

DR. GUSTAVO H LEIBASCHOFF

“Carboxytherapy for Functional and Aesthetic Gynecologic Conditions.”



With the
collaboration of

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Genito Urinary Syndrome of Menopause GSM

In 2014, the committee agreed to the new term GSM and defined it as "a collection of symptoms and signs associated with a decrease in estrogen and other sex steroids involving changes to the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra, and bladder" (Portman & Gass, 2014, p. 352).



Etiology

- 1-Menopause: due to lack of estrogen. Dramatic decline in the circulating estrogen levels occurs at menopause from 120 pg/ml to 18 pg/ml
- 2-Pelvic irradiation or chemotherapy
- 3-Oophorectomy
- 4-Anti-estrogens: e.g. Tamoxifen, Danazol, Medroxyprogesterone, GnRh agonists
- 5-Immediately after delivery or breast feeding
- 6-Anorexic women & women who have recently lost a significant body weight
- 6-idiopathic



Urinary

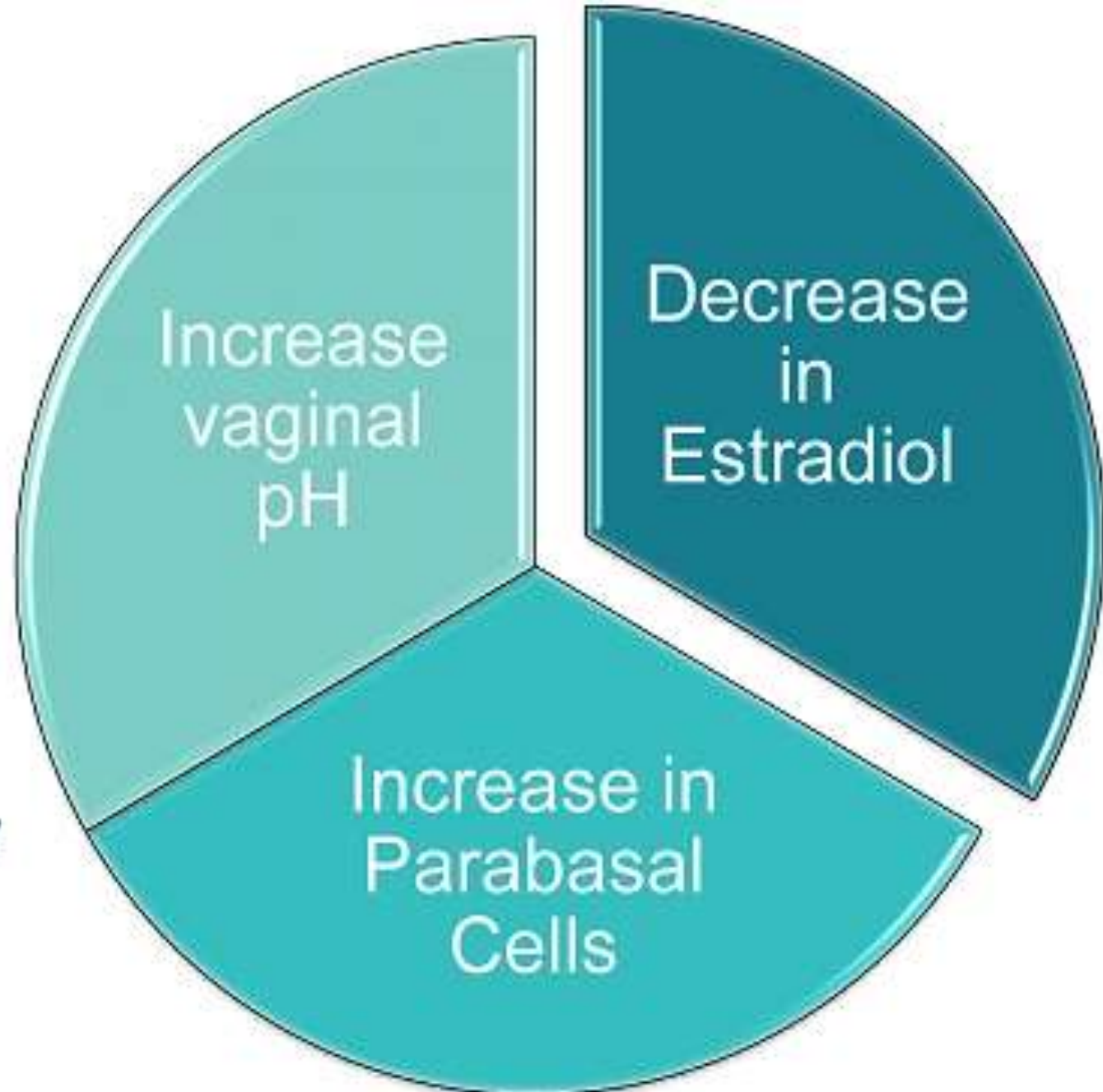
- Dysuria
- Haematuria
- Stress incontinence
- Urinary frequency
- Recurrent UTI

