thermage® FLX

Clinical Case 03

Skin laxity in the periumbilical abdominal region

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SOLTA MEDICAL®

THERMAGE® FLX CLINICAL CASE

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INTRODUCTION

Body skin laxity is one of the most frequent reasons for consultation in aesthetic medicine, especially among women from the fourth decade of life onward. Hormonal changes, intrinsic skin aging, loss of dermal elasticity, and repeated weight fluctuations contribute to the progressive deterioration of collagen architecture.

In recent years, the growing pursuit of weight loss has significantly increased the demand for treatments addressing residual skin laxity. Many patients achieve notable weight reduction without the skin having sufficient capacity to retract adequately, resulting in localized flaccidity.

Abdominal laxity without significant adiposity or associated cellulite represents a therapeutic challenge, as the range of available treatments is relatively limited for moderate to severe degrees of laxity. In these cases, biostimulators may be insufficient and surgery may not be indicated or may be rejected by the patient.

In this context, **Thermage® FLX**, the fourth generation of non-invasive* capacitive monopolar radiofrequency, represents a therapeutic tool supported by consolidated scientific evidence.

*no needles

CASE PRESENTATION

PATIENT DATA:

47-year-old female patient, with no relevant medical history, of slim build.

REASON FOR CONSULTATION:

The patient consulted for skin laxity in the periumbilical abdominal region. She presented with thin skin, absence of significant adiposity, no associated cellulite, and marked loss of dermal firmness. This condition generated emotional discomfort and a significant aesthetic concern.

INITIAL EVALUATION:

A thorough evaluation of the case was performed, confirming localized skin laxity with reduced dermal firmness and no relevant subcutaneous fat component. The patient exhibited good overall health and no contraindications for non-invasive procedures. Baseline pre-treatment photographs were taken.

JUSTIFICATION OF THE TECHNIQUE:

After careful assessment and ruling out other treatment options—such as collagen inducers (due to the excessive laxity compared to the degree of tightening they can achieve) and abdominal surgery (which the patient refused)—treatment with Thermage® FLX was selected.

Thermage® FLX was chosen due to its deep dermal heating capacity, demonstrated efficacy in skin tightening, and well-established safety profile, making it the most suitable option for this case.

TECHNICAL DESCRIPTION OF THE PROCEDURE

PROTOCOL USED

An average energy protocol of 14.2 J/cm² was applied, with an energy level between 2.5 and 3.5 throughout the treatment. Multiple passes were performed over the area to progressively increase global heating, using horizontal, vertical, and transverse vectors.

During the procedure, a pause was made after 400 pulses, followed by an additional 400 pulses, allowing assessment of the treated zones and adjustment of the next treatment phase. The final 100 pulses were delivered using two ascending transverse vectors and three ascending vectors.

A medium tip (4.0 cm²) was used, with a total of 900 pulses.

The medium tip was chosen because the patient had a relatively small abdomen, allowing the vector protocol with multiple passes to be completed more effectively (3,5).

ANESTHESIA

The treatment was performed without anesthesia. The technology incorporates cryogen cooling, which cools the epidermis and makes the procedure tolerable (1,4).

PROCEDURE DURATION

From the drawing of the treatment map to the application of soothing and hydrating cream at the end of the session, the procedure lasted 110 minutes.

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DISCUSSION

Thermage® FLX is a **fourth-generation capacitive monopolar radiofrequency device**, designed for the treatment of skin laxity in multiple body areas, including the abdomen, arms, thighs, and face, according to manufacturer specifications.

This technology is distinguished as one of the most powerful available on the market, with a **patented power of 500 W**, enabling effective penetration into the deep dermal and subcutaneous tissue layers.

The therapeutic mechanism is based on the emission of radiofrequency energy that generates controlled heat in the dermal and subdermal tissue, producing several cellular and tissue effects that explain its efficacy:

- **Contraction of existing collagen:** Partial denaturation of collagen fibers causes immediate contraction of the extracellular matrix, clinically visible as skin tightening.
- **Fibroblast stimulation and neocollagenesis:** Heating induces metabolic activation of fibroblasts, which begin synthesizing new **type I and III collagen**, elastin, and other extracellular matrix proteins, progressively strengthening dermal structure (7).
- **Activation of heat shock proteins (HSPs):** These proteins play a crucial role in dermal repair and reorganization, improving skin elasticity and firmness.

Clinical studies have shown that **more than 87% of patients exhibit a visible tightening effect immediately after treatment** (3,6,7), while complete dermal remodeling consolidates between **4 and 6 months**, reflecting the physiological dynamics of neocollagenesis.

