Letter to the Editor

Non-surgical abdominal fat reduction procedure, with the use of a monopolar radiofrequency device: a useful and non-invasive method.

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Introduction

The demand for the use of non-invasive methods for body circumference and fat reduction is growing year by year. Accordingly, different non-invasive body contouring modalities exist. We presented a therapeutic response in 20 patients to a device that reduce abdominal circumference and fats, without overheating the application sites or causing other discomfort to patients. The ease of use and versatility make it a valid non-invasive technique for body remodeling.

In the last decades, several non-invasive body contouring techniques started to be increasingly used as procedures in esthetic medicine (1). Specifically, the significant risk of invasive body contouring procedures has led to 521% growth of non-invasive techniques since 1997, with an increase of 21% every year (1). At the same time, in the general population, there is an increase in the incidence of diseases associated with overweight and obesity (2). Accordingly, there is an increase of subcutaneous fat, that is an indicator of peripheral fat mass, which could be evaluated by circumference and skin fold measurements and variation in these parameters could be considered as an indicator of cellulite changes (1). In this regard, different non-invasive

body contouring modalities are available for reducing the volume of subcutaneous adipose tissue, such as cryolipolysis, radiofrequency (RF), low-level laser therapy (LLLT), and high-intensity focused ultrasound (HIFU) (1).

In this article we report a case series of abdominal fat reduction using a novel device, which takes a multi-dimensional approach to decrease circumference and eliminate fat cells, by delivering and holding clinically therapeutic temperatures to the subcutaneous adipose tissue to achieve the efficacy in the shortest possible treatment (3).

Methods and case series

A total of 20 Caucasian female patients (median age: 58 years, ranging between 43 and 72), with an increase of abdominal fat, which caused discomfort to patients, have been included in this report. None of the selected patients had also other relevant medical diseases. All patients did not perform any previous treatment for the increase of the abdominal fat and were included in treatment with truSculpt® iD (Cutera, Brisbane, California, USA), a body sculpting device that offers personalized non-surgical fat reduction treatments based on patient needs. Specifically, it is a monopolar radiofrequency device in which electric current flows between a single electrode and a grounding point. The 2 MHz treatment frequency create hyperthermic conditions within the subcutaneous fat layer but the handpieces maintain a comfortable skin temperature (between 43.0°C and 44.0°C). The temperature inversion effect acts on the adipocytes without damaging to the cutaneous layers (4).

The treatment was performed on 8 areas simultaneously, specifically in abdomen and flanks. Up to six 40 cm^2 hands-free handpieces placed simultaneously over multiple localized fat pockets. Handpieces covered up to 300 cm^2 treatment area on the abdomen and flanks in 15 minutes. Each treatment session consisted of 2 cycles of 15 minutes for each session, for a total of 5 sessions every 15 days. After 5 sessions all treated patient reached with a fact reduction, resulting in a reduction of the abdominal circumference, with a mean circumference reduction of 1.8 cm (ranging between 1.5 cm and 2.8 cm). (Fig. A1, fig. B2) No adverse events have been recorded, but the patients experienced only mild to moderate local erythema and edema after the treatment, for a period ranging between 1 hour and non-more than 24 hours.

