

“To pouch or not to pouch?”

Enterocutaneous fistula & the effective use of the eakin Wound Pouch™



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Introduction

An enterocutaneous fistula (ECF) is defined as an abnormal connection between the intestinal lumen and the skin¹. Thirty percent of ECFs are caused by radiation, malignancy, inflammatory bowel disease or sepsis². Furthermore, 75% of small bowel fistulas are reported as direct complications post abdominal surgery¹. The presence of ECF results in a significant financial burden on the health care system by increasing the length of intensive care unit and hospital stay². Mortality rates for patients with an ECF vary from 5.5% to 30% with infection, poor nutrition and electrolyte imbalance³. The management of an ECF requires an in-depth plan, including containment of fistula effluents, maintenance of adequate nutrition, strict fluids and electrolyte balance, and promotion of fistulae healing⁴. The creation of an outcome-based plan with a multidisciplinary team focus in ECF management can improve patient's clinical outcome². Appropriate wound care management is the key element in the overall care and healing of the ECF⁵.

This following case study illustrates the challenges faced by a patient Amanda, her carers, and the multidisciplinary health care team in managing her high output ECF. The multidisciplinary team involved in Amanda's care in hospital included the general surgery doctors, Stomal Therapy Nurse, the surgical ward nurses, dietitian, social worker, physiotherapist and occupational therapist. Amanda has consented to the use of her information for this case study. Her name is a pseudonym to protect her privacy and confidentiality of information.

Case Study

Amanda is a 47-year-old female who presented to the Emergency Department with tachycardia, increasing abdominal pain and abdominal distension. Amanda's previous medical history revealed severe cerebral palsy, rheumatoid arthritis (on high dose prednisone), chronic constipation (on Docolax), gastroesophageal reflux disease and bilateral PE (no longer on anticoagulation). Her previous surgical history included an open hysterectomy, a laparoscopic low anterior resection for complicated diverticulitis and a laparotomy with adhesiolysis for small bowel obstruction. Amanda lives with her sister, has a National Disability Insurance Scheme (NDIS) care coordinator and support worker to assist with activities of daily living. She is continent and uses an electric wheelchair to mobilise around the house and within the community.

In this admission, through a radiological investigation with computed tomography (CT) Amanda was diagnosed with a high-grade small bowel obstruction requiring an emergency laparotomy with extensive adhesiolysis, small bowel resection and repair of multiple serosal tears. Her post-operative recovery was complicated by the formation of a high output ECF that significantly prolonged her hospital stay.

Amanda's post-operative course was complicated with 21-day ICU admission due to sepsis that was secondary to an intra-abdominal collection. She had interventional radiology drainage of CT proven intra-abdominal collection in the left lower quadrant. The abdominal drainage cultures grew *Escherichia coli*, *Enterococcus faecium* and *Candida albicans* which were sensitive to broad-spectrum antibiotic therapy of Tazocin. A further serial CT was conducted to confirm complete resolution of her intra-abdominal collection. Unfortunately, it also showed that Amanda had subsequently developed an ECF most likely arising from one of her previous serosal tears. Total parental nutrition (TPN) was commenced for nutritional support and bowel rest, to further assist with fistula healing and prevent weight loss. Amanda's fistula output was ranging from 2000 to 2400ml a day, which was considered as high output ECF, as being greater than 500ml in 24 hours⁷. A combination of antidiarrheal medications were used to slow down the gastrointestinal tract. They included octreotide, high dose loperamide and codeine phosphate. Through the multidisciplinary team discussion, it was decided that Amanda's ECF was to be managed conservatively with specialised wound care management to facilitate closure via secondary intention.

eakin Wound Pouch™ Management

Initially, Amanda's laparotomy site was covered with a transparent hydrocolloid dressing for protection. On day 5 post-operation, a transparent film with absorbent pad dressing was used as the abdominal wound site discharged moderate amounts of greenish fluid. However, a more absorbent dressing was applied the next day to Amanda's umbilical area as it was leaking large amounts of faecal fluid. The absorbent dressing was changed up to 5 times per day. Amanda had expressed her discomfort from frequent dressing change and complained of pain around the wound where her skin was inflamed, moist and excoriated (Figure 1).



Figure 1: Amanda's enterocutaneous fistula and peri-fistula skin

The peri-fistula skin was at high risk of breakdown due to the proteolytic enzymes contained in small bowel effluent⁷. On day 12 post-operation, Amanda's CT scan had confirmed the development of ECF. Initially, a fistula separator and a negative pressure wound therapy (NPWT) vacuum-assisted closure (VAC) dressing were commenced as per Amanda's surgeon recommended. Indication for the use of NPWT for Amanda's fistula consisted of a high potential for spontaneous closure (especially those not matured) and no evidence of exposed intestine or other internal organs³. However, Amanda was unable to tolerate the pain which caused by the pressure from the NPWT device within an hour of application despite the pressure of therapy was set on a low intensity of 75 mmHg. In addition, the VAC dressing was leaking from the large volume of faecal fluids from Amanda's ECF. High output ECF which located at the base of an abdominal wound could present complex containment problem³.