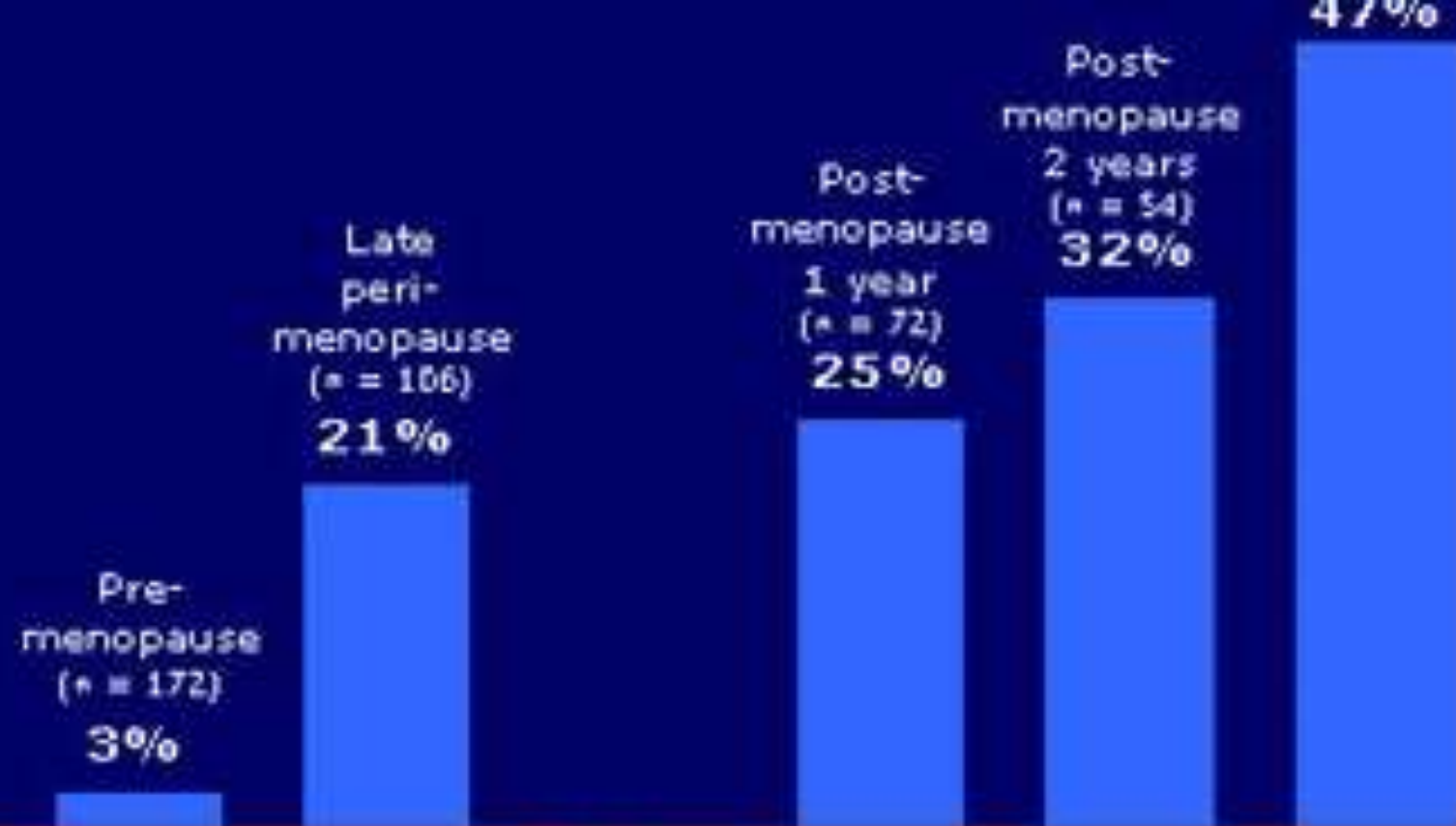
Genital

- Dryness
- Burning
- Itching
- Dyspareunia
- Post coital bleeding
- Vaginal discharge



- ❖ **Decreased Estradiol levels cause a reduction in superficial cells**
- ❖ **Parabasal cells increase**
- ❖ **Vagina changes from acidic to basic (increased pH)**
- ❖ **Burning, dyspareunia, UTI, itching are the most common symptoms**
- ❖ **Chronic condition that requires ongoing therapy for the rest of a woman's life**





Premenopause

51

Perimenopause

Postmenopause

Dryness increased significantly in late perimenopause and postmenopause ($P < .001$)



CARBOXY THERAPY AS A SOLUTION

Over the past 25 years, carboxytherapy via CO₂ injection has been used to treat patients with different pathologies.

When administered subcutaneously, CO₂ immediately diffuses at the cutaneous and muscular microcirculatory levels, resulting in higher tissue oxygenation and neoangiogenesis

Sinozic T, Kovacević J. [Carboxytherapy supportive therapy in chronic wound treatment] (in Croatian). Acta Med Croatica 2013;67 Suppl 1:137-41.



CO2 The effects are

Increase tissular oxygenation [PO₂]

