

Brief Communications

## Effect of glycerin water solution on skin problem around a gastric fistula

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### Introduction

A skin problem may occur in neighboring skin by mechanical irritation in patients having a gastric fistula. In the ward where we work, 28 patients of the total 55 have a gastric fistula. Six of 28 patients have a skin problem around the gastric fistula. Irrigation using tepid water promotes a dry state of the skin, but does not seem to improve skin lesions. The drying induces a decrease of the barrier function, and causes the skin problems. Also, leaking from the gastric fistula of the tube feeding causes skin problems. A glycerin water solution is superior in moisture retention, and there is little stimulation of the skin. We prevent reabsorption to the skin of the omission of gastric fistula if we can maintain moisture retention with a glycerin water solution, and can expect reduction of the chemical irritation. We examined the effect of a glycerin water solution on skin problems around the gastric fistula.

### Subjects and methods

The study period was August 2015 until March 2016. The subjects were six patients with skin problems around the gastric fistula. Their agreement was obtained for this study. This study obtained the approval of the Ethical Review Board of our hospital

We have considered the privacy of the patients. When we announce it in a society or an article, it prevents encoding a personal name and from identifying it. We explained the purpose of the study to patients or their

family using documents and figures. After the contents of these documents were properly understood, the patients or the family signed a consent form. We signed on behalf of the patients who had difficulty in giving their signature by vicarious writing with the approval of the person. We explained the benefits and the disadvantages of the study to the patients. We explained that participation in the study was voluntary and patients could withdraw at any time. We explained the following irrigation methods and associated procedures to all the staff.

- 1) The irrigation was performed twice a day (10:00 and 15:00).
- 2) We made a 5% glycerin water solution (40 degrees Celsius).
- 3) The attachment of the waste material is not eliminated forcibly.

We evaluated the skin situation of the patients before and after the treatment using a grasp gastric fistula evaluation scale. The evaluation was carried out before and after irrigation every week. We conducted the evaluation for three months. The gastric fistula evaluation scale was based on the "PEG assessment handbook" which the Shiga PEG care network supervised.

### Results

Patient 1 had a red area of around 8×8cm before treatment. The skin around the gastric fistula was in a chronically wet state due to the omissions from the gastric fistula. Eight weeks later, the redness was reduced to

7×7cm. Bleeding and the decoction disappeared. The gastric fistula evaluation scale was improved from five points to three

points. We show the course of four patients in Figure 1 and Figure 2.

**Discussion**

Reduction of redness and erosion was found for four patients with skin problems around the gastric fistula. However, there was a change of medicine for external application in a certain patient during the study period. In a certain patient, an alimentary leak from the gastric fistula might be terrible and the number of irrigation might become higher than twice a day. Therefore, this study was not able to use the same intervention method with all patients. Also, the number of

patients in this study was only four. However, there was a possibility that the moisturizing effect with the glycerin water solution was effective for skin protection. One patient said, "the irrigation with the glycerin solution was comfortable". There were no patients who described any unpleasantness. In conclusion, the glycerin water solution treatment was safe and was effective for treating skin problems around the gastric fistula.

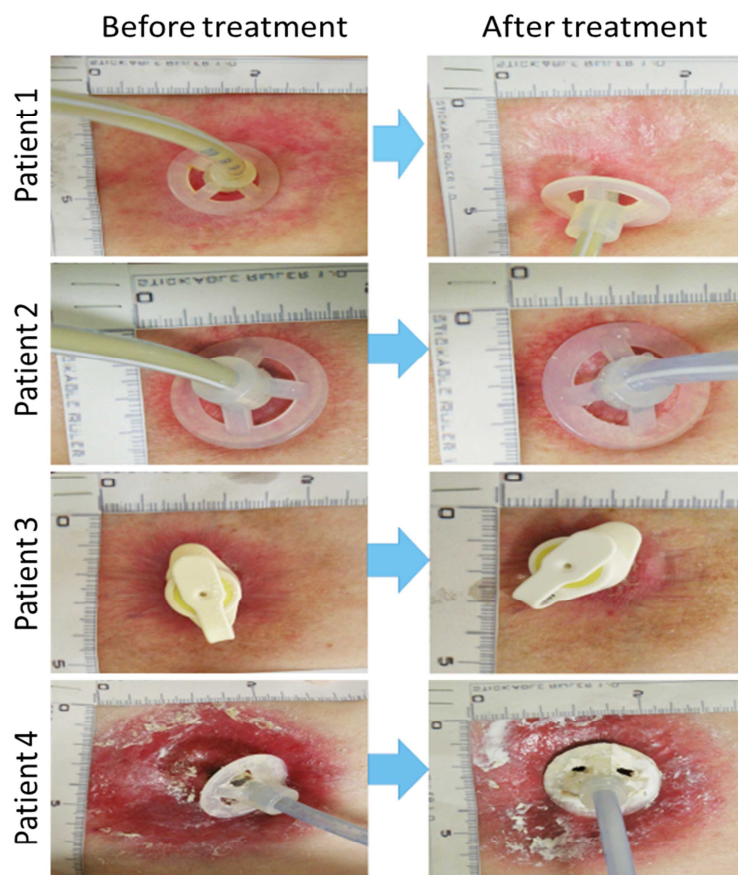


Figure 1. Appearance of skin lesions around the gastric fistula in 4 patients.

	Patient 1		Patient 2		Patient 3		Patient 4	
	Before	After	Before	After	Before	After	Before	After
Erythrogenic degree	severe	mild	severe	mild	severe	mild	mild	mild
Erythrogenic size (mm)	8x8	7x7	4.5x4	4x4	6x5	5x5	8x7	8x6.5
Surface irregularity	Inflammation	Inflammation	Inflammation	Inflammation	Inflammation	smooth	Inflammation	Inflammation
Dry degree	dry	moist	moist	moist	moist	moist	moist	moist
Total point	5	3	4	3	4	2	5	5

Figure 2. Changes of skin lesions around the gastric fistula in 4 patients.