The **capacitive monopolar radiofrequency** of Thermage® FLX allows transmission of higher energy fluences to a greater volume of dermal tissue, reaching subdermal layers that are inaccessible with bipolar radiofrequency, resulting in **deep and volumetric tissue penetration** (2).

The deep tissue heating generated by Thermage® FLX is mediated by **tissue electrical resistance (bioimpedance)**, ensuring uniform heating.

The system uses **pulsed cryogen cooling for epidermal protection**, producing simultaneous cooling of the epidermis **before, during, and after the energy pulse**, minimizing patient discomfort and reducing the risk of superficial burns (4,5).

The technique allows **long-lasting results with a single session**, with minimal downtime. Visible effects progressively improve over time, achieving stable skin tightening at **3, 6, and 12 months**, with long-term maintenance (1,2). This makes it an effective option for patients seeking **non-surgical alternatives for moderate skin laxity.**

In conclusion, **Thermage® FLX represents an effective non-invasive solution for body laxity**, integrating advanced monopolar radiofrequency technology, bioimpedance control, and simultaneous cooling, with measurable and progressive clinical results in selected patients.

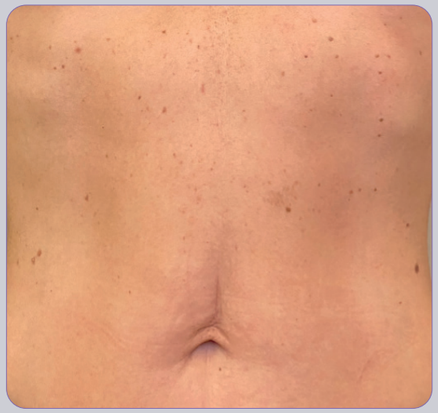
RESULTS



Before treatment



3 months post treatment



1 year post treatment



3 years post treatment

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DISCUSSION

The patient was evaluated through structured clinical and standardized photographic follow-ups at 3 months, 12 months, and 3 years after treatment with Thermage® FLX.

This follow-up allowed assessment of the short-, medium-, and long-term efficacy of monopolar radiofrequency for abdominal laxity.

3-MONTH EVALUATION
An initial skin tightening effect was observed, with reduction of periumbilical folds and improvement of abdominal contour. The skin appeared firmer and more uniform, reflecting the initial contraction of existing collagen and activation of fibroblasts.

12-MONTH EVALUATION
Results progressively consolidated. The skin showed increased dermal thickness and elasticity, evidencing treatment-induced neocollagenesis. This phase reflects the biological remodeling of the extracellular matrix, which continues even after the initial collagen contraction phase.

3-YEAR EVALUATION
Results remained stable in this case, suggesting the potential for deep collagen remodelling, which may result in sustained effects. However, this observation is based on a single patient, and outcomes may vary. In the general population, repeat treatments—typically recommended on an annual basis—may be required to maintain results.

The gradual and sustained progression of results aligns with the physiological dynamics of neocollagenesis and dermal reorganization, processes that require weeks to months to complete. The combination of controlled deep heating and epidermal cooling ensures uniform remodeling, maximizing efficacy while minimizing risks.

These findings confirm that a single annual Thermage® FLX session can produce significant and durable aesthetic improvements in abdominal laxity, with both immediate and progressive results over time (2).

CONCLUSIONS

Thermage® FLX is an effective tool for the treatment of abdominal skin laxity, producing contraction of existing collagen and stimulation of new collagen synthesis, that may result in durable and stable outcomes over time.*

Among its advantages:

- Only one session per year is required
- Minimal downtime to no downtime
- Progressively improving results over the following months (2)

*Results may vary and maintenance treatments—typically recommended on an annual basis—may be required to sustain outcomes over time.

Thermage® FLX represents an **effective and minimally invasive therapeutic option for mild to moderate abdominal laxity.** Its main benefits include:

1. **Immediate contraction of existing collagen**, generating visible tightening from the first session.
2. **Stimulation of new collagen synthesis and dermal matrix reorganization**, ensuring progressive and durable results.
3. **Tolerable,** with absence of complications and no need for anesthesia or minimal downtime.
4. **Long-term sustainable results,** demonstrated up to **3 years post-treatment**, confirming durability of the therapeutic effect.
5. **Once-yearly procedure**, facilitating patient adherence.

In conclusion, **Thermage® FLX offers a reliable non-surgical alternative for body skin laxity**, particularly in patients seeking to improve skin firmness without undergoing invasive procedures. The combination of **immediate contraction, progressive results, and well established profile** makes it a prominent option within modern aesthetic medicine (2).

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