An aquarium pump can generate a negative pressure which is cheap, efficacious, and safe in securing skin grafts.

A Case Series: Split Thickness Skin Grafting Via Continuous, Low Negative Pressure Wound Therapy (NPWT) Using Aquarium Pump- CLMMRH Experience

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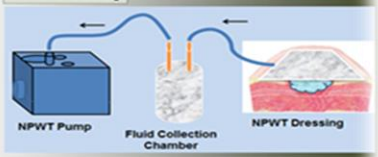
NPWT:

a therapeutic technique using a vacuum dressing to promote healing in wounds . The therapy involves the controlled application of sub-atmospheric pressure to the local wound environment, using a sealed wound dressing connected to a vacuum source.

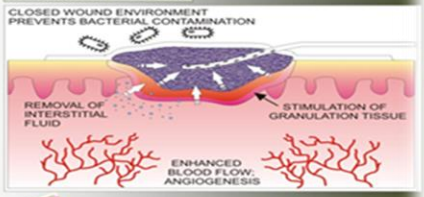
NPWT Set up



OBJECTIVE:

To determine the efficacy of continuous, low pressure NPWT(-70 to -80mmHg) using aquarium pump in securing STSG.

Mechanism of Action



PLAN B

PLAN A

METHODOLOGY:

A single-centred, consecutive case series study involving all trauma patients with soft tissue defects in the extremities.

RESULTS:

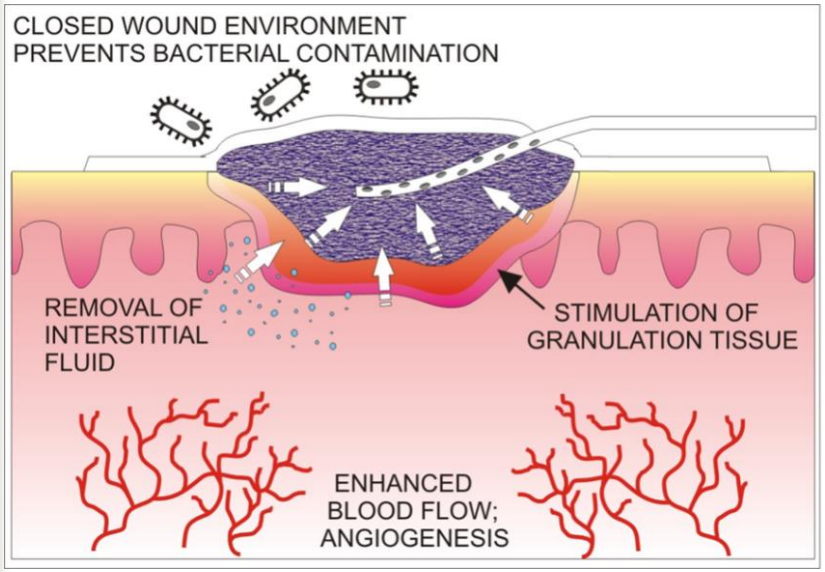
Nine subjects gathered with a mean age of 29. Most wounds are located in the lower extremity with a mean size of 98.28 cm2 (range: 12-297 cm2). Graft has a mean size of 98.28 cm2 (range: 12-297 cm2). Graft-take after 5 and 9 days post-STSG did not vary with a mean of 99.34%.

WOUND SIZE:

Patient	1	2	3	4	5	6	7	8	9	MEAN	STANDARD DEVIATION
Wound size (cm2)	58.5	297	144	18	36	144	55	120	12	98.28	85.22
Graft size (cm2)	58.5	297	144	18	36	144	55	120	12	98.28	85.22
Graft-take(%) 5 days post-STSG	96.2	100	100	100	98.6	100	99.2	100	100	99.34	1.20
Graft-take(%) 9 days post-STSG	96.2	100	100	100	98.6	100	99.2	100	100	99.34	1.20

CONCLUSION:

In this study, the low cost method of delivering NPWT was proven as an efficacious, safe, and promising technique in securing skin grafts.



STATEMENT OF THE PROBLEM

Inconsistent outcomes of split thickness skin grafting on traumatic wound defects.

GENERAL OBJECTIVE

To determine the efficacy of continuous, negative pressure wound therapy(-70 to -80mmHg) using modified aquarium pump in securing skin grafts.

SPECIFIC OBJECTIVES

To determine the graft-take 5 and 9 days post-skin grafting.

To determine the infection rate in post-skin grafting.

