Comparison between drain
in the treatment of acute

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ABSTRACT

Objective: Simple incision and drainage by means of life
sacrococcygeal pilonidal abscess is associated with
than 40% recurrence. Definitive treatment of the chronic
pilonidal sinus is recommended by many clinicians
and drainage. The present prospective clinical study
was designed to compare the percentage of healing
of the acute abscess of the pilonidal sinus by
wound healing, and recurrence rate between the two

Methods: This study was
University of Medical Sciences and
from March 1999 to May 2004. The
patients who had an acute
abscess were randomly assigned
drainage or curettage surgical
wounds were laid open and daily
together with douche was recommended postoperatively.
The 2 treatment modalities were compared in terms of the
wound healing period, hospital stay, postoperative
complications using Chi-square and Student's t-test.
Patients with completed wound healing consisting of 72
subjects in the curettage and 39 subjects in the drainage
groups, were followed up to 65 months.

Results: Most patients
only on
occurring in
versus
were cured. Patients (90%
cases, the treatment relieved sy
patients returned to work 7-10 days
curettage
group (21.3
weeks ($p<0$
significa
the drainag
surgical
warm tub
Conclusion: In terms of
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treatment o

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Pilonidal disease is a common inflammatory process that consists of a hair containing sinus or pilonidal abscess involving the skin and subcutaneous tissue in the post sacral intergluteal region. Various strategies have been advocated for treatment of the disease; nonetheless, no consensus has emerged. There are 5 methods of surgical treatment currently: incision and drainage, laying open,

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Figure 1 - Acute pilonidal abscess enrolled for curettage or drainage.

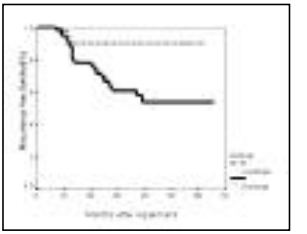

Figure 3 - Recurrence free rates (cure rate) of patients treated with curettage compared to subjects treated with drainage.

Figure 2 - Unroofing and curettage of acute pilonidal abscess.

incision and drainage.[3] However, it is not known how often healing per primam can be expected after simple incision and drainage only avoiding definitive treatment.[3] Excision of acute abscess mandates radical surgery through inflamed tissues, in addition, it leaves a large open wound and is associated with a prolonged healing time. The present prospective and controlled clinical trial study was designed to compare curettage and drainage of acute abscess in pilonidal sinus with special emphasis on the cure rate and recurrence rate among patients with healing per primam in a follow-up study of consecutively enrolled patients.

Methods

This study was performed in Kerman University of Medical Sciences, Kerman, Iran from March 2002 to March 2004. Two hundred and seventy-five patients were treated for pilonidal disease; 175 chronic sinuses and 150 acute abscesses. Patients who had acute pilonidal abscess in sacrococcygeal region were included in the study. Exclusion criteria were: 1) Patients who had chronic sinuses, 2) Patients who had undergone previous surgical procedures for pilonidal disease, 3) Patients who had systemic diseases such as diabetes mellitus, immunosuppressive disease, and 4) Patients who had abscesses in other locations. Patients were randomly assigned to receive one of the drainage or curettage surgical procedures. Written informed consent was obtained from all the patients. After induction of general anesthesia and endotracheal intubation, the patients were positioned in Jackknife position. After incision and unroofing of the abscess cavity and evacuation of pus, hair and foreign material were removed from the cavity. One-half were treated by incision and drainage (drainage group). The other one-half were treated with curettage of the abscess cavity (curettage group, **Figure 2**). The abscess cavity was thoroughly curetted with a bone curette. Hemostasis was achieved by electro coagulation. Fine mesh gauze was placed over the wound, and fluffed sponges were loosely packed in the wound. All surgical wounds were laid open, and daily sits bath and douche was recommended postoperatively at home. The wound was kept as clean as possible, and the area was kept hair free by frequent shaving until healing was completed. The patients were followed daily for 10 days, weekly for 2 weeks, and monthly for 6 months. Wound healing was observed during this time. Complete healing was defined as the absence of drainage and the formation of granulation tissue. At the same time, wounds that were not healed completely were considered as treatment failures. In total, 325 patients (72 males and 253 females) with a mean age of 23.4 years (range 15-53 years) were enrolled in the study. Of these, 175 had chronic pilonidal sinus and 150 had acute abscess initially. Follow-up was performed on the surgical clinic for all patients. Patients were questioned about the presence of pits in the sacrococcygeal region and any of the symptoms was present, the patient was asked to undergo clinical examination. Recurrence was defined as the presence of pits or sinus tracts in the sacrococcygeal region confirmed by the patient or physician. Overall, two patients in the curettage group were lost to follow-up (2.6%) and three patients in the drainage group were lost to follow-up (4.0%).

