

TOTAL CONTACT CAST: USE IT EARLY AND OFTEN

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PURPOSE

Total Contact Cast (TCC) is utilized by only 1.7% of wound centers (WC) treating diabetic foot ulcers (DFUs); 74% of WC use it with < 25% of their appropriate patients.¹ At our WC, the performance improvement process identified the need for more treatment options addressing off-loading of DFU's. A formal report was submitted to Products Standardization Committee stating:

- a) there was a lack of effective off-loading in our treatment arsenal and
- b) current Days to Heal (DTH) for DFUs surpassed recommended company benchmarks.

METHODOLOGY

Case #1 -The patient's DFU stalled at 10% volume reduction at 164 weeks despite standard of care including debridement, bioburden management and removable off-loading devices. Four weeks after initiating Roll on TCC System*, wound volume decreased 99%.

Case #2 - Patient presented with an 8 week old plantar Wagner 3 DFU. After resolving an infection, Roll on TCC System was initiated. Wound closed 4 weeks later.

Case #3 - Patient presented with a 12 week old dorsal great toe Wagner 2 DFU. Roll on TCC System was initiated and the wound closed in 4 weeks.

RESULTS

A review of all DFUs treated in 2013 prior to beginning TCC indicated an average of 140 DTH. From January 1 to May 31, 2014, after utilizing Roll on TCC System on appropriate patients, the overall days to healing decreased to only 97.

CONCLUSION

Since TCC was the only new modality introduced in 2014 for the treatment of DFUs, we concluded the days to healing decrease of 42 days directly resulted from implementing Roll on TCC System as our standard of care.

References: 1. S Wu, J Jensen, A Weber, D Robinson, D Armstrong. Use of pressure offloading devices in diabetic foot ulcers do we practice what we preach? Diabetes Care. Nov 2008;31(11): 2118-2119.

* TCC-EZ® Derma Sciences, Inc. Princeton, NJ

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CASE 1

A 51 year old female with past medical history of Type 2 diabetes with neuropathic manifestations, morbid obesity and prior DFUs presented with a 4.6 cm x 5.1 cm x 0.8 cm Wagner 3 ulcer of the left great toe eventually requiring amputation in 2011. The surgical site failed to heal and continued to be treated in our Hospital Based Outpatient Wound Center for 3 years with debridement, moist wound healing, negative pressure wound therapy (NPWT), management of bioburden, glycemic control and a forefoot off-loading wedge shoe.



11-15-2013

The wound measured 2.2 cm x 3.4 cm x 0.8 cm. NPWT was initiated two weeks prior. The patient reported she removed off-loading shoe for many hours during the day and ambulated with house slippers.



12-6-2013

The wound edges continued to be scallous between visits with flat shiny granular wound base measuring 4.0 cm x 3.0 cm x 1.0 cm. Treatments continued to include debridement and NPWT. She also was treated for a Wagner 3 DFU on contralateral foot. After 164 weeks in treatment, the wound remained unchanged. Recommendations were made to off-load the wound.



3-10-2014

TCC was approved for use and was initiated on 3/7/14. On 3/14/14 new epithelial tissue was noted and the granulation tissue was no longer flattened and shiny after only 3 days with Roll on TCC System.



8/22/14

After 3 years the wound healed in only 24 weeks after initiating the Roll on TCC System. The wound converted with an epithelial bridge and some callousing of edges of larger wound.

CASE 2

This 57 year old male has a past medical history of Type 2 diabetes, HTN, hyperlipidemia, CAD, renal insufficiency, osteoarthritis and GERD. He worked full time as a plant manager and his duties required prolonged periods of standing and walking. He presented to the WC with a Wagner 2, left great toe, plantar surface DFU 8 weeks in duration. The wound measured 0.9 cm x 0.6 cm x 0.4 cm. ABI was 0.92



3-25-2014

The wound was debrided, followed by silver alginate and Roll on TCC System was applied.



4-1-2014

One week after the Roll on TCC System was implemented the wound volume decreased by 0.3 cm². Excisional debridement followed by silver alginate and TCC.



4-23-2014

Patient's wound healed after 4 weeks of treatment including debridement, moist wound healing and off-loading with Roll on TCC System, just in time for the patient to dance at his son's wedding. After closure he was fitted for custom molded diabetic shoes.

CASE 3

A 62 year old male with diabetes and neuropathic manifestations, primary pulmonary hypertension and obstructive sleep apnea was admitted to our wound program. The patient was treated at another WC for approximately 8 weeks.



3-19-14

Left plantar DFU, 12 week duration measuring 1.0 cm x 1.0 cm x 1.0 cm. Clinical evidence of cellulitis so a treatment plan was initiated including oral antibiotics, debridement, silver alginate and dry protective dressing daily. He was provided with instructions to off-load, but the patient refused a walking boot or any other forms of off-loading at this time.



4-16-14

The wound measured 1.0 cm x 1.0 cm x 0.6 cm. The patient was non-compliant by not using any form of off-loading. He understood the rationale for off-loading at this time, therefore he agreed to the application of the Roll on TCC System. The wound was debrided and a silver alginate foam dressing were applied followed by the application of the Roll on TCC System.



5-14-14

The Roll on TCC System was changed weekly. The wound edges and base were debrided at each Roll TCC System application, along with silver alginate and foam dressing. The wound was healed in 4 weeks after implementation of Roll on TCC System.