

HELPING TO SAVE LIMBS – ONE TOTAL CONTACT CAST AT A TIME

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PURPOSE

To illustrate the use of Total Contact Casting* (TCC) to facilitate wound closure in patients with diabetic foot ulcers. Diabetes causes 56% to 83% of the estimated 125,000 lower extremity amputations performed annually¹. Off-loading of the ulcer area is extremely important for the healing of plantar ulcers.

OBJECTIVE

To demonstrate the healing of DFUs with TCC in a shorter time frame and with higher percentage of healing than usual DF wound care without the off-loading component .

METHODOLOGY

- Case 1:** 62 year old male with history of DM, hepatitis, HTN, and osteomyelitis with right TMA presented with right TMA wound of 2 years duration. Treatment included TCC, debridement and human fibroblast-derived dermal substitute with wound closure achieved in 15 weeks. Non-compliance resulted in re-opening of wound and with TCC and debridement; closure was achieved in 11 weeks.
- Case 2:** 55 year old male with history of DM, HTN, hyperlipidemia, and amputation of left great toe presented with right plantar foot wound of 3 weeks duration. Treatment included TCC and debridement with wound closure achieved in 6 weeks.
- Case 3:** 52 year old male with history of DM, HTN, hyperlipidemia, and I&D right plantar foot abscess presented with non-healing right foot ulcer of 4 weeks duration. Treatment included TCC, debridement and human fibroblast-derived dermal substitute; closure was achieved in 7 weeks.
- Case 4:** 64 year old male with history of DM, CHF, CAD, PVD, CVA, HTN, hyperlipidemia, and I&D for abscess of left plantar foot wound with osteomyelitis presented for HBO treatments. Wound treated with HBO, debridement and human fibroblast-derived dermal substitute, but patient was non-compliant with conventional off-loading and wound was not responding. TCC added to treatment regimen and closure was achieved in 3 weeks.

RESULTS

All patients demonstrated improved healing with TCC. The patients included in this case study series all achieved complete closure by discharge from the wound care center.

CONCLUSION

Inadequate off-loading of the DFU has been proven to be a significant reason for the delay of ulcer healing.

The most effective method of off-loading, which is also considered to be the gold standard, is the TCC². No prefabricated device is likely ever to match its combination of protection completely from both normal and shear forces, and it approaches as near to a guarantee of patient compliance as any off-loading technique can. Recent advances in wound dressings extend the utility of the total contact cast rather than replace it³.

TCC resulted in healing of difficult DFU's and is cost effective. Average length of treatment was 8 weeks.

References: 1. Alexiadou, K., & Doupis, J. (2012, April 20). Management of Diabetic Foot Ulcers. Retrieved from Springlink.com: www.diabetestherapy-open.com 2. Guyton MD, G. P. (2004, September Volume 3, Issue 3). The Total Contact Cast: Indications and Technique. Techniques in Foot & Ankle Surgery, pp. 186-191. 3. Thomas Hess BSN RN CWOCN, C. (2008, Volume 21 Number 6). Diabetic Foot Ulcers. p. 296.

*TCC-EZ® Total Contact Casting System, Derma Sciences, Inc., Princeton, New Jersey.
**Dermagraft®, Shire Regenerative Medicine, Inc, San Diego, California.

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CASE 1

2011



8.24.11 – 2.5 cm x 1.9 cm x 0.7 cm



9.14.11 – 1.6 cm x 1.1 cm x 0.2 cm



10.5.11 – 0.9 cm x 0.5 cm x 0.2 cm



12.7.11 – healed

2012



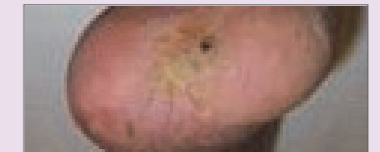
10.18.12 – 4 cm x 3 cm x 0.4 cm



11.2.12 – 4 cm x 3 cm x 0.2 cm



11.20.12 – 1.5 cm x 1.5 cm x 0.2 cm

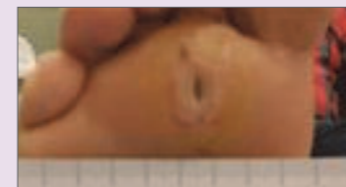


12.31.12 – healed

CASE 2



1.2.12 – 0.8 cm x 0.2 cm x 0.4 cm



1.13.12 – 0.6 cm x 0.2 cm x 0.1 cm

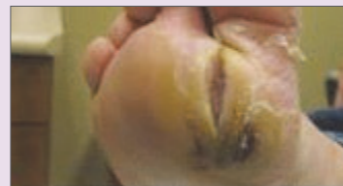


1.27.12 – 0.4 cm x 0.1 cm x 0.1 cm



2.13.12 – healed

CASE 3



7.27.12 – 3 cm x 0.6 cm x 0.4 cm



8.20.12 – 2.8 cm x 0.4 cm x 0.3 cm



9.7.12 – 0.9 cm x 0.3 cm x 0.2 cm

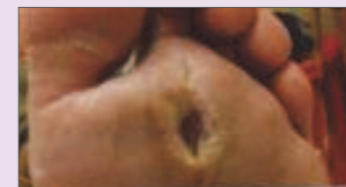


9.28.12 – healed

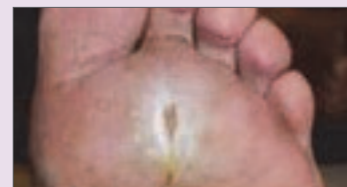
CASE 4



4.9.13 – 2.5 cm x 0.7 cm x 0.7 cm



6.3.13 – 1 cm x 0.4 cm x 0.3 cm



6.10.13 – 0.8 cm x 0.3 cm x 0.2 cm



6.24.13 – healed