Impact of MEBO Dressing on Pilonidal Sinus Surgery

INTRODUCTION

Pilonidal sinus is a chronic intermittent disorder of the sacrococcygeal region and its treatment, usually surgical, remains controversial[1]. Factors implicated in its etiology are large buttocks with deep natal cleft [1,2,3], adolescent or young males with positive family history, folliculitis at another site, obesity[4], occupations requiring prolonged sitting, traveling or driving, excessive body hair[5], and poor local hygiene[6].

ABSTRACT

Objective: This study was designed to evaluate the results of surgical management of pilonidal sinus using open technique with application of MEBO Dressing in term of morbidity, healing time, the consequent return to work & recurrence rate.

Patients and Methods: This study included 30 patients (28 males, 2 females) within age range of 18-45 with chronic pilonidal sinus disease. Open technique was used; MEBO dressing (0.25% B-sitosterol) 6 x 12 cm was applied to the depth of wound postoperative & every other day.

Results: The mean operative time was 22.5±3.4 minutes; range 18-30 minutes. In the early post-operative period; wound infection was reported in 2 (6.7%) patients. The mean healing period was 30.6±2.9 days; range 27-35 days. In 29 cases (96.7%) obliteration of the natal cleft was achieved with an acceptable scar tissue pattern. The mean period off work was 31.2±3.4 days; range 28-35 days. The mean follow up period was 20.8±8.1; range 10-34 months. In the late post-operative period; no case developed re-infection, failed healing or recurrence during the follow up period.

Conclusion: Open technique for pilonidal sinus with MEBO Dressing is regarded as a safe, simple, and convenient. MEBO Dressing is an optimal biologic dressing for accelerating wound restoration and healing, and for preventing or reducing scar formation.

Keywords: Pilonidal sinus, MEBO Dressing.
Preoperative preparation
Preoperative preparation included fluids only after lunch, rectal enemas in the afternoon & bathing on the night before the day of surgery. The natal cleft was shaved by clipper on table. All patients received a single dose of broad-spectrum antibiotics before induction of anesthesia.

Surgical technique
All operations were performed under local anesthesia (Xylocaine 1% with adrenaline), Patients were placed in a prone, jack-knife position with buttocks widely separated using adhesive tapes, and methylene blue was injected into the sinuses. Open technique was used: A vertical elliptical excision of the all diseased tissue down to the presacral fascia and surrounding indurated tissue to achieve healthy, soft and supple wound margins was done using surgical knife. Haemostasis was achieved by compression by wet gauze for two minutes. Irrigation of the wound with normal saline was done. MEBO dressing (0.25% B-sitosterol) 6 x 12 cm was applied to the depth of wound.

Postoperative care
Postoperative management included bed rest, low residual diet until the fifth postoperative day, and usual sanitary precautions, inspection of wound and dressings after 48 hours, then every other day postoperatively with MEBO dressing.

All patients were discharged on the first postoperative day with oral pain medication. Instructions on discharge included improving local hygiene and regular removal of hairs by clipper monthly. Healing period, defined as the time elapsed since end of surgery till complete wound healing without any residual open segments, and work-off period were determined.

The follow up was performed as outpatient clinic visits 2 & 4 weeks & 3 months after surgery and 6-monthly thereafter. Follow-up items included early complications; namely haematoma formation and wound infection, late complications including failed healing, recurrence or irregular scar tissue formation as scar hypertrophy or keloid formation.

Patients were inquired about their satisfaction regarding the operative outcome and their answers were graded as yes (+ve) or no (-ve).

Statistical analysis: Data were analyzed using t-test and Chi-square test. Statistical analysis was conducted using the SPSS (Version 10, 2002) for Windows statistical package.

RESULTS
The study comprised 30 patients; 28 males and 2 females, with mean age 24.3±1.7 years; range 18-45 years, Table 1. The mean operative time was 22.5±3.4 minutes; range 18-30 minutes. In all cases, post-operative pain regression was observed after a few hours with a simple analgesic (non steroidal anti inflammatory) therapy. In the early post-operative period; wound infection was reported in 2 (6.7%) patients, and they were responded to conservative treatment by dressing & antibiotics.

The mean healing period was 30.6±2.9 days; range 27-35 days. In 29 cases (96.7%) obliteration of the natal cleft was achieved with an acceptable scar tissue pattern,
whereas in one (3.3%) case healing by an irregular scar occurred. The mean period off work was 31.2±3.4 days; range 28-35 days. The mean follow up period was 20.8±8.1; range 10-34 months, Table 2. In the late post-operative period; no case developed re-infection, failed healing or recurrence during the follow up period, Table 3.

