

Novel Hinge Technique with Modified Trough to Pouch Enterocutaneous Fistulas

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Background:

This case study details a new pouching method for a patient with multiple non-stomatized fistulas status post fistula takedown with recurrent fistulas, with cumulative high output, 1.5 to 2.5 liters per day, in a wound base with unique horizontal topography that fluctuates with movement. This particular fluctuating topography is located directly above the mons pubis, in an obese patient without fascia. Medical management included fistula take down, anti-diarrheal medications, and failed to eliminate the fistulas or decrease output. Previous pouching solutions failed including large singular wound manager pouches with skin protectant, paste, and moldable skin barriers and modified trough technique (Emory, 2018; Hoedema & Suryadevara, 2010; Hocevar, 2008; Nirmal, 2017). These pouching solutions, with and without low intermittent suction, resulted in leakage within 24 hours with any significant movement that caused hip flexion. Leakage occurred predominantly in the lateral deep divots of the wound base. Previously the patient was bedbound at home for 1.5 years due to daily pouch leakage and complete pouch failure.



Photo 1. Wound with enterocutaneous fistulas, two exuding effluent s/p STSG on R side taken 9/10, and on 9/23/20 measured 9 x 20 cm x flush.

Objectives:

- Design pouch to give patient 2-3 day wear time without leaks or needing to patch.
- Design pouch using low-cost materials that the patient can afford and are easy to acquire.
- Design pouch to contain odor and feculent effluent.
- Design pouch that does not leak with flexing of the hips, allowing for patient to get out of bed and perform ADLs independently.

The Technique:

The "hinge" portion solved the leakage issues in the lateral corners which occurred with hip adduction and the subsequent abduction causing the moldable skin barrier to adhere and lift, creating an opening which effluent could leak through. The "hinge" is created by filling the central deficit with a folded moldable skin barrier to make a flat pouching surface then using a bead of paste to encircle the moldable skin barrier. The moldable skin barriers that were used to rim the wound base would then contact the paste and not the folded moldable skin barriers. This prevented the moldable skin barriers from adhering to one another and lifting off the patient's skin with adduction and abduction.



Photo 2. Hinge technique.

The "modified trough" portion refers to the rest of the wound barrier and actual pouch construction. Skin protectant was applied to all intact periwound epithelium. The wound was then rimmed with 1-2 layers of moldable skin barriers placed side by side. The wound base inside the moldable skin barriers was rimmed with paste. Clear flexible plastic adhesive products were then overlapped to create a pouch. One to two one-piece ostomy pouches were then applied over the clear plastic adhesive product which had the appropriately sized hole(s) cut to match the pouch opening(s). These openings in the clear plastic adhesive were cut prior to their application. Hydrocolloid cut to fit was then applied over any portions of the exposed "hinge" and often was cut into strips to rim the pouch for extra support.



Photo 3. Hinge Technique with Modified Trough Prior to Pouch Application.



Photo 4. Hinge technique with modified trough post pouch application.

WOC nurse educated patient's significant other how to create and apply pouch as well as incrementally shrink the size of the wound by applying paste slightly over wound base at the rim with each application. This allowed for new epithelium to creep across underneath the paste and be shielded from the bowel effluent resulting in gradual wound contraction with no leak pouch construction.

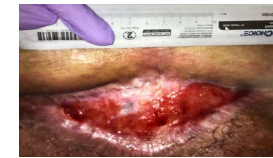


Photo 5. Wound without fistulas measuring 5 x 14 cm x flush.

Results:

- The patient is now able to get out of bed, walk, and perform ADLs independently including taking care of the grandchildren.
- This pouching technique yielded consistent wear time of 3 days inpatient and outpatient without leaks. No patches needed.
- Pouching technique replicated by family allowing patient to discharge from hospital.
- Increased patient satisfaction, independence, and quality of life.
- Decreased supply volume and cost requirement while managing effluent and odor as well as patient anxiety of having to wear leaking large pouches.
- Patient now has no wound nor enterocutaneous fistulas due to this pouching technique in combination with the fistula take down, anti-diarrheal regimen, TPN, and diet adherence.

Future Research/Application: Recommend utilizing this technique on more patients and anatomical areas that have the added component of adduction and abduction that require pouching.

Conclusion:

In sum, the novel hinge technique with a modified trough pouching system is low cost, effective in containing effluent, and particularly suited to allow for adduction and abduction facilitating movement and independence. While this technique is not a one step process, it is possible to teach family to apply which facilitates hospital discharge.

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