

ONE YEAR EXPERIENCE USING SHEAR WAVE TECHNOLOGY FOR BODY CONTOURING

Rafael Nunes, Daniela Nunes, Camara Luciana, Guilherme Nunes, Leticia Almeida Silva
 Slim Clinique Laser Center and Bonsucesso Hospital – Dermatology Department, Rio de Janeiro, Brazil

Summary

The use of ultrasound technology has become a common modality in the aesthetic market for non-invasive treatment for body contouring. This study presents a new ultrasound lipolysis technology, Shear Wave (Accent Ultra, Alma Lasers Ltd., Israel). 78 subjects were submitted to the treatment. A total of 4 sessions were performed, 2 weeks apart. Follow-up assessments were made at the day of the 4th session and 3 months after the first treatment. No side effects were found with the use of this new technology, proving to be safe and with a high subject satisfaction.

Background and Objectives

Interest in body contouring is more frequent than ever in daily practice. Several technologies and devices have come up with that objective (Figure 1). This new technology associates the use of the compression propagation with the shear wave. The shear waves repeatedly stretch and relax the adipocytes (Figure 2) membranes, deforming and damaging the adipocytes and triggering delayed cell death and causing substantially no collateral damage to adjacent cells which are structurally more robust. The purpose of this study was to evaluate the efficiency and safety of this new technology in body contouring with a follow-up at the end of the 4th session and 3 months after the first one.

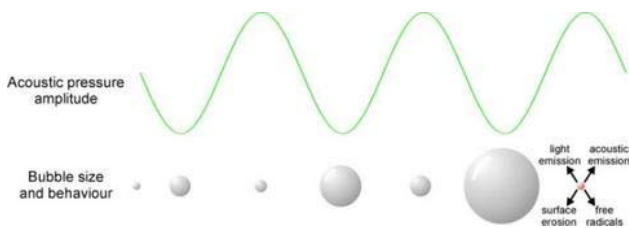


Figure 1 : Ultrasound Cavitation

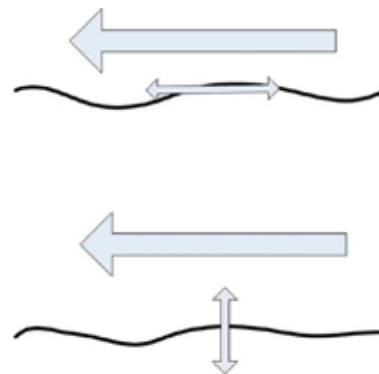


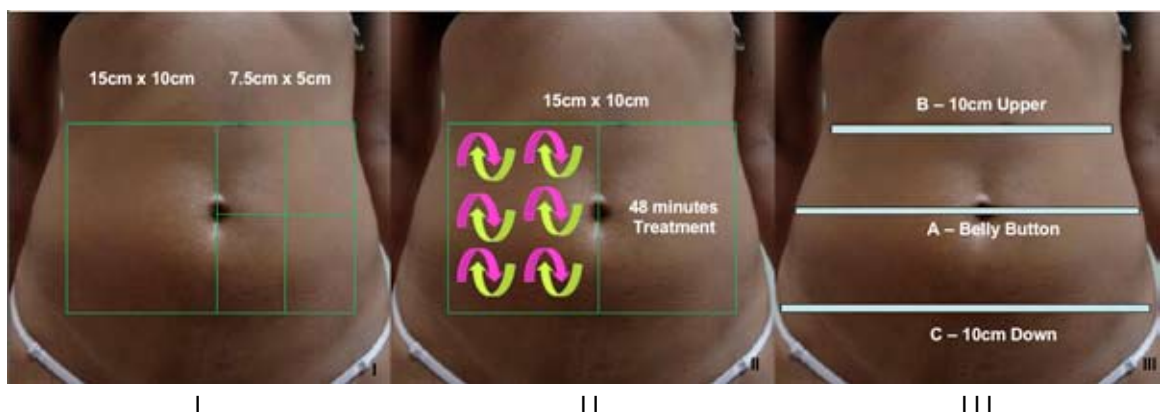
Figure 2 : Compression and Transverse Shear Wave – Directions of Vibration and Propagation