METHODOLOGY

case series study

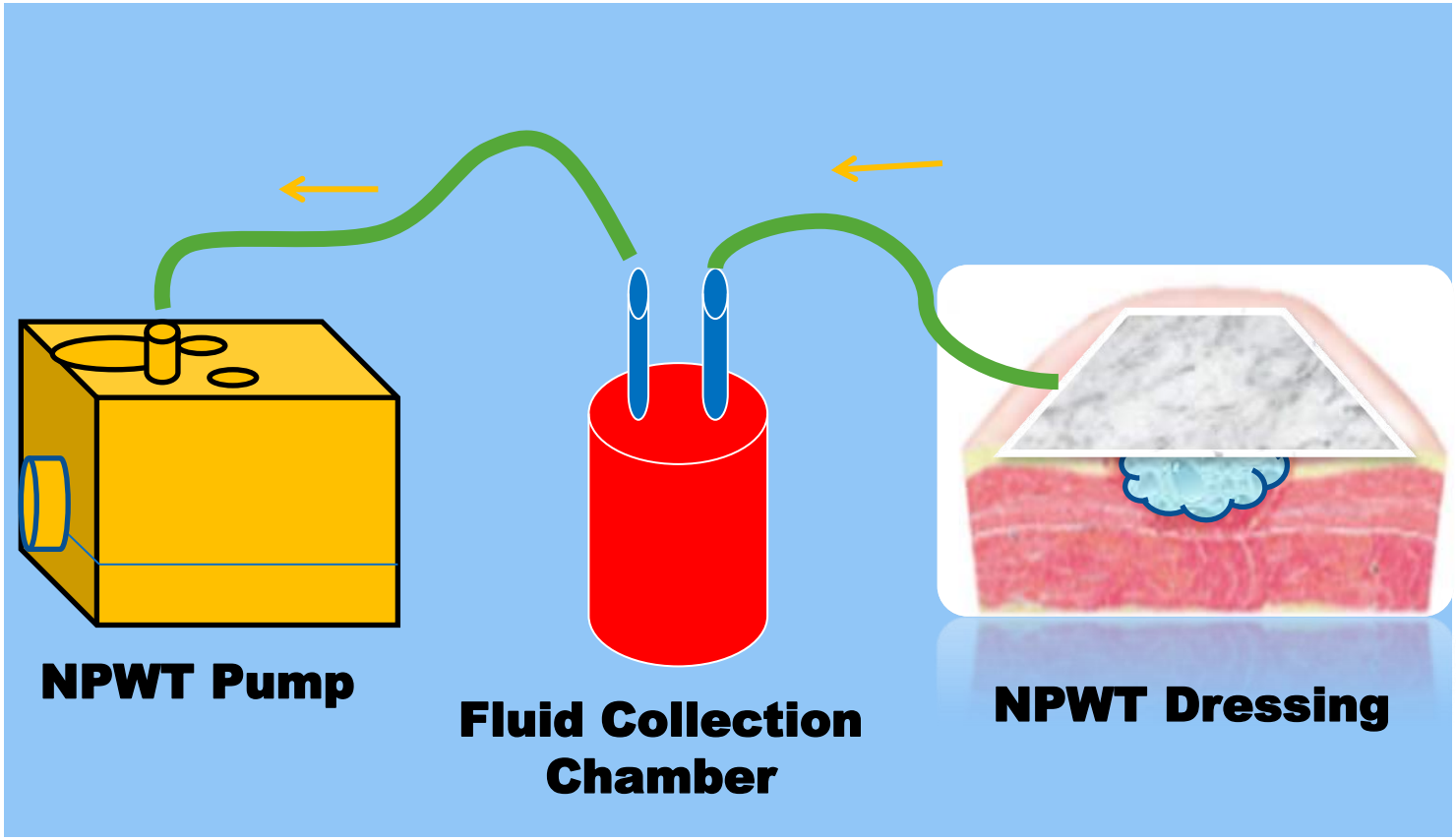
Locale: Corazon Locsin Montelibano Memorial Regional Hospital, Bacolod City, Negros Occidental from January 2010 to July 2012

All trauma patients with soft tissue defects in the extremities(9 subjects)

PLAN A

PLAN B

NPWT Set-up



Demographics

Patient	1	2	3	4	5	6	7	8	9	Mean	Standard Deviation
Age (yrs)	19	44	32	36	17	9	36	52	16	29.00	12.94
Duration of treatment (days)	18	23	30	18	18	27	17	15	18	20.44	4.54
Duration of NPWT (days) during STSG	5	5	5	5	5	5	5	5	5	5	0
Wound site	Hand	leg	Leg	Hand	Arm	Leg	Foot	foot	leg		
Infection rate	None	none	None	none	none	None	none	none	none		
Repeat STSG	None	none	None	none	none	None	none	none	none		
Duration of Pre-graft NPWT	9	9	9	9	none	9	9	none	9		
Co-morbidities	None	none	None	none	none	None	none	none	None		
Fracture	4th and 5th meta carpals	Type 3A, tibia			Type 3A, humerus	Type I, tibia					

Wound Size

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CONCLUSION

In this study, the low cost method of delivering NPWT was proven as an efficacious, safe, and promising technique in securing skin grafts.

RECOMMENDATION

This study recommends a greater sample size to improve the strength of this study. Also, a prospective comparative study between NPWT and bolster dressing to secure the graft is also recommended.

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