



Research Article

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Lateral advancement fasciocutaneous flap for pilonidal sinus- A case series

Gulshan Kumar Garg¹, Sham Lal Singla², Sunder Goyal²

¹ Assistant Professor, Department of Surgery, Kalpana Chawla Govt. Medical College, Karnal- 132001, Haryana, India

² Professor, Department of Surgery, Kalpana Chawla Govt. Medical College, Karnal- 132001, Haryana, India

Abstract

Pilonidal sinus is acquired condition which occurs mostly in young men having high preoperative and postoperative morbidity. Most important surgical techniques for treatment is rhomboid flaps. Other mentioned surgical methods are midline incision with primary closure, oblique or asymmetrical incision with primary closure with high incidence of recurrence. Less commonly used techniques are full thickness skin grafts, phenol application, cryotherapy and laser excision etc. Management of pilonidal sinus is still controversial as all methods are having varying degree of complications. A retrospective study of 42 patients was carried out to study the benefits of lateral advancement of fasciocutaneous flap with excision of pilonidal sinuses. The result showed that this very convenient and effective treatment which leads to early recovery, good cosmetic result, with minimum complications and recurrence.

Keywords: Genotyping, Human papillomavirus, GRH Panzi, South Kivu.

INTRODUCTION

Pilonidal sinus is a common disease that occurs mostly in young men. It is defined as chronic inflammation and infection of the postsacral sinuses [1-3]. These pilonidal sinuses are produced by constant pressure and friction which lead to matting and lodging of broken body hair in natal cleft. In the course of time, excoriation occurs due to the surface softened by continuous perspiration. Broken hairs penetrate the integument and finally provoke inflammation and suppuration [4,5].

Various techniques are used for treatment of pilonidal sinus in natal cleft. Most common is rhomboid flaps or Limberg flaps with minimum recurrence. Other methods for treatment of pilonidal sinus are V-Y plasty, Z-plasty, gluteus maximus myocutaneous flaps, and adipofascial flaps [6]. Less preferred surgical techniques with high rate of recurrence are full-thickness skin grafts [7], shaving, incision and drainage [8], phenol application, cryotherapy, laser excision [9], and marsupialization [10]. Proper excision of the sinus with debridement of the surrounding inflamed tissues should be carried out deep to the sacrococcygeal fascia to prevent recurrences.

Discomfort and pain are common symptoms after debridement without skin closure and marsupialization. This procedure require repeated change of dressing which results in delayed healing [10]. Excision of pilonidal sinus and primary midline closure has high rates of recurrence and infection and longer hospitalization [11,12].

The Limberg flap, Dufourmentel flap, V-Y plasty, and Z-plasty are full thickness flaps based on the aim to flatten the natal cleft [13]. No doubt, covering with flaps after total excision offers good results still infection and recurrence are still observed due to excessive sweating and possible positional pressure over this area during sleeping. In these postoperative patients; infections, poor wound healing, and recurrences occur mostly on the median-caudal line because of proximity to the anal region [14].

High rates of recurrence up to 5 to 50 % is reported despite the immense diversity of surgical procedures and none appears to be the perfect surgical technique which can prevent infection, recurrence, and post-operative irregularities and pits [15,16].

We present the results of the lateral advancement full thickness fasciocutaneous flap for closure of the defects following radical excision and debridement of the inflamed tissues carried out on forty-two cases of pilonidal sinus disease.

METHODOLOGY

A prospective study of Forty-two patients with chronic sacrococcygeal pilonidal sinus was carried out.

*Corresponding author:

Dr. Gulshan Kumar Garg

Assistant Professor, Department of Surgery, Kalpana Chawla Govt. Medical College, Karnal-132001, Haryana, India

Email: ggkgarg@gmail.com

All primary as well as recurrent cases are included. Chief complaints of patients include pus discharge, pain, swelling and itching. Local examination of all patients was carried out for site of sinus, number of sinuses and external opening, discharge from sinus, type of hairs and local hygiene status.

Lateral advancement fasio-cutaneous flap were used for closure of the defects due to the excised sinuses. Thirty-eight patients were males and four patients were females and most of patients were between 19-35 years age group. All patients were operated on during the non-infected period of the disease (control of infection). The patients were observed and result are evaluated with regards to duration of surgery, blood loss, postoperative complications as wound infection and wound disruption, postoperative stay in hospital, duration and negative suction drain output per day of negative, suture removal time and rate of recurrence.

