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INSTRUMENT REVIEW

ThermiVa: The Revolutionary Technology for Vulvovaginal Rejuvenation and Noninvasive Management of Female SUI

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About the Reviewer

Dr Navneet Magon currently works with Indian Armed Forces, and is presently posted to the busiest hospital of Armed Forces Medical Services. Ardently involved with academics, Dr Magon has over 60 peer-reviewed publications to his credit, which includes publications in Studd's CPOG, and has contributed chapters to various postgraduate books. Dr Magon is a peer-reviewer for many national and international journals and is on the roll of honor of the World Association of Medical Editors (WAME). He is the National Corresponding Editor for the Journal of Obstetrics and Gynecology of India, the official journal of FOGSI. Awarded with the prestigious FOGSI Dr Kamini Rao Oration for year 2014 and AOFOG Dr SS Rathnam Young Gynecologist Award 2015, he is presently the National Coordinator for FOGSI Endoscopy Committee (2015–2018) as well as FOGSI Urogynecology Committee (2014–2017). An ace pelvic reconstructive and endoscopic surgeon, Dr Magon is also the President of Urogynecology and Pelvic Health Association of India.

Abstract Addressing vaginal laxity, atrophic vaginitis, stress urinary incontinence (SUI), and different manifestations of sexual dysfunction has always been problematic due to women's traditional difficulty discussing these issues with doctors as well as the societal attitude of resignation toward these conditions. The recent rise of non-invasive feminine rejuvenation using energy-based modalities to vaginal tissue has its origins in aesthetic medicine. Transcutaneous temperature-controlled radiofrequency therapy at the vulvovaginal region has shown promising results in giving a more youthful appearing vulva, restoration of vaginal elasticity and 'tightness', considerable improvement in SUI, reduction in overactive bladder symptoms, and reduction in sexual dysfunction. It is also emerging as the non-invasive treatment modality for mild to moderate SUI. It seems that the time has come, when women shall ever be grateful to their gynecologist for management of SUI with ThermiVa without an incision.

Keywords Female sexual dysfunction · Stress urinary incontinence · Vaginal Rejuvenation · ThermiVa · Laser

Between childbirth and menopause, vagina and nearby tissues undergo numerous changes leading to a well-

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defined suite of conditions that includes atrophic vaginitis, stress urinary incontinence (SUI), and different manifestations of sexual dysfunction. Addressing these conditions is problematic due to women's traditional difficulty discussing these issues with doctors as well as the societal attitude of resignation toward these conditions, and until recently the armamentarium has also been severely limited

The rise of feminine rejuvenation stems from the application of energy-based modalities to vaginal tissue in the same fashion as has been done in aesthetic medicine [1]. Thermal effect causes coagulation and/or ablation which activate healing factors, causing increased blood flow and neocollagenesis. Intuitively, the ability to deliver more energy will cause a more profound effect. Directed energy does not induce pain in the vaginal wall as readily as it does in facial skin, making energy-based therapies more tolerable at higher energies.

Enter ThermiVa (ThermiAesthetics, Southlake, Texas, USA) is a device for performing transcutaneous temperature-controlled radiofrequency therapy (TTCRF) at the vulvovaginal region. Radiofrequency (RF) technology has been used successfully in aesthetic medicine, along with lasers, for rejuvenation or tightening of skin at the face, neck, chest, and other body parts [2]. Recent studies have shown its utility for vulvar and vaginal use as well [1, 3, 4]. RF is safe, noninvasive, and effective—especially when used on naturally well hydrated tissue. As the RF electrode passes current through the skin, resistance creates heat, causing the therapeutic damage necessary for rejuvenation to take place: denaturation and contraction of collagen, activation of fibroblasts, increased blood flow, and neocollagenesis occur [2]. ThermiVa employs a slim, S-shaped treatment probe designed specifically for the task, with a postage stamp-sized RF emitter on the ventral tip [1]. Feedback mechanisms on the probe include thermistors and thermocouples that provide tissue temperature information to the device itself, which modulates power output so that scientifically determined temperature targets (40–45 °C) are safely and rapidly met but not exceeded, preventing overtreatment.

The overall treatment time is about 30 min or less. TTCRF therapy is so tolerable that no anesthesia is needed. ThermiVa is activated via footswitch to allow users to concentrate on treatment. Careful management of treatment parameters is not vital because ThermiVa's feedback mechanisms do all the work, both monitoring tissue temperature and modulating RF energy emission.

The reported result is tightening of vulva and vaginal wall tissues including the mucosa and fascia, leading to a more youthful appearing vulva (Fig. 1). The newer, healthier tissue is stronger and more resistant to tearing; restoration of vaginal elasticity and 'tightness' is reported along with improved lubrication and transudate production,