As a result, the eakin Wound Pouch™ was chosen as it is designed to collect high output from wounds or fistulas, whilst the integrated hydrocolloid skin barrier can protect the skin against contact dermatitis⁶. Furthermore, the flexibility of this pouch easily moulded over Amanda's body contours and abdominal creases. This had prevented pouch leakage during Amanda's movement, as she was able to be transferred from the hospital bed to her wheelchair daily. The main benefit of the transparent plastic pouch was that it allowed health professionals to assess the fistula opening without the need to remove the pouch. By using the eakin Wound Pouch, the fistula output was accurately measured, thus, fluids and electrolytes could be replaced adequately⁴. Should her high output fistula not being adequately managed, it could have posed a high risk to the patient of developing fluid and electrolyte imbalance as well as metabolic acidosis⁷.

eakin® Seal

The dressing procedure for Amanda involved the application of large eakin **Cohesive**® seals to protect her peri-fistula skin and the application of the eakin Wound Pouch™ to contain the fistula effluent and ensure correct fistula output measurement. The large eakin **Cohesive**® seal were applied around Amanda's peri-fistula skin and the abdominal creases (Figure 5) to protect her skin, increase pouch wear time and prevent leakage⁷. The large eakin **Cohesive**® seal was chosen as it was able to cover a large area of peri-fistula skin, used on complex skin problems and uneven skin surfaces. The large eakin **Cohesive**® seal could also absorb the moisture from the peri-fistula skin and protect it from further moisture related skin damage⁷.



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Care Solutions

Procedure of eakin Wound Pouch™ change

A visual and detailed written step-by-step instruction for the use of the eakin Wound Pouch™ was placed at patient's bedside folder to assist the ward nurse performing the procedure correctly.



STEP 1:

Remove old eakin Wound Pouch™ with eakin® Release adhesive remover (Figure 2).

Figure 2: Wound pouch removal



STEP 2:

Clean fistula and peri-fistula skin with warm water and suction the faecal output with Yankauer suction tip (Figure 3). Dry and apply barrier wipes around peri-fistula skin for protection.

Figure 3: Fistula and peri-fistula skin's cleaning procedure



STEP 3:

Apply stoma powder around peri-fistula skin if excoriated (Figure 4)

Figure 4: Welland stoma powder application



STEP 4:

Apply large eakin® Cohesive® seal on peri-fistula skin and at the abdominal crease area

Figure 5: eakin® seal's application



STEP 5:

Cut eakin Wound Pouch™ into the correct wound size and apply it horizontally. Connect eakin Wound Pouch™ to the free drainage bag (Figure 6)

Figure 6: eakin Wound Pouch™ application



STEP 6:

Place both hands on the eakin Wound Pouch™ for approximately 5 minutes to enhance a longer adhesion (Figure 7)

Figure 7: eakin Wound Pouch™

Outcome

The eakin Wound Pouch™ could last up to 7 days. Amanda stated that she felt more comfortable due to infrequent pouch changes. The extended wear time of the eakin Wound Pouch™ had promoted patient's comfort, drainage and odour containment, and improved peri-fistula condition³. The use of eakin Wound Pouch™ had minimised the psychological trauma that Amanda would previously experience during conventional wound dressing changes. The combined application of Welland stoma powder and large eakin Cohesive® seal caused the excoriated peri-fistula skin to heal. The Stomal Therapy Nurse provided continuous in-service education and supervision on weekly wound changes to Amanda. This ensured the improvement of nursing staff's skills, experience and confidence in the correct application and overall management of the eakin Wound Pouch™. Amanda was discharged home after 303 days of hospitalisation. On discharge, her sister and NDIS support worker were educated on how to empty the fistula effluent, record fistula output, and connect free drainage bag to the eakin Wound Pouch™. Amanda was reviewed weekly by the general surgical team and the Stomal Therapy Nurse through the outpatient Ambulatory Care Unit, to ensure continuous monitoring of fluids, electrolyte and eakin Wound Pouch™ management.

Conclusion

In conclusion, ECF is a complex surgical condition representing a significant challenge to both medical and nursing staff. Successful management and control of a high output ECF can be very difficult⁴.

The author learned that it was important to involve the multidisciplinary team to manage a high output ECF effectively. In addition, Stomal Therapy Nurse had played a vital role in assisting patient to choose the most appropriate appliances such as the eakin Cohesive® seal and the eakin Wound Pouch in order to manage the high output ECF. The correct selection of the eakin Wound Pouch™ also assisted patient to cope with her complicated fistula during a long and challenging period of hospitalisation. In this case study, the eakin Wound Pouch™ could be changed on a weekly basis, thus, enhancing patient's comfort and contributed to improving her quality of life.

The care plan of using the eakin Wound Pouch™ was successfully continued until Amanda was discharged and her fistula was managed effectively at home. The author also learned that the benefit of the eakin Wound Pouch™ included protecting peri-fistula skin, controlling odour and allowing an accurate record of the fistula output.

The frequency of the wound pouch change could depend on the seal obtained, the location of fistula, the contour of the peri-fistula skin and the type of output. The author believed that education on fistula management and eakin® wound product should be provided to the nursing staff, patient's carer and NDIS support worker to ensure continuity of care.

References

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