Self-adhesive drape (Opsite) for management of leaking abdominal wounds

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Background: Leaking abdominal wounds (LAW) are associated with high patient morbidity. Objectives: To evaluate the efficacy of a self-adhesive drape (Opsite) with suction drains for the management of LAW. Methods: Twenty patients with LAW (14 intestinal fistula, 4 biliary fistula, 2 ascites leak) were subjected to the use of a self-adhesive drape with a Romovac suction drain. Conventional wound management was used for the first 5 days, followed by the application of Opsite drape. The parameters evaluated were quantity of the effluent, skin integrity, ease of application, patient comfort and cost effectiveness. A discomfort score (based on four parameters: mobility, skin excoriation, wetness and unpleasant odor) was recorded on day 1 (pre conventional), day 5 (post conventional-pre Opsite), and day 5 after Opsite application. Opsite drape was changed whenever required. Results: The discomfort score was not altered with conventional therapy but was lower following Opsite application: mobility (0 vs 2), skin excoriation (0 vs 2), wetness (0.5 vs 2) and odor (0 vs 1). Opsite drape allowed accurate measurement of the effluent in all patients. The drape required change after a median of 14 days (range 10 to 18). Conclusions: Opsite drape is easy to apply on LAW, is effective in containing the effluent, and is associated with low patient morbidity. [Indian J Gastroenterol 2000;19:178-180]

Key words: Abdominal fistulae

The local management of high-output enterocutaneous fistula remains a major surgical challenge. It becomes even more difficult when the fistula opens in an infected laparotomy wound. In leaking abdominal wounds (LAW), the contents — intestinal juices, bile or ascites — are discharged through the main abdominal wound. The difficulty in maintaining skin integrity and delay in wound healing secondary to chemical irritation by the effluent results in increased morbidity. Further, there are problems of inability to measure the discharge volume, prolonged hospital stay and high cost of treatment. The associated mortality varies from 4% to 15%.

Various measures like absorbent charcoal, transparent dressings, skin barriers, pouches and suction catheters have been used for the local management of LAW. Self-adhesive drape (Opsite) is a semi-permeable, transparent sheet commonly used for draping before surgery, and for dressing of bedsores and burns. The present study assessed the utility of Opsite drape with suction drains in the local management of LAW.

Methods

This prospective study included 20 postoperative patients (age mean 38 years, range 25-55; 14 men) with LAW (14 intestinal fistula, 4 biliary fistula, 2 ascites leaks), managed at our center from July 1996 to June 1999. A written informed consent was obtained from all patients, along with approval from the research society of our institution.

The causes of intestinal fistulae were abdominal tuberculosis (5), ileal perforation (5), ascending colon carcinoma (2) and colonic perforation (2). Patients with left colonic fistula were not included, as the effluent was too thick to be sucked by suction drains. Six of these patients had undergone resection-anastomosis, four ileoascending anastomosis, two right hemicolectomy and two sutured of perforation. Of the patients with biliary leak, two had malignant and one had benign biliary stricture: in all 3, hepatico-jejunostomy was done. The fourth patient had undergone subtotal gastrectomy, after which a duodenal stump leak had occurred. Both patients with ascitic fluid leak had underlying cirrhosis; one had undergone right hemicolectomy for an ileo-cecal mass and the other choledochectomy.

These fistulae were classified depending on their site and the condition of the surrounding skin. Four patients had type 2, and eight each had types 3 and 4 fistulae. Fistulae in nine patients had a high output, i.e., more than 500 ml per day. The study protocol was initiated within 24 hours of the development of LAW in all patients.

Conventional method consisted of the use of gauze pieces and gauze for dressings to absorb the effluent from the fistula for the first 5 days. The dressing was changed several times a day as and when it was soaked. The technique of local management of LAW using Opsite drape was started from the sixth day.

Technique

The Opsite drape (Smith and Nephew Healthcare, Mumbai) application included placement of two tubings of Romovac suction drain (Romsons, Agra: tube size 14 Fr
to 18 Fr) at the mouth of the fistulous opening. The drape (11" x 11" and 19" x 11") was applied across the wound to the surrounding healthy skin. A mesentery was created around the tubing to avoid seepage of fluid by the side of the tubing (Fig). Tubes were flushed with saline intermittently to keep them patent and irrigate any associated septic cavity. In 3 patients, in whom skin excoriation had already developed, karaya gum or Stomadhesive was used before applying the Opsite drape. The drape was changed whenever the effluent leaked beneath it, lifting it up from the skin.

The general management for all patients was enteral or parenteral nutrition, maintenance of fluid and electrolyte balance, blood transfusion if required, and antibiotics for sepsis. Enteral nutrition was used whenever this route was available for feeding (return of peristalsis, no increase in fistula output). Total parenteral nutrition was given initially to 9 patients with intestinal fistula (ileal perforation 5, ascending colon carcinoma 2, cecal perforation 2) and one patient with subtotal gastrectomy. Nutritional requirement was calculated by a dietician, in consultation with the surgeon. The end point of our study was any one of the following: a) closure of the fistula, b) surgical intervention or c) death.