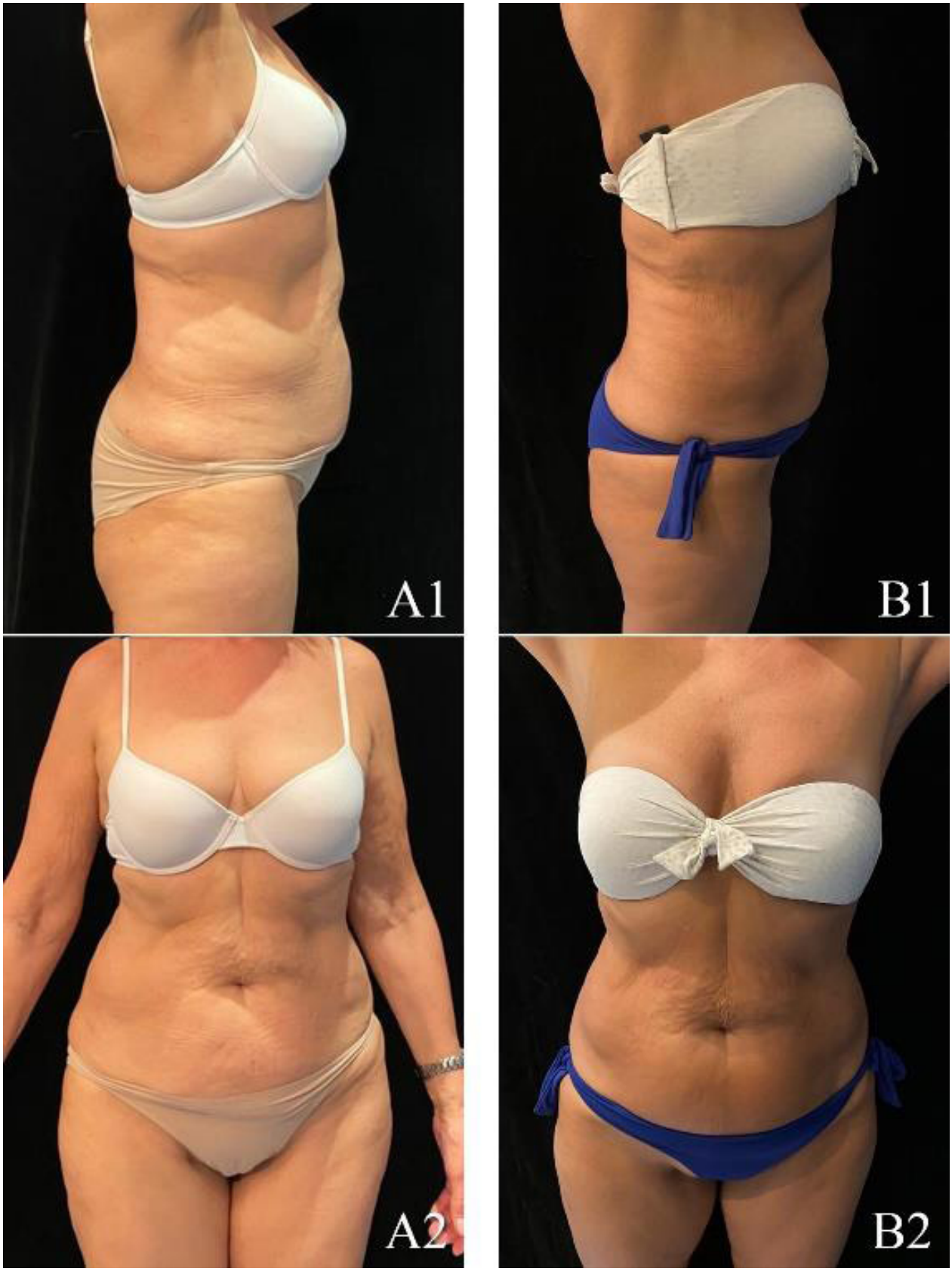

Fig. A1-B2. *Each session consisted in 2 cycles of 15 minutes. After 5 sessions the patient showed a reduction of the abdominal circumference, with also a reduction of the abdominal fat. No specific side effects have been recorded.*

Discussion

According to the existing evidence, the non-invasive techniques have shown statistically significant effects on body contouring and on removing unwanted fat., however, with little or no effect on body weight reduction and total percentage of body fat (1). According to the literature (1), the average circumference reduction after noninvasive methods is of 2 cm, and our results confirmed these data. Furthermore, the patient satisfaction following the treatment, with the minimum possible discomfort for the patients, remains to be a valid treatment for abdominal circumference and fat reduction.

Radiofrequency (RF) is an electromagnetic wave that was initially used for body contouring (4-6). It may induce heat in different tissues by transforming energy through three main mechanisms: orientation of electric dipoles; polarization of atoms and molecules to produce dipole moments and displacement of conduction electrons and ions (1, 7) truSculpt® iD is a non-invasive, monopolar RF platform, characterized by high tolerance and compliance by the patient, with excellent aesthetic results. Specifically, truSculpt® iD allows for customized treatments to multiple body areas simultaneously based on patients need in as little as one 15-minute treatment protocol, delivering heat to the entire fat layer, without skin overheating (3, 7). Indeed, a therapeutic temperature of >45ºC in the fat is reached, while maintaining a cutaneous temperature of 3-4ºC cooler (3). In this way, an average of 24% fat cells are irreversibly damaged and fat cells are slowly removed and excreted through the body naturally over a 12-week process (3, 7, 8).

Conclusions

The demand for the use of non-invasive methods for reducing body circumference, fat reduction and muscle sculpturing is growing year by year (9-13). We have presented a therapeutic response to a device that does not cause discomfort to patients and does not overheat the application sites. The ease of use and versatility make it a valid non-invasive therapy for body contouring.

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