnagar, Uttar Pradesh, India

Abstract
Introduction: Pilonidal sinus disease is a common condition usually seen in young adults. Aetiology is uncertain but relates to the implantation of loose hair into the depth of natal crease. This study was carried out to evaluate advantages, result of rhomboid excision and limberg's flap reconstruction in the management of pilonidal sinus disease.
Material and Methods: This prospective study was conducted in surgical unit from 2018 July- 2019 September. It includes 50 patients who were treated for pilonidal sinus disease by limberg's flap.
Results: All patients tolerated the procedure well with minimal postoperative discomfort and were discharged in 2-3 days. There was only one recurrence seen in series.
Conclusion: Limberg's flap is very effective for pilonidal disease with low complication rates, short hospitalisation, low recurrence rates and earlier healing.

Keywords: limberg's flap, reconstruction, pilonidal sinus disease

Introduction

Chronic pilonidal sinus is a common disease of hirsute men usually found in midline of sacrococcygeal region results in high morbidity and patient discomfort. The word pilonidal is taken from Latin meaning "nest of hairs." Incidence is reportedly 26 per 100000 population, affecting males twice as often as females and predominantly young adults of working age [1]. It generally presents as a abscess, cyst or sinus tracts with or without discharge [2]. The aetiology of pilonidal sinus is a matter of controversy.

Initially congenital origin was suggested that it was secondary to a remnant of an epithelial lined tract from post coccygeal cell rests or vestigial scent cells. Now the view is widely shifted toward acquired theory [3] and is based on the observations that congenital tract do not contain hair are lined by cuboidal epithelium. Deep natal cleft also provide favourable environment for sweating, bacterial contamination, maceration. Other factors are obesity, family history, irritation or local trauma, sedentary life style, excessive hairiness. This is due to penetration of shed hair shafts through skin and leads to an acute or chronically infected site and that's can be treated effectively by appropriate surgery [4]. Clipping of hairs with good hygiene of the area, wide excision of the area as management are not widely accepted [5]. Excision and primary closure, excision and packing, flap techniques and marsupialization are the procedures that have been suggested for the treatment [6]. After using various defined conservative and surgical techniques, recurrence rates remain high [7]. Reason for recurrence such as leaving behind some tract, midline suture causing minor trauma with repeated infection accumulation of perspiration and friction with tendency of the hair getting incorporated into the wound [8].

Among different procedures, flap reconstruction techniques eradicate the aetiology of the disease as it flattens the inter gluteal sulcus with much less hairy fasciocutaneous flaps and less perspiration [9]. Rhomboid excision with Limberg flap is most commonly used and is reported as one of the best treatment methods, with 0-16% of surgical area related complication and recurrence rate of 0-5% [10]. This article evaluates the use of Limberg flap after excision of sacrococcygeal pilonidal sinus by rhomboid excision.

Material and Methods

This study involves 50 patients, from July 2018 to May 2019. 38 male patients and remaining were females with average age 24 years and mean duration of symptoms was 3 years.

Preoperative evaluation

- Personal information such as age and gender for post-operative follow up period.
- History of presenting complaints including onset of symptoms, course of disease and duration of symptoms.
- Routine clinical, local examination and laboratory investigations.
- Informed consent was obtained from all patients after explanation of procedure and expected results of flap in area.

Procedure of Surgery

The natal cleft was shaved the day before surgery. Ceftriaxone injection was administered intravenously prophylactically before placing incision after sensitivity testing intra-dermal. All patients were operated under spinal anaesthesia. Patients were put in prone position and buttocks strapped apart by adhesive tapes.

Fig 1

Using a sterile skin marking pen a rhombic area of skin is marked over pilonidal sinus involving all the midline pits and lateral extension if any. The flap design was mapped on the skin (figure 1). Long axis of rhomboid in midline was marked as A-C, C beingadjacent to perianal skin, a placed so that affected tissue can be included in the excision. The line B-D transected the midpoint of A-C at the right angles and is 60% of its length. D-E was a direct continuation of the line B-D and was of equal length to the incision B-A, to which it was sutured after rotation E-F was parallel to D-C and of equal length. After rotation, it was sutured to A-D (fig. 1 and 2) [11]. The skin and subcut fat to be removed is excised down to deep fascia and a rhomboid area of specimen including pilonidal sinus and its all extension are removed (fig.3). Then flap is raised so that it includes skin, subcut fat and fascia overlying gluteal maximus, rotated to cover midline rhomboid defect (fig.4). The defect thus then created can be closed in linear fashion (fig.5). Deep absorbable sutures to include fascia and fat are placed over a vacuum drain, and then finally the skin is closed in interrupted sutures[12]. Flap of unscarred skin in midline (fig6).

Post-operative care

- IV antibiotics were given for 7 days, then orally, suction drain removed accordingly, sutures removed around 10th day.