Surgical technique

Shaving of area was done in preoperative preparation along with bathing in morning and prophylactic I.V. antibiotic at the time of induction of anaesthesia. After inducing with spinal anaesthesia, the patient was put in jack knife position and buttocks were widened apart using adhesive tape. The dimensions, numbers and direction of the sinuses were defined with the injection of methylene blue [Fig-1]. A rectangular excision was marked with a marker. A rectangular excision containing the diseased tissue was performed including all sinuses along with surrounding indurated tissue till the presacral fascia. Size of the flap was kept about double of the defect to be closed. The flap contained skin, adipose tissue with its underlying fascia but muscle was not included [Fig-2]. The flap raised was of uniform thickness from apex to base. Homeostasis was achieved using cautery and thorough wound washing was done using normal saline. Edges of rectangular incision were excised for good cosmetic results. Undersurface of the flap was fixed to post sacral fascia with Vicryl 2.0 suture to avoid tension on flap and to obliterate the dead space [Fig-3]. Closed suction drain was placed via a separate stab and skin closure was done with prolene suture [Fig-4]. Postoperative management included intravenous fluids and low residue diet for 3 days to avoid early defecation. Daily drain output and duration of drain were noted. Drain was removed when drain output was less than 10 ml per day. Patient was advised to rest in supine position so that compression could help in flap adherence. Compression bandage was done. Follow up was done on 4 week, 3 months and 6 months duration. Parameter studied were duration of postoperative stay, duration of drain and output of drain, postoperative complications includes wound infection, wound disruption, flap necrosis, flap disruption and recurrence.

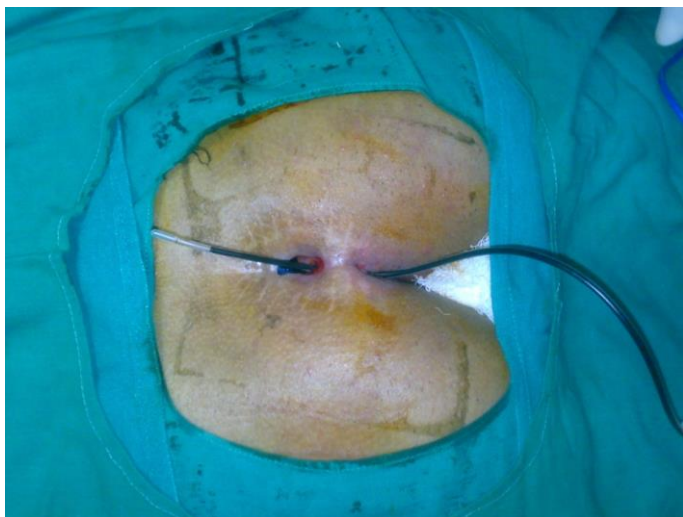


Fig 1: Showing Patient in position with dye

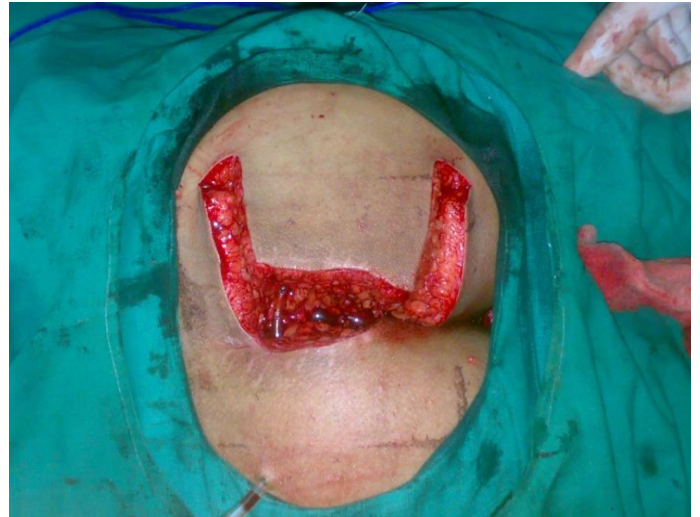


Fig 2: Creation of flap



Fig 3: After closure of wound



Fig 4: Wound with Negative suction drain in-situ

RESULTS

In our study lateral advancement fasciocutaneous flap was performed in forty-two cases. In these majority of cases are primary cases. The disease was more prevalent in young adult male having poor hygiene and hairy person. Out of these forty-two patients, thirty-eight were males and four were females. Most of them were between 19 to 35

years age group and mean age was 25.4. 32 patients were presented with chief complaints of discharging sinus, 7 with swelling and itching, 3 had only discomfort on sitting.

The average duration of surgery was 46 minutes ranging from 36-62 minutes. Patients had multiple tracts, complicated sinus with inflammation required longer operative time. The mean hospital stay was 7.2 days (6-16 days). The average duration of drain was 6.5 days (6-12 days). The average duration of return of daily activities was 12.2 days (10-14 days). Out of forty-two patients, 31 did not have any complications while 11 patients had one or more complication in the postoperative period. At the time of first dressing change; four patients have serous discharge. Six patients had small area of flap necrosis at edges. Three patients had wound infection at lower side near peri-anal area. Wound dehiscence was noted in 2 patients who had previously serous discharge on first dressing.