**DISCUSSION**

Surgical treatment of chronic pilonidal sinus by excision of the diseased tissue down to the presacral fascia is generally accepted but the management of the remaining defect is still a matter of debate. Many methods have been described such as (1) open excision; (2) primary closure and (3) excision and flap closure. Open excision and healing by secondary intention technique is associated with long hospitalization, wound dressing daily, increased postoperative morbidity, loss of work days and poor cosmetic outcome due to wide unacceptable scars[11]. Primary closure of the wound is a simple technique but it has a high recurrence rate due to continuing deep natal cleft [12]. Excision with local flap procedures have the lowest recurrence rates but they are more technically demanding and their use is generally restricted to recurrent complex pilonidal sinus [13].

In the current study, we used open technique being simple & most popular in combination with MEBO Dressing as wound healing accelerator. All patients in this study passed a smooth post-operative period, they were discharged on the first post-operative day & they were able to join their duties after 31.2±3.4 days; range 28-35 days. The mean follow up period was 20.8±8.1; range 10-34 months, Table 2. In the late post-operative period; no case developed re-infection, failed healing or recurrence during the follow up period, Table 3.

### TABLE 1. DISTRIBUTION OF THE STUDY GROUP ACCORDING TO SEX

<table>
<thead>
<tr>
<th>Sex</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>28</td>
<td>93.3</td>
</tr>
<tr>
<td>Females</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

### TABLE 2. RANGE AND MEANS ± STANDARD DEVIATIONS OF DIFFERENT VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Range</th>
<th>X±SD</th>
</tr>
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<tbody>
<tr>
<td>Operative time (min)</td>
<td>18-30</td>
<td>22.5±3.4</td>
</tr>
<tr>
<td>Period off work (days)</td>
<td>28-36</td>
<td>31.2±3.4</td>
</tr>
<tr>
<td>Healing period (days)</td>
<td>27-35</td>
<td>30.6±2.9</td>
</tr>
<tr>
<td>Follow up (months)</td>
<td>10-34</td>
<td>20.8±8.1</td>
</tr>
<tr>
<td>Patients’ satisfaction (+ve)</td>
<td>(No.= 25)</td>
<td>(83.3%)</td>
</tr>
</tbody>
</table>

### TABLE 3. COMPLICATIONS AMONG THE STUDY GROUP

<table>
<thead>
<tr>
<th></th>
<th>No. (N=30)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early complications:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wound infection</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Late complications:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failed healing</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Recurrence</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Re-infection</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Irregular scar tissue formation</td>
<td>1</td>
<td>3.3</td>
</tr>
</tbody>
</table>
the nutrients in the film can penetrate into deep layer of the wound, which not only plays a great role in promoting tissue cells regeneration, but also maintains the good permeability between the wound and exterior side of the membrane, improving the wound drainage and reducing risk of infection. (2) The physiological moist environment formed by MEBO dressing can effectively isolate the wound from the damage by the air and secondary exogenous contamination; meanwhile, sesame oil in the dressing can eliminate the local inflammatory cells exudation and infiltration, reduce toxins production, so as to relieve wound injury on the one hand, it can enhance the repair reaction and accelerate physiological wound healing by nutrients supplement to and activation of wound basal cells on the other. (3) MEBO dressing has the “net-in-net” spatial structure, which, under the warming effect of local skin temperature, can separate and surround the necrotic tissues, and further initiate series of bio-chemical reactions to reduce the wound toxic substances and alleviate further damages to the wound. [15, 16].

In the current study, 29 cases (96.7%) obliteration of the natal cleft was achieved with an acceptable scar tissue pattern. The patients were accepted and satisfied by this technique (83.3%). This is better than 67% reported after Z-plasty reported by Toubanakis [17].

In this study, there was no recurrence, this could be contributed to methylene blue injection into the sinuses to avoid missed tract this agree with Testini et al [18] and Kitchen [19] who reported that the key to complete excision includes staining of all the sinuses and their tracts; Another factors that contributed to the prevention of late recurrence included: improved local hygiene by daily cleansing of the natal cleft with soapy water to clear all debris, foreign bodies, cotton and hair; and monthly removal of hair in the vicinity of the natal cleft by clipper. It could be concluded that open technique for pilonidal sinus with MEBO Dressing is regarded as a safe, simple, and convenient. MEBO Dressing is an optimal biologic dressing for accelerating wound restoration and healing, and for preventing or reducing scar formation.

REFERENCES