Study Design and Methods

78 subjects, of these 6 males and 72 females, 19-60 years old, 52-82kg weight (66kg Average), treated area – abdomen. Subjects were submitted to 4 sessions with 2 weeks apart. Each patient's abdomen was cleaned and marked with bilateral 15cm x 10cm grid (Figure 3.I) using a surgical marker and measured at 3 specific points (Figure 3.III). Each grid was further divided into 4 small quadrants of 7.5cm x 5cm each (Figure 3.I). A coat of vaseline was spread evenly over the entire grid area to serve as coupling medium. Each quadrant received alternately compression waves and shear waves at a 1:3 ratio (5:15 seconds ratio) for a period of 6 minutes (Figure 3.II). After the completion of the treatment on the 15cm x 10cm grid the area was cleaned and dried. Skin reaction during the treatment was a slight erythema and transient warmth.

Figure 3:
 I- Treatment Area
 II- Handpiece Movement Technique
 III- Reference Points for

Measurements:
 A - Belly Button
 B - 10cm Above Belly Button Point
 C - 10cm Under Belly Button Point



Results and Conclusion

All subjects reported virtually no pain (minimal heat sensation) during all treatment. No adverse effects were recorded during, after or during the follow-up. Blood tests showed no significant alterations. After the last treatment subjects presented an average circumference reduction of 4.2cm (Upper Abdomen – Point B), 5.8cm (Belly Button – Point A), 5cm (Lower Abdomen – Point C) (Figure 4). Another aspect noted was that the average circumference reduction decreased after each session (Figure 5). This new contour improvement method has proven to be safe and effective for the purpose and with a high subject satisfaction (Figure 6,7,8 and 9).

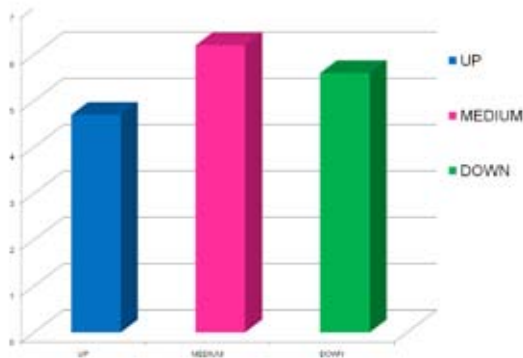


Figure 4: Average Circumference Loss After 4 Sessions

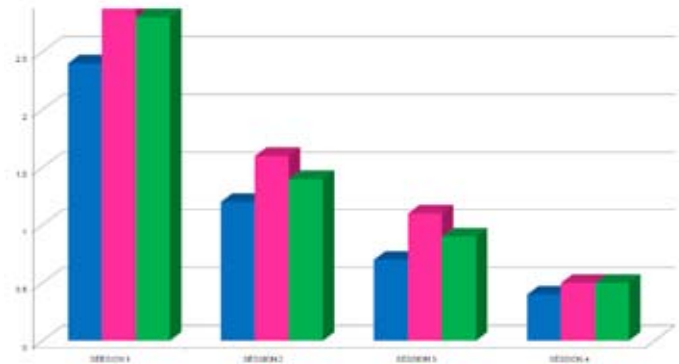


Figure 5: Average Circumference Loss After Each Session



Figure 6: Female - Age 33 – 4 Tx – 4.5cm Reduction Point A



Figure 7: Female - Age 39 – 4 Tx – 6.2cm Reduction Point A



Figure 8: Male - Age 28 – 4 Tx – 4.0cm Reduction Point A



Figure 9: Female - Age 32 – 4 Tx – 6.7cm Reduction Point A