Statistical analysis. The cure rates and recurrence rates of the disease calculated using the life table analysis. The chi-square test was used to evaluate the significance of differences between the two groups. The difference between the recurrence rates of the two groups was considered significant if $P < 0.05$. The statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 11.5 for Windows (SPSS Inc., Chicago, IL, USA).

Results

The mean duration of symptoms was 2.3 months (range 1 week to 12 months). The mean duration of follow-up was 14.5 months (range 6-24 months). The mean hospital stay was 1.2 days (range 1-3 days). The mean time to complete healing was 21.3 days (range 14-42 days) in the drainage group and 14.2 days (range 10-28 days) in the curettage group. The cure rate was 94% (141/150) in the curettage group and 59% (89/150) in the drainage group. The recurrence rate was 6% (9/150) in the curettage group and 41% (61/150) in the drainage group. The difference between the recurrence rates of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly lower recurrence rate than the drainage group. The difference between the mean time to complete healing of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean time to complete healing than the drainage group. The difference between the mean hospital stay of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean hospital stay than the drainage group. The difference between the mean duration of symptoms of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean duration of symptoms than the drainage group. The difference between the mean duration of follow-up of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean duration of follow-up than the drainage group. The difference between the mean age of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly younger mean age than the drainage group. The difference between the mean sex of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly higher mean sex than the drainage group. The difference between the mean weight of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly lighter mean weight than the drainage group. The difference between the mean height of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean height than the drainage group. The difference between the mean BMI of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly lower mean BMI than the drainage group. The difference between the mean number of pits of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of pits than the drainage group. The difference between the mean number of sinus tracts of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of sinus tracts than the drainage group. The difference between the mean number of abscesses of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of abscesses than the drainage group. The difference between the mean number of recurrences of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of recurrences than the drainage group. The difference between the mean number of complications of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of complications than the drainage group. The difference between the mean number of days to complete healing of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean number of days to complete healing than the drainage group. The difference between the mean number of days to hospital stay of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean number of days to hospital stay than the drainage group. The difference between the mean number of days to duration of symptoms of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean number of days to duration of symptoms than the drainage group. The difference between the mean number of days to duration of follow-up of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean number of days to duration of follow-up than the drainage group. The difference between the mean number of days to age of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly younger mean number of days to age than the drainage group. The difference between the mean number of days to sex of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly higher mean number of days to sex than the drainage group. The difference between the mean number of days to weight of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly lighter mean number of days to weight than the drainage group. The difference between the mean number of days to height of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly shorter mean number of days to height than the drainage group. The difference between the mean number of days to BMI of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly lower mean number of days to BMI than the drainage group. The difference between the mean number of days to number of pits of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of days to number of pits than the drainage group. The difference between the mean number of days to number of sinus tracts of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of days to number of sinus tracts than the drainage group. The difference between the mean number of days to number of abscesses of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of days to number of abscesses than the drainage group. The difference between the mean number of days to number of recurrences of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of days to number of recurrences than the drainage group. The difference between the mean number of days to number of complications of the two groups was considered significant ($P < 0.05$). The curettage group had a significantly fewer mean number of days to number of complications than the drainage group.

dichotomous variables were analyzed using Student's t-test and Chi-Square test. P values of <0.05 were considered significant.