Vacher, 1987

Increase flow rate and vasodilatation

Hartmann BR, Bassenge E Angiology 48:337, 1997

Abramo AC Rev Bras Cir Plast 2009

Varlaro V Blood 2007

Clean the ECM

Maia-Figueiró TL, Odashiro AN, Menezes GP

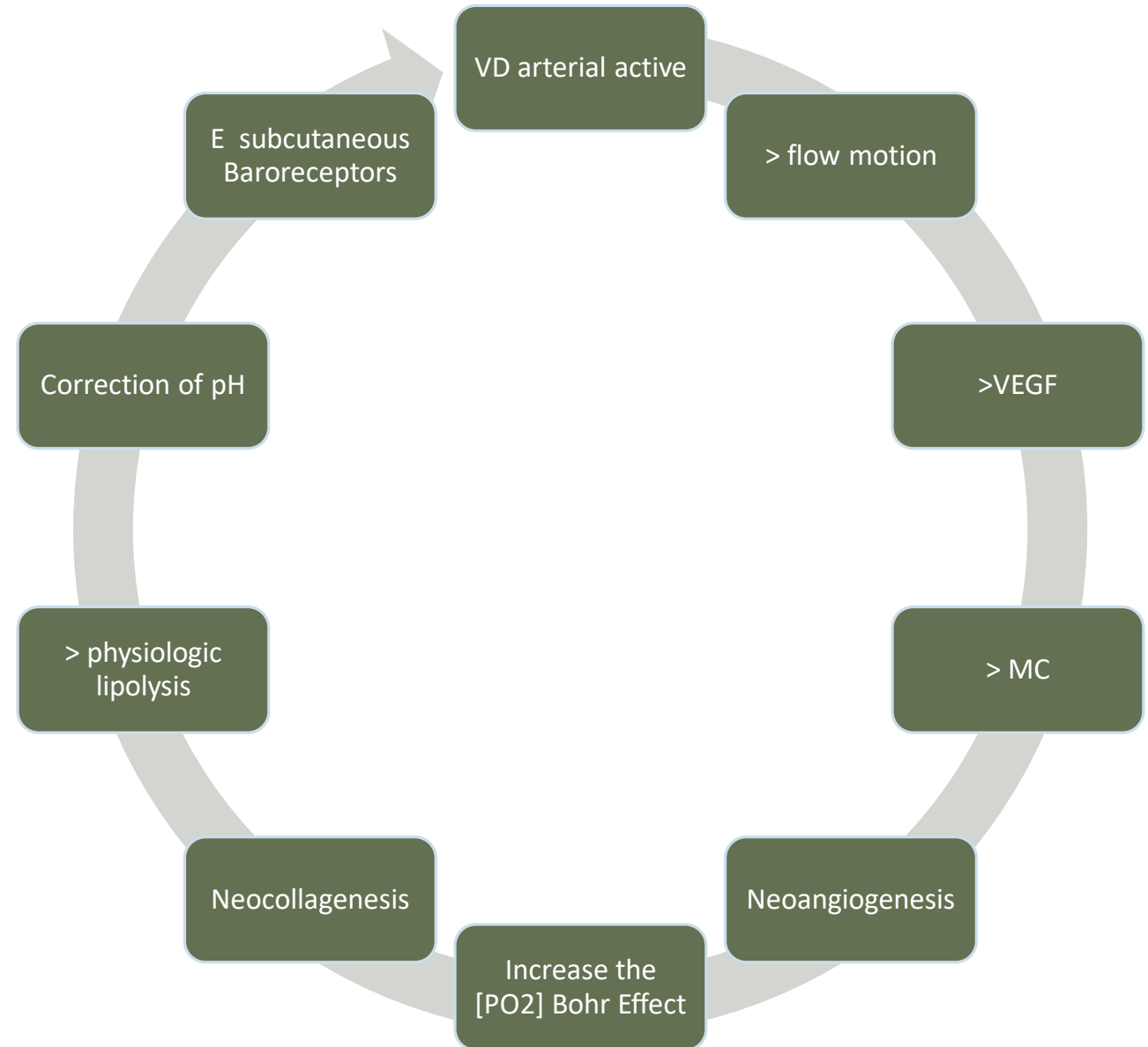


CO2 the effects are

- Great capability to diffuse among tissues
 - Paulon, 1956 - Couldert, 1980
- Biostimulation of the connective tissue
 - Ferreira JCT J Drugs Dermatol. 2008
- Contributes to restore the microvascular-tissular unit exchanges
 - Curri, Albergati, 1997
- The tissue stretching (baro trauma) during infusion induces a subclinical inflammation
 - Maia-Figueiró TL, Odashiro AN, Menezes GP, et al.



Physiologic effects CO2



Conclusions

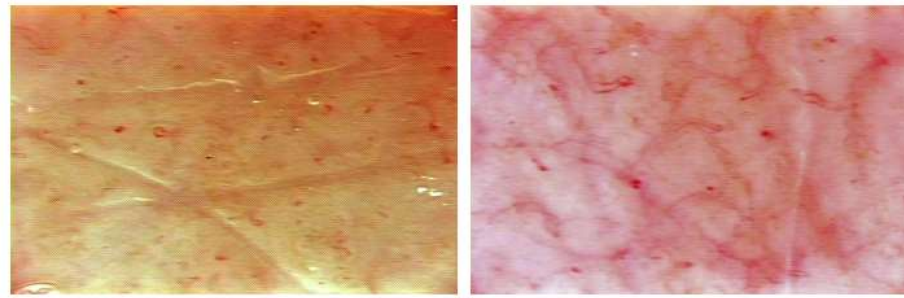
In this initial prospective study of 15 patients with Aesthetic Cellulite, the images obtained by Videocapillaroscopy showed that immediately after the first session using carboxytherapy in different doses, 50cc and 150 cc

Vertical capillaries significantly increases 35.2 +/- 3.3% per mm² in the area of injection

After a week of the Carboxitherapy session the images showed a decreased of 8.2% of vertical capillaries comparing with the previous images post injection



Future in Carboxytherapy CO2?



Before CO2, less number of vertical capillaries (VC), After increase the number of VC and the color look pinker (increase of microcirculation)



With the Videocapilaroscopy we find the follow

In quantitative form there is an increase of the vertical capillaries 43.2% in the lobe of the right ear (active area with the gel)

Before

After

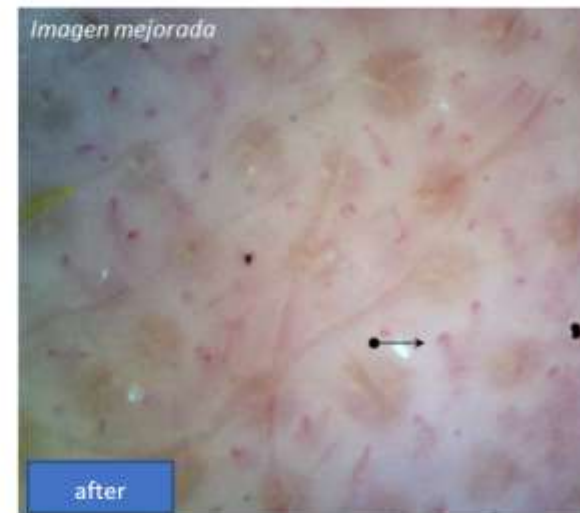


fig 8



The Development of the non-injectable treatment “Co2 Lift” created in Japan

OPEN  ACCESS Freely available online



A Novel System for Transcutaneous Application of Carbon Dioxide Causing an “Artificial Bohr Effect” in the Human Body

Yoshitada Sakai^{1,3*}, Masahiko Miwa¹, Keisuke Oe¹, Takeshi Ueha², Akihiro Koh¹, Takahiro Niikura¹, Takashi Iwakura¹, Sang Yang Lee¹, Masaya Tanaka², Masahiro Kurosaka¹