Total number of patients :42

Average hospital stay 7.2 days

Average duration of drain 6.5 days

Complication:

- Serous discharge 4 (9.5%)
- Seroma formation 1 (2.3%)
- Flap necrosis at edges 6 (14.3%)
- Flap dehiscence 1 (2.3%)
- Wound infection 2 (4.6%)

During follow up period two patients developed numbness in the surrounding area and two patients had hypertrophy of the scar.

DISCUSSION

There is Surgical dilemma in regard of the treatment of pilonidal sinus since the disease was first defined by Hebert Mayo in 1883 [17]. Various surgical procedure have been tried to treat pilonidal sinus. List of various surgical techniques is i) Incision and drainage, wide excision with primary or secondary closure, ii) marsupialization, iii) incision and curettage, iv) split-thickness skin grafts after excision, v) Z-plasty, vi) electrocoagulation, vii) sclerotherapy, and viii) even radiotherapy have been used with variable results and recurrence incidences [18,19].

In 1970, Foss analyzed 1229 cases of pilonidal sinus disease which were operated on by different surgeons who used excision and primary closure to manage pilonidal sinus patients [20]. There was a defective primary healing in 16% cases with high (16%) recurrence rate. The mean hospitalization period was 21.7 days in these cases which was also high. In young patients, open wound healing adds pain, discomfort and limitation of activity thus results in higher treatment cost and a national loss.

Weinstein *et al.* [21] analyzed 129 pilonidal cases treated by excision of sinus and secondary healing with granulation tissue and reported 20.9% as percent recurrence rate along with a mean healing time of 2 months which was quiet high.

Marsupialization was first defined by Buie in 1937 [22]. Solla and Rothenberger reported an 8 % recurrence rate with marsupialization surgery of pilonidal sinus [23]. Some authors have reported lower rates of recurrence along with prolonged healing period [24].

Primary closure after excision was compared with the excision-only technique in a controlled study. No doubt healing was faster with primary closure, but complication rates were reported to be higher as compared with excision and secondary healing [25].

Displacement of the incision line to the lateral side of the gluteal fold to prevent recurrence was done by McDermott in 1967 [13]. Karydakis, Bascom, and some other authors defined techniques for

oblique or asymmetrical closure procedures to reduce recurrence [26]. Petersen *et al.* claimed that oblique or asymmetrical closure techniques and flaps yielded better results compared with midline repairs but also reported that asymmetrical techniques or plasty procedures are also associated with recurrence [1].

We performed the lateral advancement full thickness fasciocutaneous flap for closure of the defects following radical excision and debridement of the inflamed tissues.

The mean age of presentation in our study was 25.4 which is comparable to studies available in literature [27,28]. Pilonidal sinus is rare below 15 years, incidence increase sharply between 20-35 years then again decrease after 35years as in our study. Male population are affected more as compared to female. Sex ratio in our study is 8.8:1 which is comparable with other studies [28,29]. Most of the patients (about 75%) presents with discharging sinus. The disease has been mainly present in patients having hairy skin and common in people with sedentary habits and with belonged sitting occupation.

The average duration of surgery was 46 minute which is little more as compared to other studies like Karyodakis and Bascom [27,30]. More time was spent on raising a flap and fixing lower part carefully to avoid gaping and wound dehiscence which was mainly note in that part. Average hospital stay of the patients was 7.2 days as negative suction drain was strictly kept for 4-5 days for low complication rate. All patients were advised to avoid squatting, brisk walking and prolonged sitting etc. in immediate post operative period.

Main complication in our study was minimum serous discharge from wounds along with minimal flap necrosis. 11 patient out of 42 had one or more complication in about 26.2% comparable with others [29,30]. Other studies did not included serous discharge and minimal flap necrosis in their studies. If we exclude this from our study then our complication rate was only 7.2% (3 patients out of 42 patients) that is comparable with other studies of ankinei (7.1%) and Karydakis (8.5%) [29].

We have noted that flap necrosis at lower edge near perianal region was more. So, during surgery in subsequent cases, thickness of flap at lower edge was kept slight thicker. After that flap necrosis decrease sharply. The wound healing time was 12.2 days. Other studies also show wound healing and return to work within 2 weeks which was little less as compared to other studies. Recurrence rate was Nil in our was study.

CONCLUSION

Lateral advancement of fasciocutaneous flap for pilonidal sinus with enblock excision up to postsacral fascia and then closing the flap leads to good wound healing. It leads to early return to work, good cosmesis, less complication with minimum recurrence. It is a good method for recurrent cases. It is one of the good methods of treatment for pilonidal sinus disease.

Conflict of interest

There is no conflict of interest.

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