

A BUSY METROPOLITAN WOUND CARE CENTER HAS SUCCESSFULLY INCORPORATED A ROLL ON TOTAL CONTACT CAST SYSTEM TO HEAL CHALLENGING FOOT WOUNDS

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OBJECTIVES

1. This case series will describe 14 patients that were treated with Total Contact Casting (TCC) to heal their challenging foot ulcers.
2. This case series will illustrate how integrating a scientifically proven modality such as TCC can lead to positive outcomes in healing diabetic foot ulcers in an outpatient wound care setting.

PROBLEM

Over 29 million Americans have diabetes according to ADA 2012 statistics.¹ Foot complications are the most common reason for patients with diabetes to be admitted to the hospital. Neuropathic foot ulcerations precede 85% of all non-traumatic lower extremity amputations.² There is a 68% mortality rate 5 years post lower extremity amputation.³

Despite this overwhelming evidence, TCC is considerably under utilized.¹ According to Fife's recently published data from 96 wound care clinics, among the wound care clinics that use TCC, 96.3% of "TCC eligible ulcers" did not receive TCC.⁴ There are many reasons that have been given for the underutilization. In contrast to the majority, this case series is representative of a busy metropolitan wound care clinic that has successfully incorporated a Roll on TCC System[®] into practice to heal challenging foot wounds including TMA post-surgical wounds, heel wounds, toe and plantar neuropathic wounds as well as for Charcot arthropathy.

METHODS

This series describes 14 patients with diabetic foot wounds. The wounds ranged in chronicity from 4 weeks to 1 ½ years prior to being treated with TCC. The clinic staff were educated on the use of the Roll on TCC Cast System. Wound assessment, debridement and topical wound therapy were used based on moist wound healing principles.⁵ Foot wounds and Charcot foot arthropathy⁶ were successfully off-loaded with the Roll on TCC System to produce optimal patient outcomes.

RESULTS/CONCLUSION

All 14 patients achieved complete wound closure after implementation of TCC. Several wounds were healed in 4-6 weeks. More complicated wounds took longer to heal as would be expected. This case series demonstrates successful treatment regimens involving neuropathic and other complicated foot wounds treated with the Roll on TCC System.

References: 1. Fife CE, et al. Diabetic Foot Ulcer Off-Loading: The Gap Between Evidence and Practice. Data from the US Wound Registry. *Advances in Skin and Wound Care* Volume 27, No 7, 2014. 2. Jakola A, Weber A. Current Concepts in Total Contact Casting for DFUs. *Podiatry Today* April 2014. 3. Armstrong DG et al. Guest editorial: are diabetes related wounds and amputations worse than cancer? *Int Wound J*. 2007; 4(4):286-7. 4. Armstrong DG et al. Off-loading the diabetic foot wound. *Diabetes Care* 24:1019-1022, 2001. 5. Bryant RA, Nix DP. *Acute and Chronic Wounds: Current Management Concepts*. 4th Edition. St. Louis, MO: Mosby Elsevier, 2012. 6. Rogers LC, et al: The Charcot Foot in Diabetes. *Diabetes Care* 34:2123-2129, 2011.

TCC-EZ[®] Total Contact Casting System, Derma Sciences Inc., Princeton NJ

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PATIENTS REPRESENTED IN THIS CASE SERIES

As illustrated in this chart, these wounds took an average of 6 weeks to heal. Some wounds took a considerably shorter or longer period of time to heal due to specific co-morbidities and other personal patient variables. This could be another area for further investigation. It is also noteworthy that diabetic foot ulcers are not specific to the elderly, in fact the majority of the patients were in their forties and fifties with the youngest being thirty-eight years old.

Patient	Age	Gender	Diabetes	Foot Wound Location	Size of Wound (Length x Width x Depth)	Weeks to heal
A	38	F	Yes	Left Metatarsal Head	0.4cm x 0.3cm x 0.2cm	1
B	52	F	Yes	Right Great Toe	0.1cm x 0.1cm x 0.5cm	1
C	45	M	Yes	Left Plantar Foot	1.4cm x 0.6cm x 2.5cm	2
D	46	M	Yes	Left Lateral Foot	0.7cm x .03cm x 0.4 cm	3
E	46	M	Yes	Right Plantar Foot	2.1cm x 2cm x 0.3cm	5
F	56	M	Yes	Left Plantar Foot	1.5cm x 1.2cm x 0.4cm	5
G	47	M	Yes	Left Great Toe	0.9cm x 0.8cm x 0.2cm	5
H	69	M	Yes	Left Great Toe	1cm x 0.6cm x 0.2cm	6
I	68	F	Yes	Left Plantar Foot	1cm x 0.9cm x 0.4cm	7
J	49	F	Yes	Right Heel	4cm x 2cm x 0.7cm	8
K	58	F	Yes	Left Medial Foot	5.3cm x 2.5cm x 0.6cm	8
L	58	M	Yes	Left Heel	1.3cm x 1cm x 1cm	8
M	69	F	Yes	Left Plantar Foot	4.5cm x 1cm x 0.9cm	9
N	56	M	Yes	Right Transmetatarsal Amputation	2.4cm x 1cm x 0.6cm	12

APPLICATION OF ROLL ON TCC SYSTEM

The clinical staff at this wound care center have incorporated casting so well that even casting a post TMA patient, as seen below, is not difficult or a time consuming process. Each component of application and removal only takes a matter of minutes.



This TMA patient's wounds was dressed and an extra foam dressing was applied to the patients shin area.



The stockinette has been applied.



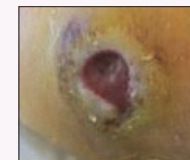
The patient was turned to a prone position and the doctor is shown here rolling on the cast.



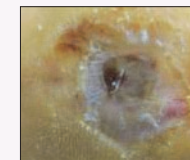
The patient is ready to go with dried cast and boot for ambulation.

PATIENT F

56 year old male with a Charcot deformity with a wound on the left plantar foot. Healing achieved after 5 weeks off-loading with Roll on TCC system.



Before



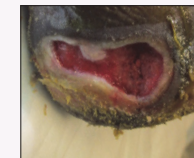
After

PATIENT J

49 year old female with neuropathic heel wound. Healing achieved after 8 weeks of off-loading with Roll on TCC system.



3.26.14



4.24.14



5.28.14

PATIENT K

58 year old female with medial foot wound. Healing achieved after 8 weeks off-loading with Roll on TCC system. The wound had increased in size prior to the application of TCC.



1.29.14



3.12.14 – 1st TCC application



5.07.14

PATIENT N

56 year old male s/p ostectomy of the 4th left metatarsal. Wound healed in 12 weeks with off-loading with Roll on TCC System.



4.29.14



7.22.14