1 Department of Orthopedic Surgery, Kobe University Graduate School of Medicine, Kobe University, Kobe, Hyogo, Japan, **2** NeoChemir Inc., Kobe, Hyogo, Japan, **3** Faculty of Health Care Sciences, Himeji Dokkyo University, Himeji, Hyogo, Japan





Medical grade treatment from
Japan used in hospitals for wound
healing and burns

This advance treatment will focus
an individual's aging skin

Science
O2 to then skin
Vasodilation
Improve cell metabolism
Increase blood motion
Anti inflammation





CO2

- ✂ Improved
- ✂ Cosmetic appearance
 - ✂ Vaginal tone
 - ✂ Functionality
 - ✂ Circulation
 - ✂ Sensation in the area



CO2 V Lift

Vaginal Rejuvenation

No needle

No risk of infection

No pain

No downtime

Self application

-Prevention

-When non-hormonal treatment of symptoms and signs of vaginal vulva atrophy and

-surgical and non-surgical treatments (laser RF) and will be the basis of the maintenance of the result obtained





We performed the Gloria Bachman VHI questionnaire in 10 menopausal patients and obtained a highly positive result in their vaginal health after the use of the CO2 Gel during 10 sessions performed each day after. It could be seen as in the macroscopic aspect the change of color of the vaginal epithelium and the vanished of the whitish and petechiae zones. It is interesting to look how decrease the pH, and increase the moisturize and elasticity in the vagina.



1st VISIT April 24 2018

Score	Overall elasticity*	Fluid secretion type and consistency	pH	Epithelial mucosa	Moisture
1	None	None	≥ 6.1	Petechiae noted before contact	None, mucosa inflamed
2	Poor	Scant, thin yellow	5.6-6.0	Bleeds with light contact	None, mucosa not inflamed
3	Fair	Superficial, thin white	5.1-5.5	Bleeds with scraping	Minimal
4	Good	Moderate, thin white	4.7-5.0	Not friable, thin mucosa	Moderate
5	Excellent	Normal (white flocculent)	≤ 4.6	Not friable, normal mucosa	Normal

*: Lower score corresponds to greater urogenital atrophy.



)

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2nd VISIT 06 JUNE 2018

VHI=18

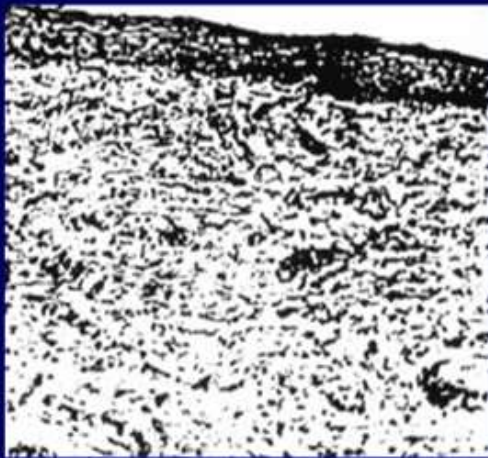




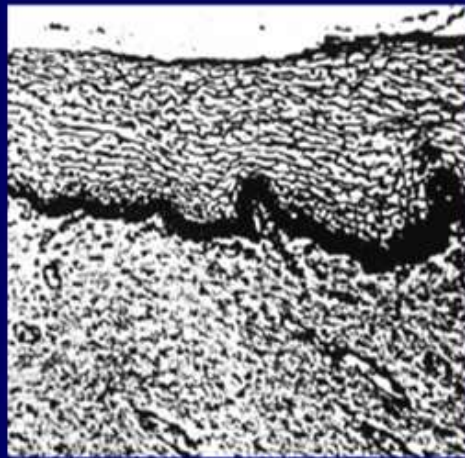
Biopsies



Improvement in Vaginal Histology With Local Estrogen Therapy



Vaginal biopsy showing atrophic changes

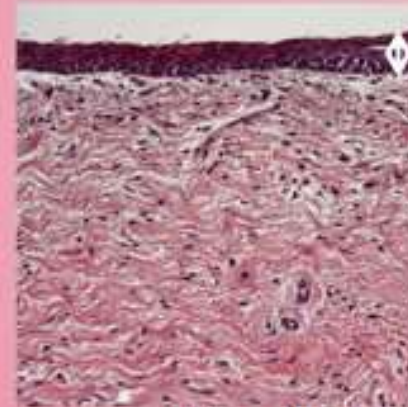


The same patient after local estrogen therapy

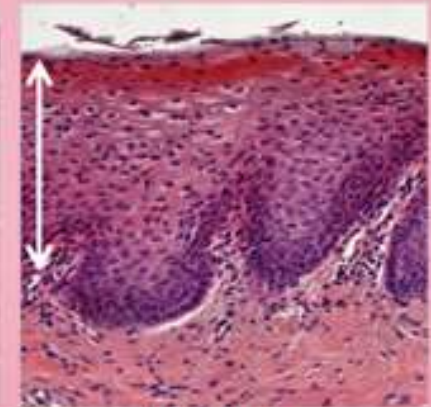
Courtesy of Lila E. Nachtigall, MD.