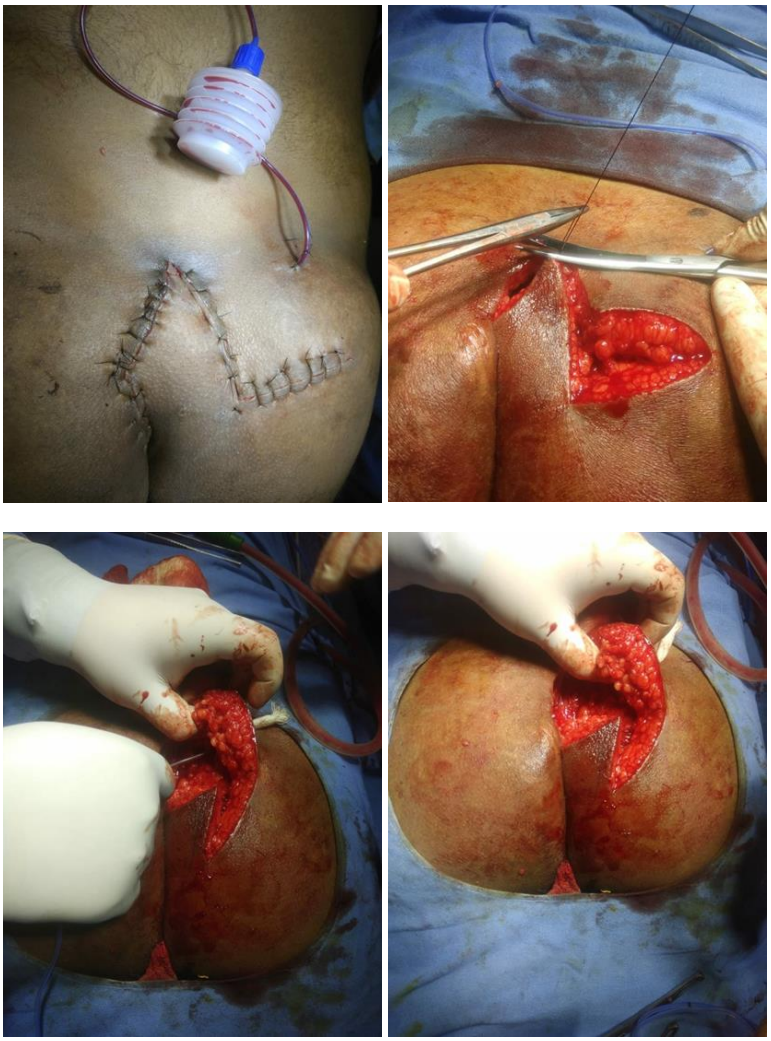

Fig 2

Patient was advised not to put pressure on flap for 3 weaks.

- Follow up
- All the patients were evaluated for healing, seroma formation, oedema, flap necrosis, surgical site infection, pain and length of hospital stay.

Results

Total 50 patients were followed at 2 weak, 1 month and 6 month. Only 1 (2%) developed complication as wound infection. Pain score range was 2-8 with mean score of 4.5. Average length of stay in hospital was 5 days (range 2-14). Other patients wound healed with no minimal scarring and no

recurrence till now.

Discussion

Sacrococcygeal pilonidal sinus is blind epithelial tract situated in skin of natal cleft, close to anal verge, generally containing hair. Cause of formation of sinus include sweating in the area, hirsuitism, repeated maceration due to repeated minor trauma, leading to breakage of skin barrier, attracting hair inside which initiates a foreign body reaction leading to infection with abscess or sinus formation. Ideal treatment should ensure low pain, short hospitalisation period, low risk of complication, rapid return to normal activities and low recurrence rate.

Limberg flap reconstruction achieves an off-midline closure and ensures flattening of natal cleft. Flap recontruction having midline edge or suture line on intergluteal sulcus are more likely to increase recurrence rates, wound dehiscence and wound infection risk. Reconstruction of defect with limberg flap has many advantages as it is easy to perform and design, and it flattens the natal cleft with large vascularised pedicle, sutured without tension. This in turn maintains good hygiene, reducing the friction, preventing maceration and avoid scar in midline. This flap procedure is found better than simple excision and closure, marsupialization and other flap procedures.

Conclusion

Limberg flap for reconstruction of defect after excision of recurrent pilonidal sinus is reliable and effective technique, easily performed, subjectively high patient satisfaction, associated with completed cure and low incidence of post-operative complication.

References

1. McCallum IJ, King PM, Bruce J. Healing by primary closure versus open healing after surgery for pilonidal sinus: systematic review and meta-analysis. BMJ. 2008; 336:868-871.
2. Hull TL, Wu J. Pilonidal disease. Surg Clin North Am. 2002; 82:1169-85.
3. Brearley R. Pilonidal disease: origin from follicles of hairs and results of follicle removal as treatment. Surgery. 1955; 87:567-572.
4. Surrell JA. Pilonidal disease. Surg Clin North Am. 1994; 74:1309-15.
5. Chiedozi LC, ALRayyes FA, Salem MM, AL Haddi FH, Al-Bidwei AA. Management of pilolinidal sinus. Saudi Med J. 2002; 23:786-788.
6. Mohamed HA, Kadry I, Adly S. Comparison between three modalities for non- complicated pilonidal disease. Surgeon. 2005; (2):73-77.
7. Urhan MK, Kucukel F, Topgul K, Ozer I, Sari S. Rhoboid excision and Limberg flap for managing pilonidal sinus: results of 102 cases. Dis Colon Rectum. 2002; 45(5):656-9.
8. Casetecker J, Mann BD, Castellanes AF, Strauss J. Pilonidal disease, 2011. Http://emedicine.medscape.com/article192668. Accessed 11 dec 2011.
9. Khatri VP, Espinosa MH, Amin AK. Management of recurrent pilonidal sinus by simple V-Y fasciocutaneous flap. Dis Colon Rectum. 1994; 37:1232e-5.
10. Topgul K. Surgical treatment of sacrococcygeal pilonidal sinus with rhomboid flap. J Eur Acad Dermatol Venereol. 2010; 24:7e-12.
11. Farquharson EL, Rintoul RF. Farquharson's Textbook of operative general surgery, 9th edn. Hodder Arnold Publication, London, 2005, 457-458.
12. Kapan M, Kapan S, Pekmezci S, Dugun V. Sacrococcygeal pilonidal sinus disease with Limberg flap repair. Tech Coloproctol. 2002; 190:388-392.