

# OUTCOME OF SUCTION DRAIN AFTER EXCISION OF PILONIDAL SINUS

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## ABSTRACT

**Background:** Pilonidal sinus can present in many forms and managed by various techniques.

**Objective:** To evaluate the role of suction drainage after excision and primary closure with suction drain placement in pilonidal surgery (closed method) compared with excision and healing by secondary intention (open method).

**Methodology:** This cross sectional study was carried out on 68 patients from 1<sup>st</sup> July 2016 to 30<sup>th</sup> June 2018. This study consisted of 68 patients admitted with the diagnosis of pilonidal sinus. Patients were divided into two groups. In group A patients, open method (excision of pilonidal sinus and laying open the wound to be healed by secondary intention) was used. In group B patients, closed method (excision of pilonidal sinus and primary closure of wound with suction drain) was used. Postoperatively patients were examined for wound infection, time duration for wound healing and recurrence. Statistical analysis was done using SPSS 20 and p value less than 0.05 was taken as statistically significant.

**Results:** Pilonidal sinus disease was most common among male of 15-30 years of age (63.3%). All were male patients. Postoperatively wound infection was found in 3 (8.82%) patients in group A and 4 (11.76%) in group B. Recurrence of pilonidal sinus was found in 2 (5.88%) patients in group A and in 4 (11.76%) in group B. There was no significant difference between 2 groups regarding infection and recurrence rate. There were 8 (23.52%) patients in group A, whom wounds were healed in less than 20 days whereas there were 29 (76.47%) in group B, patient whom wounds were healed in less than 20 days.

**Conclusion:** In simple pilonidal sinus, excision of sinus and primary closure over a drain is ideal treatment because it has high healing rate and less infection and recurrence rate.

**Keywords:** Drain, Excision, Pilonidal sinus, Primary closure

## INTRODUCTION

Pilonidal sinus disease (PSD) commonly affects the sacrococcygeal region and it presents in a variety of ways.<sup>1</sup> First description about pilonidal disease came in 1833 by Mayo when he described it as a hair-containing cyst located just below the coccyx. Hodge named the disease as "pilonidal" from its Latin origin in 1880. Pilonidal disease may present as an asymptomatic hair-containing cyst, sinuses and symptomatic abscess of the sacrococcygeal region and recurrence is common.<sup>2</sup> Its incidence is 26/100,000 with male preponderance especially in the third decade of life.<sup>3</sup> Young men are commonly affected and it does not occur in children which suggest that it is an acquired pathology.<sup>4</sup> It mainly affects intergluteal furrow.<sup>5</sup> It can occur at other sites like umbilicus, axilla, neck and breast.<sup>6-10</sup> Predisposing factors leading to pilonidal sinuses include hairy skin, obesity, excessive sweating, wearing a tight clothing and occupations such as barber or sitting for a long period.<sup>11</sup> The disease is diagnosed clinically on the basis of history and examination.<sup>12</sup> There are different types of operation to surgically treat the disease. Treatment

is aimed at excision of the sinus tract, healing of the wound by laying open or primary closure, and prevention of recurrence.<sup>13</sup> The surgical treatments include: simple incision and drainage, lying open, marsupialization, excision and primary closure or rhomboid excision and Limberg flap procedure.<sup>14,15</sup> Most commonly performed procedures are primary wound closure are wound healing by secondary intention, after excision of pilonidal sinus.<sup>15,16</sup> Hematoma/seroma formation in closed method (sinus excision and primary closure) leads to wound infection and dehiscence. If hematoma/seroma formation is avoided, results of surgery can be better. We did comparative study on outcome like infection, recurrence and duration of healing in two methods. Closed method- excision of sinus and wound closure with suction drain placement and Open method- excision of sinus and laying open the wound to be healed by secondary intention.

## METHODOLOGY

This comparative study was carried out in Department of Surgery at Sheikh Zayed Medical College, Rahim Yar Khan over a period of 2 years from 1<sup>st</sup> July 2016 to 30<sup>th</sup> June 2018. This study

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consisted of 68 patients admitted with the diagnosis of pilonidal sinus. Patients with pilonidal abscess, recurrent or complex pilonidal sinus, osteomyelitis of sacrum and diabetes mellitus or immune-compromized were excluded from the study. Patients were divided into two groups. In group A patients, open method (excision of pilonidal sinus and laying open the wound to be healed by secondary intention) was used. In group B patients, closed method (excision of pilonidal sinus and primary closure with suction drain) was used. The surgeries were performed in spinal anesthesia.

Sinus tract was outlined by methylene blue solution. Elliptical incision made to excise the sinus. Sinus tract was excised with skin. In closed method, a drain was placed and wound was closed and suction applied to drain. In open method wound was kept open to be healed by secondary intention. Drain was removed when output was less than 5ml. Patient was advised to use commode and avoid prolonged sitting. The patients were examined postoperatively after 1 week, 2 week, 1 month, and every 3 months thereafter for 1 year for duration of wound healing, infection and recurrence and patients who lost during the follow-up were excluded. It was seen that whether the wound was healed in 20 days or more. This data was recorded on a proforma which included age, sex, diagnosis, method of treatment applied, and postoperative wound healing time, hematoma, infection and recurrence. Statistical analysis was done using SPSS 20 and p value less than 0.05 was taken as statistically significant.

## RESULTS

There were 68 patients who presented with pilonidal sinus. The patients were divided into 2 groups. Group A and Group B. There were all male patients. The patients were divided into 3 groups according to age. Age distribution is shown below in Table I.

