

„Extracorporeal shock wave bodycontouring comparison of 25 mm versus 40 mm application head“

Introduction

The application of shock wave therapy in humans has been primarily to disintegrate kidney stones, induce neovascularization to promote tissue regeneration, and dissolve calcified tendonitis and lateral epicondylitis.

There are no studies available yet describing the efficiency of shock waves for cellulite treatment.

We treated patients with cellulite and uneven contours of the upper legs in order to find out if shock wave treatments allow to improve body contours.

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Materials and methods

A total of 10 female patients with cellulite stage 1 to 3 and connective tissue weakness were treated for 10 sessions within 3 weeks on the outer and inner thigh areas and the gluteal region in a split body study starting with 1500 – 2000 pulses/treatment area in Cellulite grade 1, 2500 pulses in grade 2 and 3000 pulses in grade 3 using a 25 mm applicator on the right side and a 40 mm applicator on the left side with a shock wave device manufactured by Zimmer (Germany)

Results

The reduction in circumference on the 25 mm head (right side) was 0 -1 cm at the end of the 8 sessions, the reduction on the 40 mm applicator side was 2.5 cm in average.

The contours were significantly more smoothed with the larger 40 mm hand piece than with the 25 mm, cellulite and firmness improved in pinch tests.

Discussion

The mechanism behind this effect is not yet fully understood. It has been shown that shock waves stimulate the early expression of angiogenesis-related growth factors, including endothelial nitric oxide synthase (eNOS), vascular endothelial growth factor (VEGF), and proliferating cell nuclear antigen (PCNA), contributing to induced vascularization and improving blood supply, with increased cell proliferation and tissue regeneration and repair.