Histological Results

Before



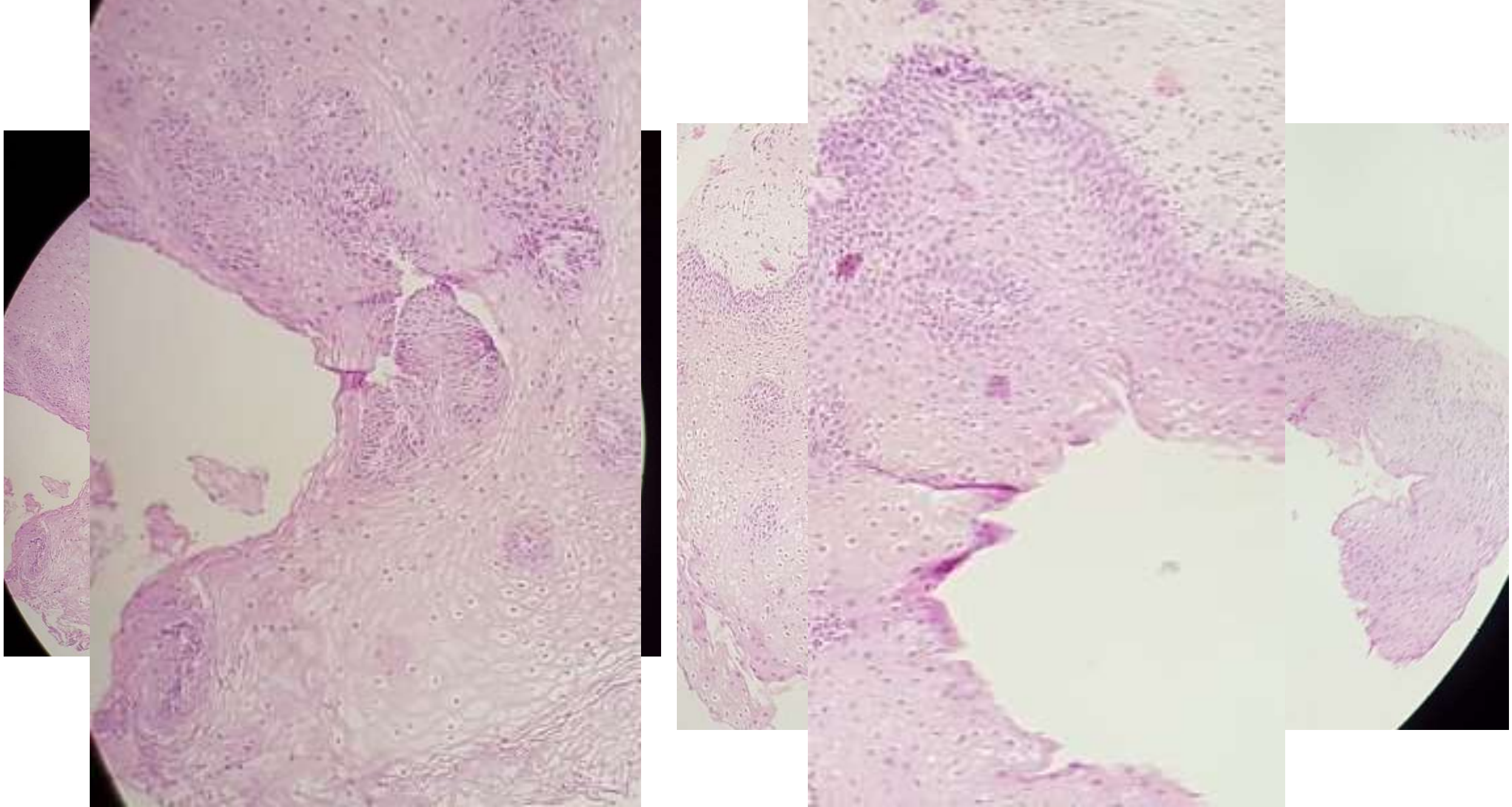
Follow-up at 2 months – 2 Wks post 2nd Tx

