Alimentary Tract Fistula: Stomatherapy Techniques of Management

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Skin care of enterocutaneous fistulas is demanding but rewarding work, and there is considerable benefit if these cases are referred to centers in which the interests and skills are already developed. Management must include nutritional support, skin care, and morale improvement. The details of the principles of skin care are outlined in this report. The variety of materials utilized in stoma care and indications and instructions for their utilization are discussed.

Historically, alimentary tract fistulas have been attended by a high mortality rate. The earliest recorded fistula is that described when Ehud stabbed Eglon: "And Ehud put forth his hand, and took the dagger and thrust it into his belly . . . And the dirt came out." (Judg. 3:21–22) Thus Eglon was assassinated.

Until comparatively recently, fistulas, both traumatic and spontaneous, in general had a poor prognosis. Sepsis and inanition were the principal causes of this morbidity; the high morbidity rate, coupled with the inconveniences of the leaking wound encouraged surgeons to undertake operative interventions although even with operation the prognosis was grave. Celsus (53 B.C.–7 A.D.) noted that when the small intestine has been penetrated no good can be done but "the large intestine can be sutured, not with any certain assurance, but because this doubtful hope is preferable to certain despair; for occasionally it heals up" [1]. John Hunter adopted a more conservative approach and with great prescience observed that fistulas tended to close spontaneously, "in such cases nothing is to be done but dressing the wound superficially, and when the contents of the wounded viscus become less, we may hope for a cure" [2].

In the 1950's and 1960's, despite the introduction of fluid and electrolyte replacement and antibiotic therapy, the mortality rate from alimentary tract fistula remained high. Sheldon et al. in 1971 reported a mortality rate of 16% with high-output fistulas [3], and Goligher in the same year [4] reported a mortality rate of 1 of 10 treated patients. Goligher advocated surgical intervention with exteriorization of the damaged intestine.

The care of the excoriated skin adjacent to the fistula taxed the ingenuity of both the medical and nursing staff; nursing prone with a split mattress using gravity to prevent wound soiling was one technique, and sump drainage was another method of preventing spillage to the skin. A wide variety of pastes including fresh egg white were applied to the excoriated skin; even fresh placenta was recommended as a "biologic dressing" [3].

Skin care improved dramatically with the introduction of karaya gum as a protective agent in ileostomy care in the 1960's [5, 6]. The next breakthrough was in 1971 when Stomahesive® became available [7].

During the 1960's and early 1970's, the importance of the nutrition of fistula patients was realized and this, coupled with the new technology of intensive nutrition, was married to advanced skin care. Thus, the outlook for these patients is very different today compared with only 10 years ago.

Essentially the management of intestinal fistulas nowadays is derived from 3 concepts: (a) the importance of nutritional support, (b) the importance of local management of the fistula and its adjacent skin, and (c) the importance of maintaining the morale of the patient.

There is now a consensus that early surgery to close the fistula is usually inadvisable and by its nature may make the situation worse, though early surgical intervention to drain abscesses remains mandatory. Once the patient’s morale has been improved and his or her anxiety lessened, nutrition-
al status advanced, skin problems overcome, and the fistula output successfully collected, surgery may be indicated. Exteriorization of fistulous damaged bowel with formation of a stoma or the construction of a diverting stoma proximal to the fistula can be important stages in recovery [4].

In our department, the approach to alimentary tract fistulas is derived from the 4 stages of management enunciated in Dunphy’s department in the 1960’s [3] and development of these principles by Irving in 1977 [8]. The only important technical difference is that for colocutaneous fistulas, we always perform a diverting loop ileostomy as soon as the patient’s general condition permits, using the Biethium® rod technique we have described elsewhere [9].

The Role of Nursing and Enterostomal Therapists in Fistula Management

The nursing priorities in the care of the fistula patient are as follows:
1. To fit and maintain appliance(s) so that at all times the patient is dry and comfortable.
2. To protect the skin surrounding the fistula from discharge which can cause excoriation, dermal maceration, and digestion.
3. To ensure that all losses from the fistulas are collected and their volume measured. In high-output fistulas (gastric, pancreatic, biliary, and upper small intestinal fistulas), it may be advantageous to collect the output and reinsert it into the intestinal tract below the leak.
4. To do everything possible to maintain patient morale.

Two major causes of death in fistula patients are loss of weight and loss of morale, and management of both these determinables is very much a nursing function.

The Local Problems

To achieve the nursing objectives of local fistula management can be very exacting; the site of the fistula is usually not determined preoperatively. It can, therefore, occur anywhere on the abdominal wall, in the wound, through a drain site, or at the umbilicus, for instance; it may be near body creases, bony prominences, and other irregularities in the parietes. All the natural irregularities of the abdominal wall provide ideal channels for leaks to occur.

Multiple fistulas are an even more difficult problem, particularly if they are close to each other or deep in the recesses of a broken down laparotomy wound. It is desirable, if possible, to collect the discharge from each fistula separately; this enables a continuous assessment of the activity of each fistula and whether it is healing or not. To achieve this division of the spoil, it is best to build up “dams” between each opening and collect the loss of each fistula separately.

Drainage from a fistula, particularly a more proximal high-output fistula, is very fluid and more difficult to contain than the thicker output of an ileal or colon leak. Fortunately, the modern products designed for stoma care lend themselves to fistula management and local skin protection.

Assessment of the Local Problem

Prior to applying any drainage system it is important to assess the total area; the site and shape of the fistula and the physique of the patient must be carefully evaluated. In this evaluation, it is helpful to have the patient adopt various postures such as sitting and twisting in bed, and stretching and stooping if they are ambulatory. Patient posture can alter body contours and, unless these contours are accommodated, “bagging” the fistula will be compromised. It must be remembered that “sitting” an elective stoma, varying its position to physiognomy and posture, is an essential prerequisite to successful ostomy rehabilitation. A careful examination of the skin around the fistula will allow the nurse to foresee possible leakage tracks in body hollows and enable him or her to target onto these when assembling the appliance.

The condition of adjacent skin is important as well. Areas of skin damage will require urgent attention; furthermore, the area and direction of spread of any excoriation may suggest the way the tide of discharge ebbs and flows.

Having made the observations and plan of strategy, the nurse must assemble all the necessary equipment before doing anything to the patient. In dressing all but the most distal colocutaneous fistulas, a suction line is essential. A second nurse assistant is almost always needed, at least for the first dressing.

Procedure

All drains are removed. The surrounding skin is cleaned with Cetrimide® or an anionic cleansing solution and shaved over an area well around the fistula. This cleaning and shaving must be very gentle in order to avoid further compromise of the skin. While this is being done, the second nurse should use the sucker to remove continuously any