



## RESEARCH ARTICLE

## Comparative study of Primary closure versus Open technique after Excision of Sacrococcygeal Pilonidal sinus.

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### Abstract

#### Aims & objectives:

To study and compare the efficacy of the primary closure and open technique after excision of sacrococcygeal pilonidal sinus.

#### Methods & Materials:

A comparative study was designed and 61 patients with sacrococcygeal pilonidal sinus were included in this study. This study took place in Owaisi hospital and research centre for a period of three years. The patients were separated into two groups. Group A (31 patients) were treated by open method (excision & healing by secondary intention) and group B (30 patients) for whom primary closure (by different types of closure techniques aiming at lateralization of natal cleft) done after excision of pilonidal sinus. The follow-up ranged from 4 months to 1.5 years with mean follow up of 11 months was throughout patient visits.

#### Results:

Out of 31 patients in group A 20 were males and 11 were females, in group B 22 were males and 8 were females. Group A patients with mean age of  $24 \pm 7$  years and group B with mean age of  $25 \pm 8$  years. In group A 9 patients presented with complications and all were wound infections, in group A 5 patients presented with complications 3 with wound dehiscence and 2 with wound infection. Recurrence was seen in only one patient in group B and in none in group A.

#### Conclusion:

Excision and primary closure of sacrococcygeal pilonidal sinus aiming at lateralization of natal cleft is superior to excision and healing by secondary intention.

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## INTRODUCTION

Pilonidal disease is a inflammation and infection of the sacrococcygeal region predominantly affecting young males in 2<sup>nd</sup> decade of life. Its incidence is reported as 26 per 100000 population.<sup>(1)</sup> It is now defined as an acquired condition usually presenting as an abscess or as a painful sinus track on the natal cleft with seropurulent discharge.<sup>(2,3)</sup>

Although several techniques have been derived for management of sacrococcygeal pilonidal sinus varying from the traditional excision of the sinus leaving wound open to heal by secondary intention to the various primary closure techniques aiming at flattening and lateralizing of natal cleft to avoid recurrence.<sup>(4,5)</sup> To know the effectiveness, short term and long term results of treatment of pilonidal sinus with different modalities we performed a comparative study.

## Materials and methods:

### Patients:

All patients requiring surgical treatment for pilonidal disease in our hospital between June 2010-June 2013 were selected for this study (n=61). Both patients with chronic disease and patients suffering from pilonidal abscess were included. The patients were grouped into two groups. Group A (31 patients) were treated by open method (excision & healing by secondary intention) and group B (30 patients) for whom primary closure (by different types of closure techniques aiming at lateralization of natal cleft) done after excision of pilonidal sinus intervened by different operators. The primary outcome was wound healing. Other outcomes were procedure duration, complications and recurrence rates.

### Procedure:

In both cases of pilonidal disease presented at our institution, the attending surgeon was free to use any procedure he deemed indicated after selection of the treatment modality they were included in to two groups. Both groups were prepared for surgeries by administration of cefotaxime 1gm half-an hour before surgery intravenously. All patients were operated under regional anesthesia. Open method patients placed in prone position and primary closure patients in lateral position. Methylene blue injected into the tract to visualize the tract along with its branches if any and entire tract with its branches excised en-masse. This was followed by raising of flaps, triangular in case of Z-plasty and rhomboid in case of Limberg's flap and closure done using 3-0 polyglycolic acid sutures over a suction drain in case of primary closure fig(1,2). Hemostasis secured and placing of wound with betadine soaked gauze in case of open method. Group A operated by open method with mean operation time  $30 \pm 8$  minutes and group B operated by primary closure with mean operation time  $60 \pm 8$  minutes. Standard post operative care and antibiotics treatment was prescribed. Post operatively patient in group B discharged on 2<sup>nd</sup> POD (drain collection <10ml) after removal of drain and patients in group A were discharged on 6<sup>th</sup>-8<sup>th</sup> POD depending upon discharge from wound. Standard follow up was performed after surgery followed by regular visits to the outpatient department, all which was performed by protocol. Wound healing in follow-up was assessed by respective surgeons. A wound was defined as "healed" when wound care could be discontinued.

### Statistical Analysis:

Pearson's chi-square test is used to analyze the data and compare the results of both the groups and p-value of <0.05 is considered as significant.

### Results:

Out of 31 patients in group A 20 were males and 11 were females in group B 22 were males and 8 were females. Group A patients with mean age of  $24 \pm 7$  years with youngest being 14 years and oldest being 31 years. In group B patients with mean age of  $25 \pm 8$  years with youngest being 17 years and oldest being 33 years. In group A the size of the sinus varied from 3-8cm's presenting as abscess to multiple branched sinuses with up to 4 branches. In group B the size of the track varied from 3-9cm's presenting from abscess to multiple branched sinuses with maximum of 4 branches. In group A 9 patients presented with complications and all were wound infections, in group B 9 patients presented with complications 1 with hematoma, 3 with seroma, 3 with wound dehiscence and 2 with wound infection. Recurrence was seen in only one patient in group B and in none in group A. In group A 3 patients were not satisfied by cosmetic appearance of scar and in group B only 2 were not satisfied by cosmetic appearance of scar. Comparing both the results after the statistical analysis there was significant difference in rate of wound infection and there by wound healing with p-value of <0.04.

**Table I:** demographic data

characteristics	Open technique (n=31)	Primary closure (n=30)
Age in years	$24 \pm 7$	$25 \pm 8$
Male	20	22
Female	11	8

**Table II:** clinical outcome of open technique and primary closure of sacrococcygeal pilonidal disease.

Outcome	Open technique (n=31)	Primary closure (n=30)
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Time of operation (in minutes)	30 ± 8	60 ± 8
Length of hospital stay	6 ± 2	3 ± 2
Access to normal activity	15 ± 3	8 ± 2
Cosmetic satisfaction by 4 months	3	2
No of complications	8	9
Haematoma	0	1
Seroma	0	3
Wound dehiscence	0	2 (after 3 wk's of surgery)
Wound infection	9	2
Recurrence	0	1 ( after 3 months)
Mean time follow up	1year	1year



Fig 1. Z PLASTY



Fig 2. DRAIN IN-SITU

## Discussion:

Pilonidal sinus of gluteal cleft is traditionally associated with jeep drivers as young hairy males in driving profession but, as many recent reports suggest many women in adolescents as young adult age group are affected probably due to increased mobility and change in dietary habits leading to increased fat deposition in the gluteal region.<sup>(6,7)</sup>so, predominantly it is still a disease affecting younger population and hence had repression involving loss of work days.

The main characteristics of this disease has been its recurrence which has led various operations to devise ways of preventing or at least minimizing the chance of this troublesome complications with mixed results.<sup>(11,12,13)</sup> even though now-a-days also open technique is been widely applied for less recurrence.

On the basis of our experience the mode of intervention to pilonidal sinus should aim at simple procedure with low complications and should be associated with minimal pain and wound care to decrease time off from work and make the procedure most cost effective while preventing a prolonged hospital stay. All this pre-requisite are well satisfied by primary closure.

Saleh M et al<sup>(13)</sup> reported a randomised clinical trail of excision with or with out primary closure for pilonidal sinus involving large group of patients as significant rise in hospital stay, higher time off from work and healing time with open technique similar to our results.

## Conclusion:

Excision and primary closure of sacrococcygeal pilonidal sinus aiming at lateralization of natal cleft is superior to excision and healing by secondary intention.

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