Results. Of 275 patients with pilonidal disease, there were 175 chronic sinus and 150 acute abscess. Patients who suffered from acute pilonidal abscess were randomly assigned to receive one of 2 drainage or curettage surgical procedures. There were no significant differences between the 2 groups in terms of mean age and gender ratio. Hospital stay in the subjects treated by curettage was no longer than that in those treated by drainage (1.12 ± 0.43 versus 1.24 ± 0.6, p=0.17).

Completed wound healing, up to 10 weeks after surgery (healing per primam), was observed significantly more in subjects treated by curettage than those treated by drainage (96% versus 78.7% p=0.001). During a follow-up of up to 65 months, the recurrence rate was significantly lower in patients treated with curettage than that in those treated with drainage: 10% versus 54%, p<0.001, (**Figure 3**).

Discussion. This study showed higher healing rates and lower recurrence rates than those achieved by the conventional therapy of acute pilonidal abscess; namely incision and drainage. The optimal treatment of pilonidal disease should result in a minimal recurrence and a short postoperative convalescence. While incision and drainage of the acute pilonidal abscess has long been considered as standard therapy, the recurrence rate ranges from 40-76%.[1,4,5] The high recurrence rate prompts the treatment of some patients with primary excision. This primary excision procedure does not significantly improve recurrence rates but results in a longer postoperative convalescence.[1] According to Jensen's study,[3] 42.4% failure to healing per primam was encountered 12 weeks after local anesthesia and simple incision and drainage for acute pilonidal abscess. Our study resulted in 21.3% failure to healing in a period of up to 10 weeks. Lower rates of failure may be due to better drainage and cleansing of the abscess cavity under general anesthesia and a suitable position. Hair remaining in an inadequately drained abscess cavity is the chief factor in causing the persistence of the infection with drainage at the incision site or formation of a new abscess.[6] Shaving the hair for 3 to 4 cm from the surrounding edges to prevent its accumulation in the wound may be the most important aspect of postoperative care.[7] Most of the patients in our study were discharged on the first postoperation day, and they were encouraged to keep a regular diet and take appropriate analgesia. This study with up to 56 months of follow-up confirms that the curettage technique achieves a shorter postoperative convalescence, higher healing rates and lower compromising recurrence rates.

In conclusion, unroofing and curettage, which is associated with higher rates of healing and lower rates of development of chronic pilonidal sinus, may be the treatment of choice in acute pilonidal abscess.

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References

1. Matter I, Kunin J, Schein M, Eldar S. Total excision versus non-resectional methods in the treatment of acute and chronic pilonidal disease. ***Aust N Z J Surg*** 1995; 82: 752-753.
2. Lee HC, Ho YH, Seow CF, Eu KW, Nyam D. Pilonidal disease in Singapore: clinical features and management. ***Aust N Z J Surg*** 2000; 70: 196-198.
3. Jensen SL, Harling H. Prognosis after simple incision and drainage for a first-episode acute pilonidal abscess. ***Br J Surg*** 1988; 75: 60-61.
4. Allen-Mersh TG. Pilonidal sinus: finding the right track for treatment. ***Br J Surg*** 1990; 77: 123-132.
5. Eryilmaz R, Sahin M, Alimoglu O, Kaya B. The comparison of incision and drainage with skin excision and curettage in the treatment of acute pilonidal abscess. ***Ulus Travma Derg*** 2003; 9: 120-123.
6. Hanley PH. Acute pilonidal abscess. ***Surg Gynecol Obstet*** 1980; 150: 9-11.
7. Hull TL, Wu J. Pilonidal disease. ***Surg Clin N Am*** 2002; 82: 1169-1185.