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SIMPLE DEVICE FOR MANAGEMENT OF VISCERO CUTANEOUS FISTULAS

JAMES BARRON, M.D., AND A. A. MANZOR, M.D.

EXTERNAL fistulas and sinuses of the human body occur with sufficient frequency to command attention. Modern aggressive surgical attack on the gastro-intestinal tract and genito-urinary tract has brought an increasing number of postoperative fistulas of the organs involved. In most cases, the profuse drainage with its distressing problems are pretty well controlled by the use of triple lumen drainage tubes which have been previously described. In recent years, we have added the use of a simple suction device to further improve the local care of viscero cutaneous fistulas. In addition to simplifying the care of these areas, healing is also facilitated.

Numerous devices are described in the surgical literature for applying suction to viscero cutaneous fistulas. Babcock, McCollum, Choffin, Crile, Thorstad, Goldsmith and many others have made contributions to the care of the difficult problem of viscero cutaneous fistulas. Goldsmith described a suction cup for use in these cases. We have used regular ileostomy bags which are inexpensive and easily obtained.

For most cases, we have used the regular Davol ileostomy bag (#1323). Figure 1 shows the construction of this suction device. A rubber plug or cork about 1" in diameter is prepared by passing a 2" length of small pipe through the center of the rubber plug. A piece of rubber tubing or catheter is cut with sufficient length to reach the upper end of the bag after being attached to the inside of the pipe. The rubber plug is inserted in the lower end of the bag as shown and held in place by rubber bands which also make the area air tight. Then a needle to give the degree of suction desired is inserted into the bag as shown and held in place by rubber bands or tape wrapped around the rubber plug. The Stedman pump or any other pump with a rapid turnover of air can be used for suction.

The amount of suction applied is important. One must not forget that pressures in the gastrointestinal tract are always positive and are greatly increased with the passage of peristaltic waves which increase an already positive pressure and are usually accompanied by profuse outpourings of fluids. Too much suction can cause bleeding or edema. For the Stedman pumps the following approximate values have been found.
Any ileostomy bag may be used. This represents a #1323 Davol bag. The lower end may be cut off if desired. The rubber plug perforated by a short piece of pipe is inserted as described and tightly held in place by rubber bands. The bag is held in place over the fistula opening by cement and an elastic belt.

<table>
<thead>
<tr>
<th>Needle Size</th>
<th>Average Vacuum</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed (no needle)</td>
<td>410 cm.</td>
<td>H₂O</td>
</tr>
<tr>
<td>#24 needle</td>
<td>135 cm.</td>
<td>H₂O</td>
</tr>
<tr>
<td>#22 needle</td>
<td>70 cm.</td>
<td>H₂O</td>
</tr>
<tr>
<td>#20 needle</td>
<td>22 cm.</td>
<td>H₂O</td>
</tr>
<tr>
<td>#18 needle</td>
<td>8 cm.</td>
<td>H₂O</td>
</tr>
<tr>
<td>#16 needle</td>
<td>3 cm.</td>
<td>H₂O</td>
</tr>
</tbody>
</table>

We have used the #20 and #22 needle for most of our cases.
APPLICATION OF BAG FOR SUCTION

We prefer to use the triple lumen tubes to keep the fistula tract open especially until any pockets or extensions are obliterated. The suction is fitted over this by cutting an opening in the face of the bag to fit closely the fistula or sinus tract opening. Suction of great degree must be avoided until the tract is well established. Otherwise bleeding can result. We have had this in 4 cases. All were relieved by decreasing the amount of suction by use of larger needles. The bag is connected to the skin around the skin opening with ileostomy cement (Figure 2). An elastic belt is used to hold the bag in place and the suction which is applied will help to hold the bag on quite securely for large periods of time. As the fistula tract decreases in size the drainage tubes are decreased in size and then removed all together. For superficial openings tubes are not used and they are not necessary if the fistula is well formed. Great care must be taken not to expose too great an area of adjacent skin because edema of the exposed ring of skin will result. Of equal or even greater importance in the management of these fistulas, is the restoration of all liquid removed in upper gastrointestinal fistulas and the feeding of liquefied natural food. Without adequate nutrition healing is most seriously impaired regardless
of how well the local wound is cared for. This all important point is usually casually dismissed in articles on this subject.

CONCLUSION

A simple suction device that is inexpensive and easily made has been presented, which has helped greatly in controlling and healing viscero cutaneous fistulas.

REFERENCES
