

ArtAssist® Case Report

Treatment of non-healing lower extremity ulceration with a new form of progressive, rapid, pneumatic compression

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Patient

- 36 year old male
- 20+ years type I diabetes
- Retinopathy and peripheral neuropathy
- Renal failure, 6 years on hemodialysis
- Left below knee amputation
- Large right heel necrotic ulcer
- No runoff vessels for bypass surgery

Past Therapies

- Surgical debridements
- IV, oral and topical antibiotics
- Standard wound care treatment

ArtAssist® Device

- Applies compression to foot, ankle and calf up to 120mmHg
- Home use for 30 min. QID
- Increases blood circulation
- Ulcer size decreased substantially
- Limb was saved



We describe a new technology for treating non-healing arterial ulcers and limb salvage. This device increases blood flow by 2 to 4 times in diabetics and other patients with ischemic limbs that are non-surgical candidates.¹

We are reporting on a diabetic patient with a non-healing arterial heel ulcer expected to undergo right below knee amputation, since he was not a bypass candidate. The treatment options were amputation or to attempt ulcer healing with this new technology, the ArtAssist®. Saving his leg would mean he could be fitted with a left leg prosthesis allowing a more normal lifestyle for a relatively young man. It was also a consideration that if the heel ulcer could be healed and the leg saved, he would be considered a candidate for a kidney transplant.

ArtAssist® is a home use device that applies rapid progressive pneumatic compression while the patient is seated comfortably in a chair with the treated limb in a dependent position. ArtAssist® rapidly applies 120mmHg pressure beginning at the foot, continuing to the ankle and then the calf, 3 times a minute. The treatment consisted of 4, half hour sessions daily. This compression regimen simulates the beneficial effect of brisk walking, without pain or tissue trauma. Patient compliance is measured with a hidden internal hour meter accessible only to the nurse.

The limb was saved, despite the patient's poor compliance (only 37 min. daily out of the 120 prescribed). Ulcer size decreased substantially over 8 months and complete healing was imminent. After the 8-month visit our patient did not return for any follow-up visits in our department, despite numerous attempts and phone calls to him. Review of the clinical record after his demise 6 months later revealed that the heel ulcer never healed completely, but did not further deteriorate. The final reading from the internal hour meter indicated that the ArtAssist® had not been used since his last visit.

Recent clinical trials have proven the efficacy of ArtAssist® for patients with intermittent claudication.² Patients showed improvement in ankle brachial indices, and increased walking distances. The authors hypothesize these improvements are due to increased collateral circulation. Our experience supports these findings in our limb threatened ulcer patients.

Conclusion: Any patient presenting with a non-healing ulcer should be considered a candidate for this new therapy. We feel this is an important adjunct in treating our patients with peripheral arterial disease and we advocate its use in non-surgical patients.



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