Total Contact Cast: Use It Early and Often

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Purposes

Total Contact Cast (TCC) is utilized by only 7.7% of wound centers (WCs) treating diabetic foot ulcers (DFUs). 29% of WCs utilize < 25% of their appropriate patients. 1 At our WC, the performance improvement process identified the need for more treatment options addressing off-loading of DFUs. 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.

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.

Methods

Case 1 – The patient is a 51 year old female with past medical history of Type 2 diabetes, HTN, hyperlipidemia, CAD, renal insufficiency, osteoarthritis and GERD. The wound full time as a plant manager and his duties required prolonged periods of standing and ambulation. The patient refused a walking boot or any other forms of off-loading at this time.

The wound measured 1.0 cm x 1.0 cm x 0.6 cm. The patient was non-compliant with instructions to off-load, but the patient refused a walking boot or any other forms of off-loading at this time.

Left plantar DFU, 12 week duration measuring 1.0 cm x 1.0 cm x 0.6 cm. Clinical manifestations, morbid obesity and prior DFUs presented with a 4.6 cm x 5.1 cm x 0.3 cm Wagner 3 ulcer of the left great toe. Treatment was continued with incision and débridement, NPWT. The wound edges continued to healing with shiny granular wound base measuring 4.4 cm x 3.0 cm x 1.0 cm. Treatment continued to include incision and débridement. The wound closed in 4 weeks.

Case 2 – Patient presented with a 2.2 cm x 3.4 cm x 0.8 cm Wagner 3 ulcer of the 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. NPWT was initiated. The wound was debrided, followed by silver alginate and Roll on TCC System was applied. The wound was flattened and shiny after only 3 days with Roll on TCC System. New epithelial tissue was noted and the granulation tissue was no longer flattened and shiny after only 4 days with Roll on TCC System.

Case 3 – The patient is a 57 year old male has a past medical history of Type 2 diabetes, HTN, hyperlipidemia, CAD, renal insufficiency, osteoarthritis and GERD. He worked at a local food warehouse and his duties required prolonged periods of standing and ambulation. The patient refused a walking boot or any other forms of off-loading at this time.

The wound measured 2.2 cm x 3.4 cm x 0.8 cm. NPWT was initiated. The wound was debrided, followed by silver alginate and Roll on TCC System was applied. One week after the Roll on TCC System was implemented the wound volume decreased by 0.3 cm³. Excisional débridement followed by silver alginate and TCC. The wound measured 0.6 cm x 0.6 cm x 0.4 cm. ABI 0.95

Results

A review of all DFUs treated in 2015 prior to beginning TCC indicated an average of 140 DTH. From January 1 to May 31, 2015, after utilizing Roll on TCC System on appropriate patients, the overall days to healing decreased to only 87.

Conclusions

Case 1: After main trial with post medical history of Type 2 diabetes with neuropathic manifestations, incision and débridement and graft DFU progressed with 4-6 cm x 5-1 cm x 0.3-0.5 cm Wagner 3 ulcer of the left great toe, treatment was continued with incision and débridement, NPWT. The wound edges continued to healing with shiny granular wound base measuring 4.4 cm x 3.0 cm x 1.0 cm. Treatment continued to include incision and débridement. The wound closed in 4 weeks.

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 0.6 cm x 0.6 cm x 0.4 cm. ABI 0.95

Case 3: A 62 year old male with diabetes and neuropathic manifestations, primary arterial hypertension and obstructive sleep apnea was admitted to our wound program. The patient was treated at another WC for approximately 8 weeks.

References

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

Semina Sciences provided an educational grant to support this research. The information may include a case that has not been approved or cleared by the Food and Drug Administration. This information is not being presented on behalf of Semina Sciences.

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CONCLUSION

A 51 year old female with post medical history of Type 2 diabetes with neuropathic manifestations, incision and débridement and graft DFU progressed with 4-6 cm x 5-1 cm x 0.3-0.5 cm Wagner 3 ulcer of the left great toe, treatment was continued with incision and débridement, negative pressure wound therapy (NPWT), management of bioburden, chronic control and a horizontal off-loading surgical shoe. The wound measured 0.9 cm x 0.6 cm x 0.4 cm. ABI was 0.92. NPWT was initiated. The wound was debrided, followed by silver alginate and Roll on TCC System was applied. The wound edges continued to healing with shiny granular wound base measuring 4.4 cm x 3.0 cm x 1.0 cm. Treatment continued to include incision and débridement. The wound closed in 4 weeks.

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 foot ulcer from Wagner 3 DFU. Roll on TCC System was initiated and the wound closed in 4 weeks.

What is your wound closure rate in 4 weeks after initiating the Roll on TCC System? The wound closure rate with an escharotic bridge and some collection of edges at larger wound.

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 39%.

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