A patient discomfort score using four parameters (mobility, skin excoriation, wetness and unpleasant odor) was developed to assess the results of conventional treatment and Opsite drape application. Each parameter was graded on a scale of 0 to 2 (mobility: 0 = mobile, 1 = limited mobility, 2 = immobile; skin excoriation: 0 = nil, 1 = redness, 2 = ulceration; wetness: 0 = nil, 1 = minimal, 2 = change of dressing; odor: 0 = nil, 1 = minimal, 2 = distressing). The discomfort scoring was done by the same person on both occasions.

**Table: Discomfort score**

<table>
<thead>
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<th>Parameters</th>
<th>Pre conventional</th>
<th>Post conventional</th>
<th>Post Opsite</th>
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<tr>
<td>Mobility</td>
<td>2 (1-2)</td>
<td>2 (1-2)</td>
<td>0 (0-1)**</td>
</tr>
<tr>
<td>Skin excoriation</td>
<td>1.5 (1-2)</td>
<td>2 (1-2)</td>
<td>0 (0-1)**</td>
</tr>
<tr>
<td>Wetness</td>
<td>1.5 (1-2)</td>
<td>2 (1-2)</td>
<td>0.5 (0-1)*</td>
</tr>
<tr>
<td>Odor</td>
<td>1 (1-2)</td>
<td>1 (1-2)</td>
<td>0 (0-1)**</td>
</tr>
</tbody>
</table>

p<0.05, **p<0.001 as compared to pre Opsite

**Results**

The discomfort score remained unchanged after conventional therapy. Patients with LAW treated with application of Opsite drape experienced better mobility (p<0.001) and less severe skin excoriation (p<0.001), wetness (p<0.05) and odor (p<0.001) (Table).

One application of Opsite drape lasted for a median of 14 days (range 10 to 18). Eleven patients (8 with intestinal fistula, 2 ascites, 1 biliary leak) had spontaneous closure of fistula, within 3 to 6 weeks; 5 (4 with intestinal fistula, 1 biliary leak) patients needed re-exploration of the wound; and 4 (2 with intestinal fistula, 2 with biliary leak) died. Seven of the 20 patients with healthy skin prior to the application of Opsite did not develop skin excoriation after application of Opsite drape.

The fistula output could be measured accurately only after application of Opsite drape. The fistula output was measured every day, facilitating fluid replacement. The median fistula output was 525 mL (180-1000) on day 5, 335 mL (310-360) on day 10 and 35 mL (0-70) on day 15 after Opsite drape application.

**Discussion**

Fistula discharge from an abdominal wound is associated with skin excoriation, need for frequent change of dressing, soakage of patient’s clothing, malodor and difficulty in accurately estimating fluid and electrolyte loss.\(^1,2\) Methods described for control of discharge from a fistula include the use of split mattress, sump suction and wound managers. Split mattress is effective but necessitates nursing the patient in the prone position.\(^2,5\) Debris, which results in overflow soakage, often blocks sump suction tubes. Specially designed sump tubes are not freely available and are quite expensive. Wound managers (large-sized bags with large stoma), which can be fixed to the edges of the wound, are effective in containing the effluent but are expensive.

The technique described in this report overcomes these problems as the patient is nursed in a comfortable supine position. Even with a fistula opening in a laparotomy wound, the patient can be mobile. The Opsite drape prevents overflow of discharge and soakage as it is in close contact with the skin right up to the edge of the wound. Collection of the discharge allows accurate output estimation, facilitating adequate replacement therapy. As the discharge is sucked out, the problems of the soak-

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ISG NEWS

41st Annual Conference
This conference will be held in Delhi November 19-25, 2000. Dr R K Tandon is the Organizing Secretary. There will be a 2-day CME program by the American Gastroenterology Association. Members will receive the scientific program soon.

Mid-term meetings
The ISG provides a financial aid of Rs 10,000 each for two mid-term meetings every year. Those who are willing to organize such meetings next year should write to the Secretariat. The meetings should be held before July 2001.

42nd Annual Conference
This conference will be held in Lucknow November 18-22, 2001. Dr S R Nair is the Organizing Secretary. He will be sending the first announcement shortly.

Awards
Announcements regarding the awards for the year 2002 will be made in the next issue of the Journal.

Membership dues
Ordinary members should send their annual dues to Dr Love Dalal, A-13 Silver Arch, Behind Town Hall, Ahmedabad 380 006. The revised fees are as follows:

<table>
<thead>
<tr>
<th>Status</th>
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<tr>
<td>Ordinary member</td>
<td>Rs 500</td>
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<tr>
<td>Life member</td>
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<tr>
<td>SAARC member</td>
<td>Rs 7500</td>
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<tr>
<td>NRI (Life membership)</td>
<td>US$ 300</td>
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State Chapters
In the recently held meeting of the Governing Council, it was decided that all State Chapters should send the list of their office bearers, and inform details of their activities, to the Secretariat. State-level CME meetings should be held at least two months before the annual Society conference.

Address and Membership Number
Please write to me about any change or addition in your address. Please mention your membership number in all your correspondence. If you are not aware of your membership number, please write to the Secretariat.

With kind regards,
Y K Joshi
Honorary Secretary, ISG
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