

Case Study: Pediatrics Wound Healing with Topical Compounded Formulations

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INTRODUCTION:

A 6-year-old girl diagnosed with gastroparesis required a gastrostomy tube (G-tube) to feed nutrition through the abdomen directly into her stomach. Over time, the application site of the G-tube became sensitive and painful. Despite daily cleansing, the skin cracked and a non-infective chronic inflammation developed which was difficult to manage by the caregiver. Several over-the-counter medications were applied without success. The local compounding pharmacist discussed personalized treatment options with her pediatrician and a wound healing topical compounded formulation was prescribed to be applied daily (as needed) for a period of 30 days: Cholestyramine 5% in Spira-Wash® Gel.

METHOD:

The research instrument used in this case study is the validated questionnaire: Children's Dermatology Life Quality Index (CDLQI, cartoon version - Trouble with Skin). A commercial licence (ID CUQoL2128) was requested and granted for the purposes of this individual case study. The purpose of this questionnaire was to evaluate the treatment effectiveness and its impact on the patient's quality of life. In addition, the caregiver was also asked to take digital photographs of the G-tube application site, before and after treatment. Consent was obtained by the caregiver for publication of this case study.

Rx	
Cholestyramine Resin USP	5%
Zinc Oxide USP	5%
Base, PCCA PracaSil-Plus	q.s. 100 g

Table 1.
Compounded formulation for wound healing topical gel.

PCCA PracaSil-Plus



PCCA Spira-Wash Gel



RESULTS AND DISCUSSION:

Following two weeks of topical treatment, the inflammation cleared and the skin recovered so the caregiver stopped the application of the Cholestyramine 5% in Spira-Wash® Gel. However, within one week, the inflammation returned due to the continuous movement of the abdominal area and scratching of the G-tube site by the child. The caregiver continued the treatment until full recovery again, and a second wound healing topical compounded formulation was prescribed for protection of the skin post-healing (Table 1), to be applied twice a week. The active pharmaceutical ingredients (APIs) in this second compounded formulation are cholestyramine and zinc oxide, both thoroughly referenced in the literature as wound healing agents. PracaSil® -Plus is a proprietary anhydrous silicone base developed to be applied topically in scar and wound management therapy as a base for incorporation of different APIs indicated in skin regeneration and healing. Before treatment, the CDLQI total score was 20 which means that the patient's condition had a very large effect on her quality of life. The areas that showed greater impairment were symptoms and feelings, activities of daily living, and treatment. After treatment with the personalized topical medications, the CDLQI decreased substantially to 7 which means that the G-tube nutrition had now only a moderate effect on the patient's quality of life. The before and after treatment photographs (Figures 1a and 1b) show a full recovery of the inflammation around the G-tube application site.



1a



1b

Figures 1a and 1b. Before (1a) and after (1b) treatment photographs of the G-tube abdominal application site.

CONCLUSION:

Complications associated with G-tube nutrition may have a profound effect on a patient's quality of life, especially in pediatrics. A chronic wound on the G-tube application site, irresponsive to over-the-counter medications, was successfully treated with topical compounded medications. This case study demonstrates the value of personalized medications in current therapeutics.