**Table I: Age Distribution of patients in both groups**

Age (years)	Group A	Group B	Total	Percentage
15-30	22	21	43	63.3%
31-45	10	9	19	27.9%
>45	2	4	6	8.8%
<b>Total</b>	<b>34</b>	<b>34</b>	<b>68</b>	<b>100</b>

Postoperatively wound infection was found in 3 (8.82%) patients in group A and 4 (11.76%) in group B as shown in table II. P value was 0.5 which indicates that there is no significant difference in infection rate of both groups.

On follow up recurrence of pilonidal sinus was found in 2 (5.88%) patients in group A and in 4 (11.76%) in group B. P value was 0.336 which indicates that there is no significant difference in infection rate of both groups. Patients were divided into 2 groups on the basis of duration of wound healing (< 20 days and >20 days). There were 8 (23.52%) patients in group A whose wounds were healed in less than 20 days whereas there were 29 (76.47%) patient group B whose wounds were healed in less than 20 days. There was significant association between type of operation and duration of healing as the p value was less than 0.05. (Table II)

**Table II: Outcome in both groups**

Infection Rate in Both Groups					P. value
Groups	Infection	Percentage			0.5
Group A	3	8.82%			
Group B	4	11.76%			
Total	7	10.29%			
Recurrence Rate in Both Groups					P. value
Groups	Recurrence	Percentage			0.336
Group A	2	5.88%			
Group B	4	11.76%			
Duration of Wound Healing in Both Groups					P. value
Groups	< 20 Days	% age	< 20 Days	% age	0.0001
Group A	8	23.52%	26	23.52%	
Group B	29	85.29%	5	85.29%	

Pvalue=0.5

## DISCUSSION

Pilonidal disease is a common, chronic intermittent disorder of the sacrococcygeal region. There are multiple surgical options but no one is ideal. Various surgical procedures have been advocated including excision and packing with or without marsupialisation, excision and primary closure with and without suction drain and excision with flaps such as Karydakis, V-Y advancement and Limberg.<sup>17, 18</sup> Different studies show that in excision and primary closure healing is rapid and morbidity is less as compared to open method.<sup>19,20,21</sup>

In simple excision and healing by secondary intention, healing is prolonged morbidity is more in

the form of wound discharge and painful dressings.<sup>22,23</sup>

In primary closure, healing is rapid and this is achieved by prevention of sepsis and hematoma formation. The use of suction drainage has been shown to be effective in preventing these complications.<sup>24</sup> So in this study we compared surgical treatment by open method and closed method with suction drain.

Age range in our study was from 20-50 years with mean age of  $23.32 \pm 7.74$  years. Patients of Pilonidal disease commonly present in the third decade of their life. It is rarely seen in individuals of more than 40 years of age. The average age of presentation is 21 years for men.<sup>25</sup> Israr M et al<sup>1</sup> and Ghnam W et al<sup>26</sup> in their studies had found the mean age of 24 & 23 years respectively which is comparable to our study. Similarly, Tolba AM et al<sup>15</sup> and Nile AK et al<sup>27</sup> in their studies had also reported mean age of 24 & 25 years respectively.

In our study, there was no female patient and all were the male patients. These results coincide with results of many previous studies which have also shown the male predominance in pilonidal sinus disease.<sup>27</sup>

Wound infection and recurrence are the most common complications after pilonidal surgery. In our study, recurrence rate in Group A, (open method) was 5.88% while in Group B (close method) was 11.76 %. Although recurrence rate was high in group B but it was not significantly high. This recurrence rate is comparable to one study conducted by Ibrahim HH et al<sup>28</sup> in which recurrence rate of pilonidal sinus after open method was 6.0% and after closed method was 10.0%. Rind GH et al<sup>29</sup> has shown a significant difference in recurrence rate between open versus closed method for pilonidal sinus disease i.e. 2.33% versus 16.28% respectively. Tolba AM et al<sup>15</sup> in his study has shown equal recurrence rate after open versus close method (statistically not significant) for pilonidal sinus diseases treatment. High infection rate has been reported after primary closure.<sup>19,20</sup> Many procedures were done to decrease the recurrence and infection rate. Randolph S Williams reported a series of 31 patients whom he operated for sacrococcygeal pilonidal sinus.<sup>24</sup> These patients underwent excision and primary closure of the sinus over a suction drain. The mean operative time was 35 minutes. The results were excellent with markedly decreased rate of local wound complications and

primary healing resulted in 28 patients.

Tritepepe R, Di Padova C published a series of 243 patients who were treated by excision and primary closure of pilonidal sinus over a suction drain.<sup>30</sup> Healing was by primary intention in all the cases and no recurrence was seen in 5-15 years of follow up. In our study, there was no significant difference in infection rate and recurrence rate between the 2 groups but the healing rate was significantly high in group B (76.47%) and (14.71%) in group A. Most of wounds in group B were healed within 20 days. Healing rate was significantly high in patients of group B as shown in some studies.<sup>20,21</sup> This is also according to a study conducted by McCallum Peter M King and Julie Bruce.<sup>14</sup>

## CONCLUSION

In simple pilonidal sinus, excision of sinus and primary closure over a drain is ideal treatment because it has high healing rate and less infection and recurrence rate.

**Authors Contribution: MNI:** Idea Generation and Article writeup. **MA:** Data Collection. **HAB:** Data analysis and interpretation. All authors critically revised and approved its final version.

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