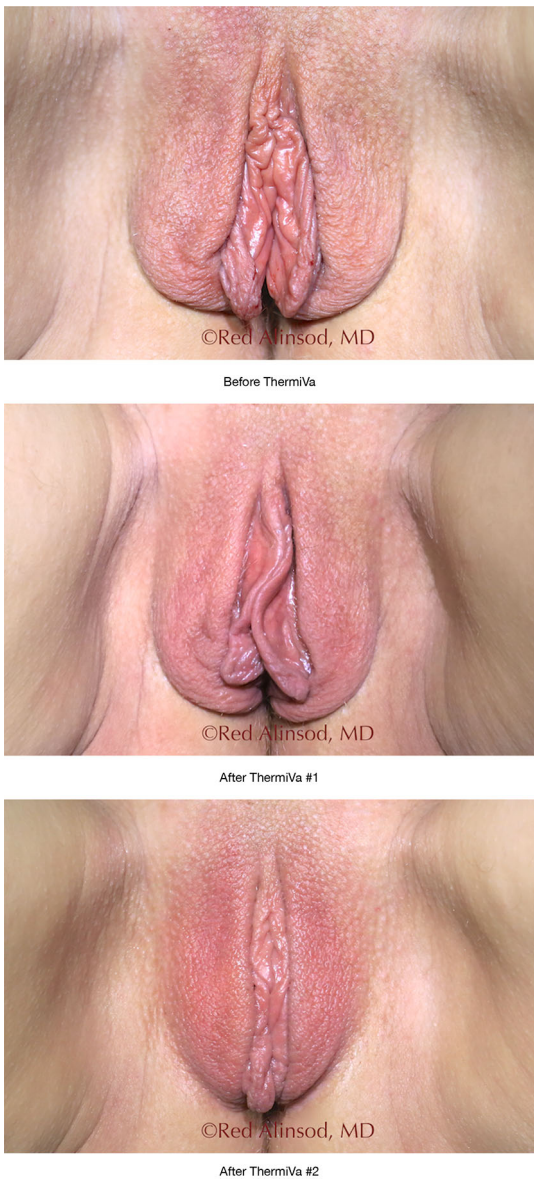

Fig. 1 Vulvovaginal Rejuvenation: Before and After ThermiVa Treatment Pictures

improvement in SUI, reduction in overactive bladder symptoms, and reduction of sexual dysfunction. Women with orgasmic dysfunction have regained the ability to achieve orgasms quicker after TTCRF with ThermiVa. While a course of two or three treatments is preferred, outcomes are often notable after the first session [1]. Outcomes may persist for a year or more.

Laser-based devices are also becoming prevalent. While their safety and efficacy has been scientifically demonstrated, ThermiVa has a few distinct advantages when compared to those. Its treatment probe (Fig. 2) is small and narrow and nonthreatening, cream in color, and shaped similarly to the familiar Hegar dilator. The generator box

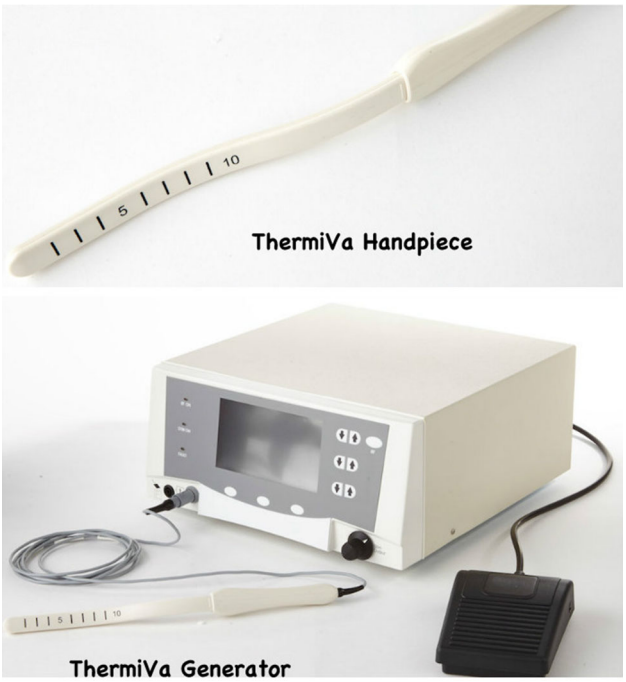

Fig. 2 ThermiVa Handpiece and Portable ThermiVa Generator

(Fig. 2) is light and easily portable from room to room. There is no smoke or odor nor need for a smoke evacuator or special glasses. Feedback control assures a strong safety profile as well, and no anesthesia is required for treatment. Perhaps the most profound advantage is that TTCRF therapy with ThermiVa is completely noninvasive; the dermal barrier is not breached in the slightest so there is no discharge or downtime. Patients can resume all normal activities, including sex, immediately if they wish because no time is required for healing of surface tissue. ThermiVa wands are single use and hygienic with no cleanup needed.

The RF effects of ThermiVa also have proven beneficial on mild to moderate SUI. The lead author is presently evaluating the short- and long-term effects of ThermiVa on SUI in Indian women, the initial results are very promising. If ThermiVa can successfully establish as the noninvasive treatment modality for mild to moderate SUI, it would revolutionize the management for SUI.

As was published elsewhere [5], management of SUI is an ongoing quest for perfected treatment options with more efficacious outcomes and minimal patient morbidity. The next step beyond the needleless, single small vaginal incision technique could perhaps be the total elimination of any incision at all. This may be profanation to surgeons, but patients would eternally be grateful to avoid the knife, regardless of how small the incision has become. It seems that the time has come when women shall ever be grateful to their gynecologist for management of SUI with ThermiVa without an incision.

Compliance with ethical standards

Conflict of interest There is no conflict of interest for first author.

Ethical standards The second author is the developer of ThermiVa and gets royalties.

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