

Shock wave therapy to improve wound healing after vein harvesting for CABG

Author:

Margit Voegle-Kadletz, Julia Dumfarth, Daniel Zimpfer, Johannes Holfeld, Florian Sihorsch, Wolfgang Schaden, Ernst Wolner, Michael Grimm

Institution:

University of Vienna, Dept. of Cardiothoracic Surgery Trauma Hospital Mediling

Device and producing company:

Derma Gold, TRT/MTS Konstanz, Germany

Introduction:

Wound healing disorders after vein harvesting for CABG are an evident clinical problem. Extracorporeal shock wave therapy (SWT) has been shown to improve wound healing in patients with diabetic and vascular ulcers. It remains uncertain if prophylactic application of SWT can improve wound healing after vein harvesting.

Methods:

In order to study the effect of prophylactic SWT we performed a prospective randomized trial. Eighty patients undergoing isolated CABG were randomised to either prophylactic SWT (n=40) or no treatment as control (n=40). SWT was applied after wound closure at the end of the operation under sterile conditions. A total of 25 impulses (0.1 mJ/mm²; 5Hz) were applied per centimetre wound length. Wound healing was evaluated using the ASEPSIS Score on postoperative days 3-7. Patient demographics, operative data and postoperative adverse events were monitored.

Results:

The groups were comparable with regard to patient demographics, operative data and postoperative adverse events. Wound length (SWT: 41±13 vs control: 37±11) was comparable between the two groups (p=0.110) as well. The asepsis score showed improved wound healing in the SWT group (SWT: 5.1 ± 5.6 vs. control: 9.7 ± 8.1, p=0.009). We observed no difference in use of antibiotics or length of hospital stay. No adverse events were observed in the treatment group.

Conclusion:

As shown in this prospective randomized study, prophylactic application of low energy extracorporeal shock wave therapy improves wound healing after vein harvesting for CABG.