The management of a patient with enterocutaneous fistula: a complex case study

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Abstract

Complex draining wounds increase the care burden on health providers and reduce patient quality of life. Enterocutaneous fistulae present a challenge to medical and nursing staff and, if not adequately managed, a patient with a high-output fistula can develop fluid and electrolyte imbalances in a relatively short period of time. This case study outlines the management of a patient with faecal fistulae in Thailand.

Introduction

A fistula is an abnormal opening between two or more organs or structures. The aetiology of fistula formation varies widely according to the organs involved, precipitating factors, patient risk factors, and surgical technique or procedure. The complexity of an enterocutaneous fistula depends on the volume and nature of the output. Low-volume output is <200 ml/24 hours, moderate output is 200 to 500 ml/24 hours and high output is >500 ml/24 hours[1]. Approximately 30% of all types of fistulae close spontaneously within six to seven weeks[2]. Enterocutaneous fistulae present a challenge to medical and nursing staff. If not adequately managed, a patient with a high-output fistula can develop fluid and electrolyte imbalance in a relatively short period of time[3].

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Case report

The patient was a 22-year-old female who was transferred to our hospital with an enterocutaneous fistula, abdominal pain and malnutrition. Before she was transferred she had twice undergone exploratory surgery and her fistula management had become more complex. She had underlying systemic lupus erythematosus (SLE) and was taking prescribed medications which included prednisone. On transfer to our hospital, her malnutrition was treated initially with total parenteral nutrition (TPN) and pain management was provided.

Figure 1. The wound was contaminated with drainage from a high-output fistula.

On examination she was found to have two enterocutaneous fistulae within the proximal section of her abdominal wound and the wound was heavily contaminated with drainage from a high-output faecal fistula (Figure 1). Simple gauze dressings had been used and these had been changed frequently.

The peri-fistular skin was ulcerated and painful (Figure 2). The distal portion of the abdominal wound was covered with granulation tissue and slough and required a moist environment to promote healing (Figure 3). The patient suffered sleep deprivation, pain and high levels of anxiety about her illness.

The enterostomal therapist nurse (ET) was consulted and established goals for wound management which included:

1. Maintenance of fistula drainage and accurate measurement of fluid balance.
2. Protection of the peri-fistula skin.
3. Provision of nutritional support.
4. Enhanced patient comfort, mobility and odour control.
5. Optimised patient satisfaction and quality of life.

Figure 2. Two enterocutaneous fistulae within the proximal section of the wound resulted in peri-fistula skin ulceration.

Figure 4. A wound template was made using transparent plastic and marker pen.

Figure 3. The two fistulae were situated in the proximal section of the wound and the distal portion was covered with granulation and moderate amounts of slough.

Figure 5. The fistula was isolated and a catheter was placed over the fistulae and attached to modified wall suction.

The wound was assessed and transparent plastic and marker pen was used to trace a template of the wound (Figure 4). Skin barriers were applied around the peri-fistula wound (Figure 5). Skin barrier powders were applied over the ulcerated skin at the right flank to absorb exudates and promote healing (Figure 6). The intention was to isolate the fistulae and a catheter was laid over the fistulae opening and connected to modified wall suction with continuous suction set at 90–125 mmHg. Isolation of the fistulae kept the wound bed free of faecal contamination and helped protect and facilitate healing of the peri-fistula skin.

After 10 days, the peri-fistula wound was healed but the enterocutaneous fistulae still had high output. Effluent was continually drained by the two catheters which were sited over the fistulae and attached to wall suction with continuous pressure set at 90–125 mmHg (Figure 7). After four weeks, the wound had contracted and decreased in size (Figure 8). The volume of fistulae effluent output had reduced to less than 100 ml/24 hours (Figure 9). Commercial ostomy appliances were now used to containment fistulae effluent and skin barriers were applied to protect the skin between the two fistulae (Figure 10). After nine weeks, further contraction

Figure 6. Skin barrier powders were applied over the ulcerated skin at the right flank to absorb exudates and promote healing.

Figure 8. Wound at four weeks.

Figure 7. After 10 days, the peri-fistula wound had healed but the fistula output remained high and this was drained via two catheters, which were attached to modified wall suction.

Figure 9. Solid skin barrier wafer was applied to wound bed, between the two-fistulae site. The volume output from the fistulae had reduced to 100 ml/24 hours.

Figure 10. An ostomy appliance was modified to contain effluent and protect the wound bed.

Figure 11. The fistula was then managed with a standard ostomy two-piece system.

Figure 12. Wound at nine weeks when only one fistula remained.

had occurred and one fistula had closed spontaneously. The patient was increasingly more independent.

Conclusion

The wound and fistula management combination described in the case study was utilised effectively to contain effluent and odour. As a result, the frequency of dressing changes were reduced and patient comfort, quality of life and healing were enhanced.

References

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