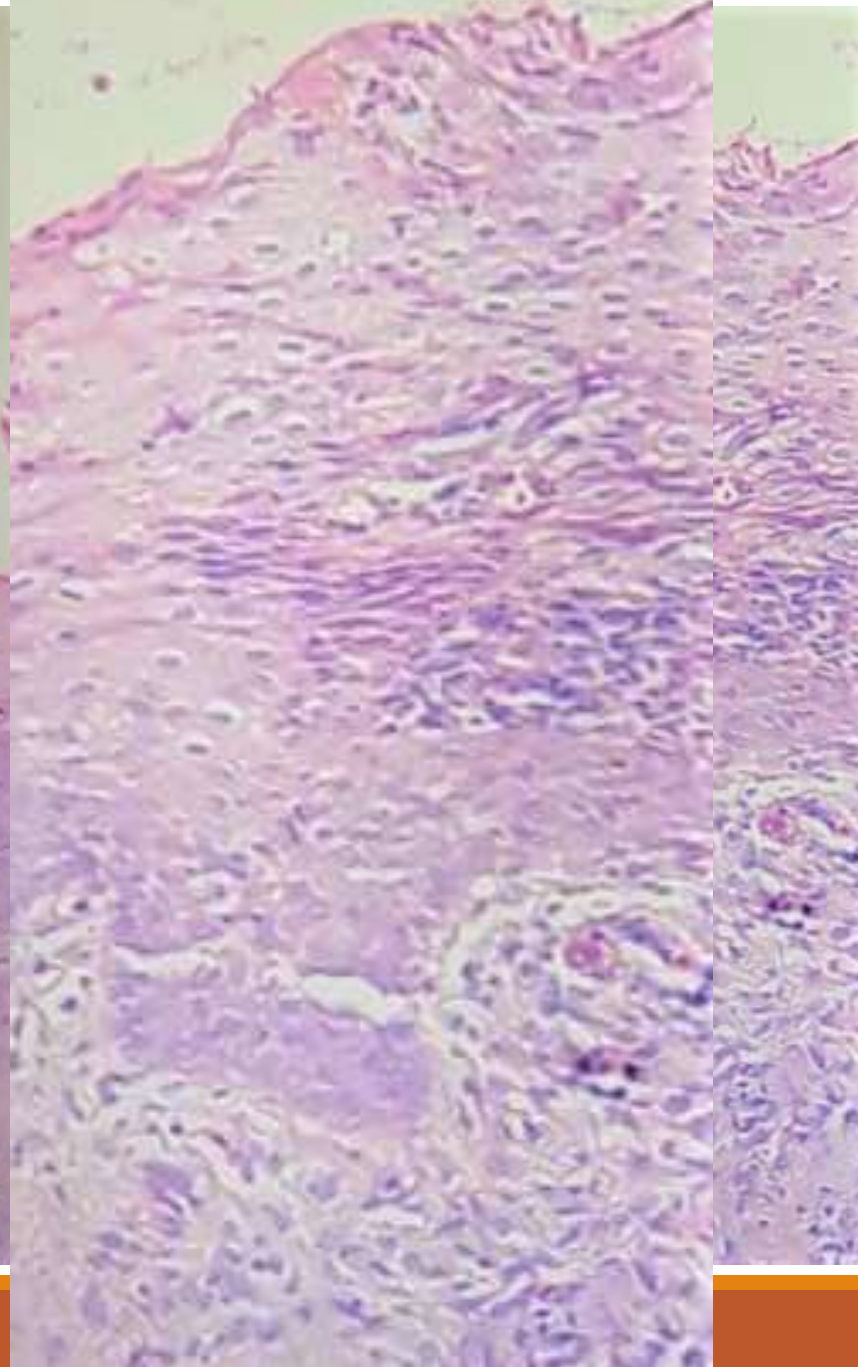
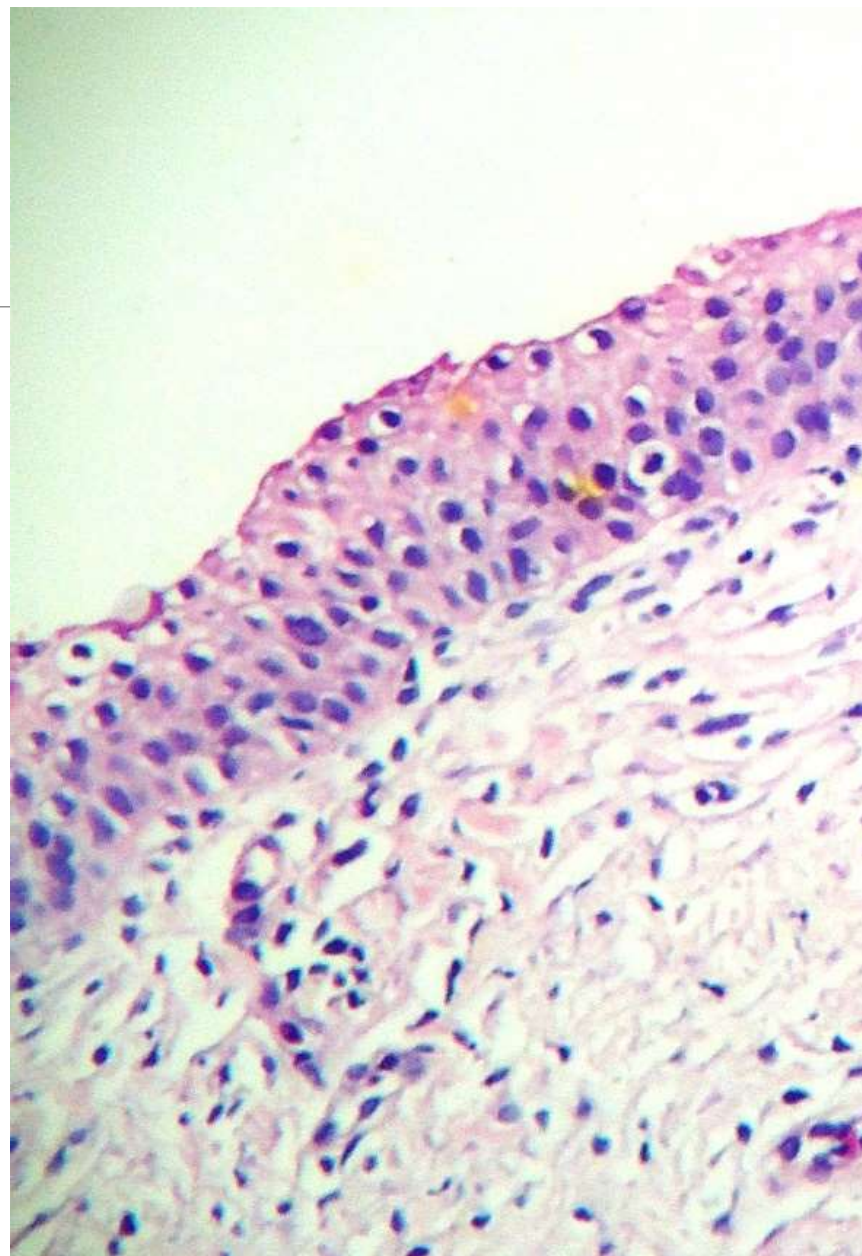


Slides with the same magnification

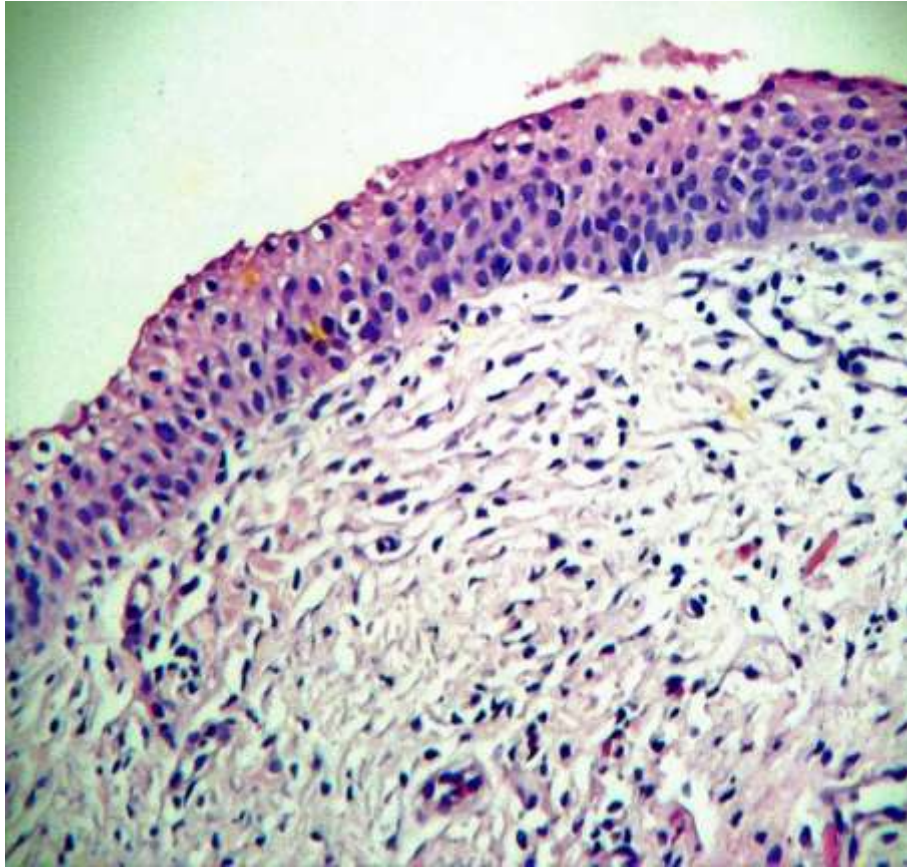
MonaLisa

all from DANA K.G.A., M.D. - Gynecology. Slides are published in Gynecology, 10, 10-11. - Microscopic and photomicrographic modifications of postmenopausal atrophic vaginal tissues after Fractional carbon dioxide laser treatment - J. Gynecol.

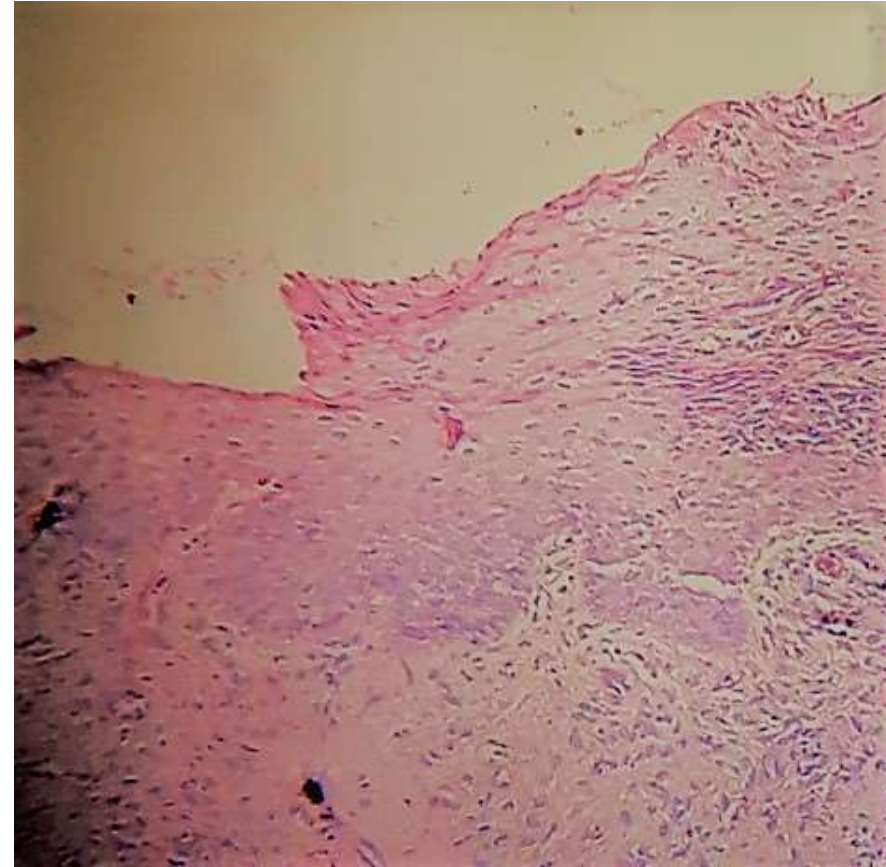




HEMATOXILIN /EOSIN STAINING



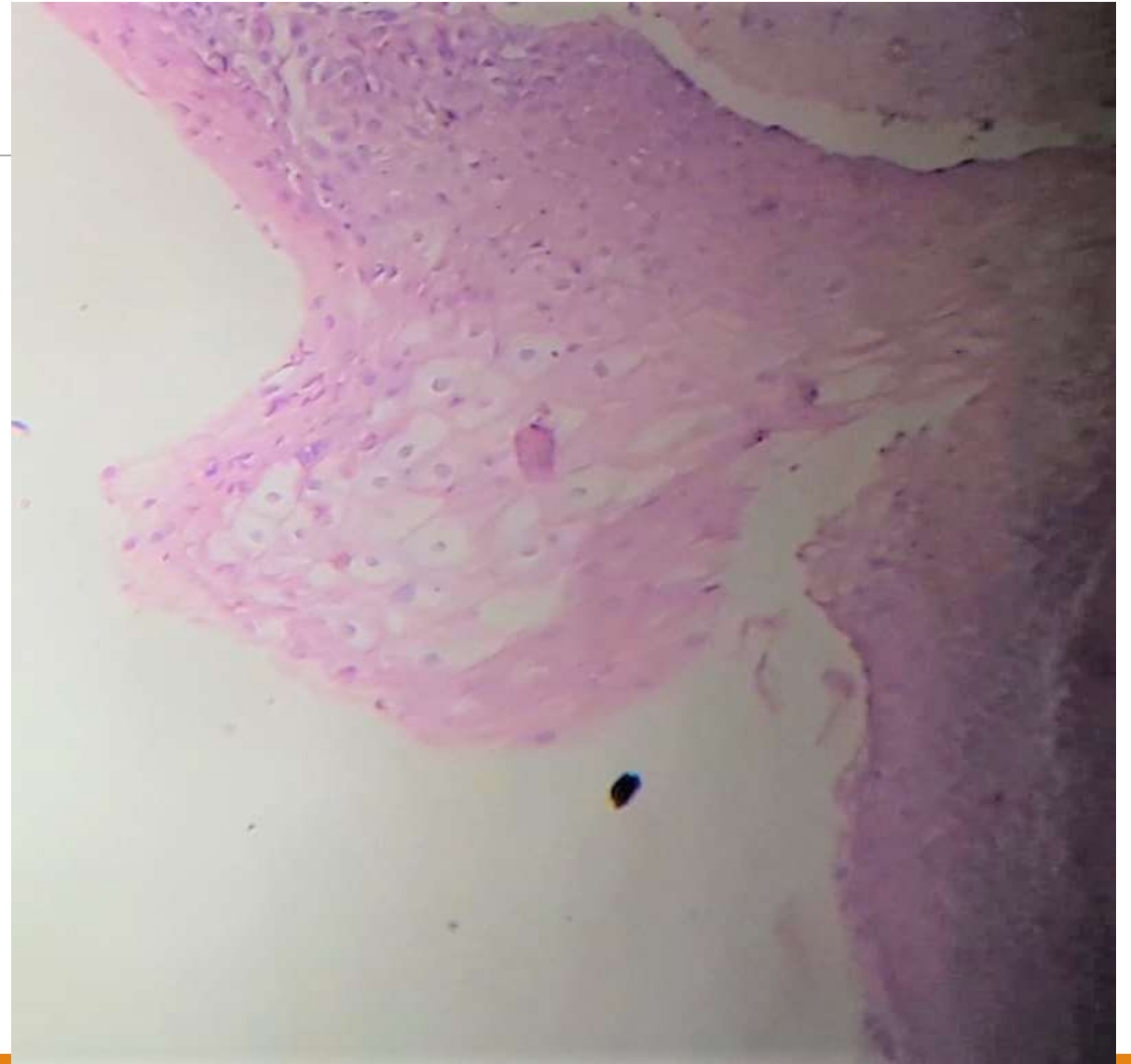
After 21 days of application of
CO2 VLIFT Multi-layered
squamous epithelium
Proper maturing
Increased presence of Glycogen in
the intermediate and superficial
layer showing active metabolic
activity Undulant Basal layer with
presence of papillae that
transport oxygen from the lamina
itself to the superficial epithelium

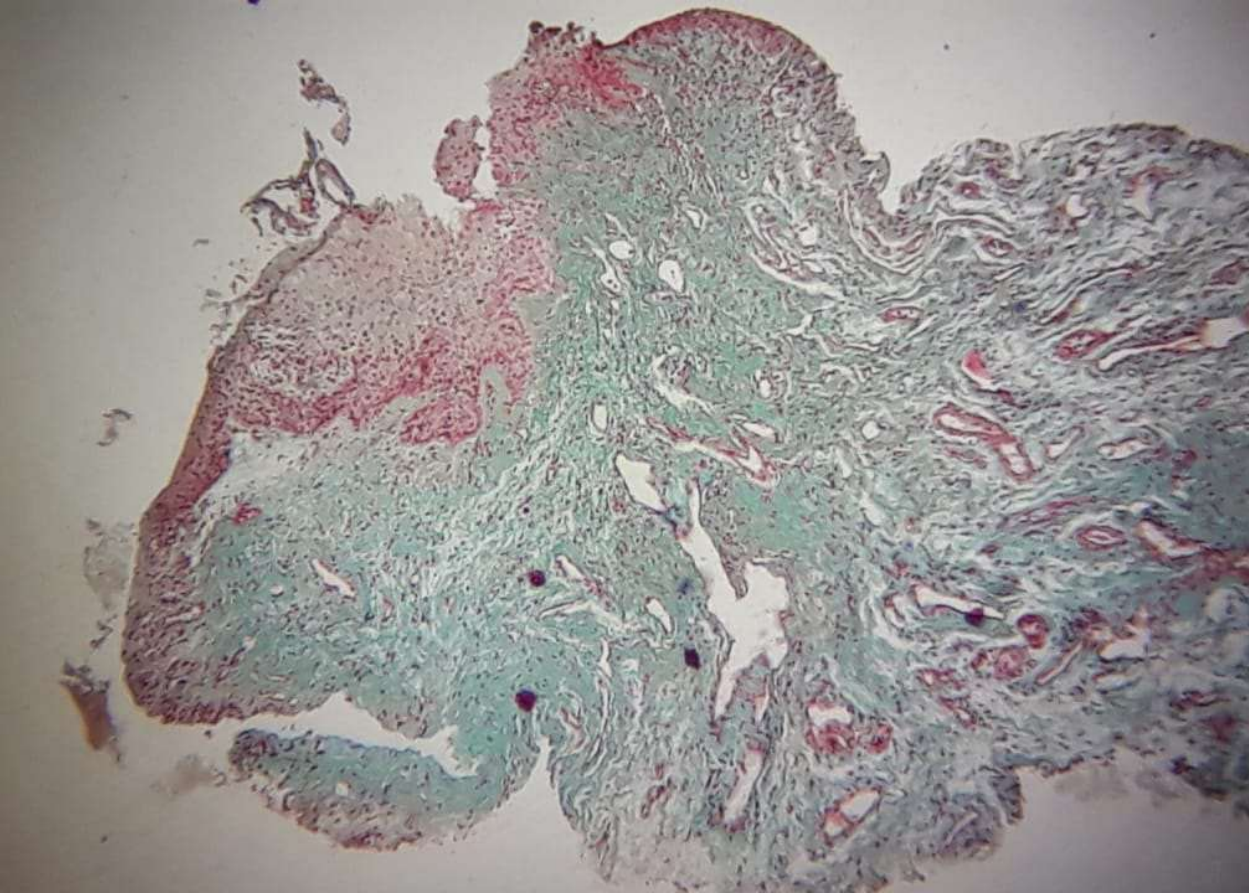


Hematoxilin
eosin

protocol CO2 V

Increased presence of
Glycogen in the
intermediate and
superficial layer that
demonstrates active
metabolic activity



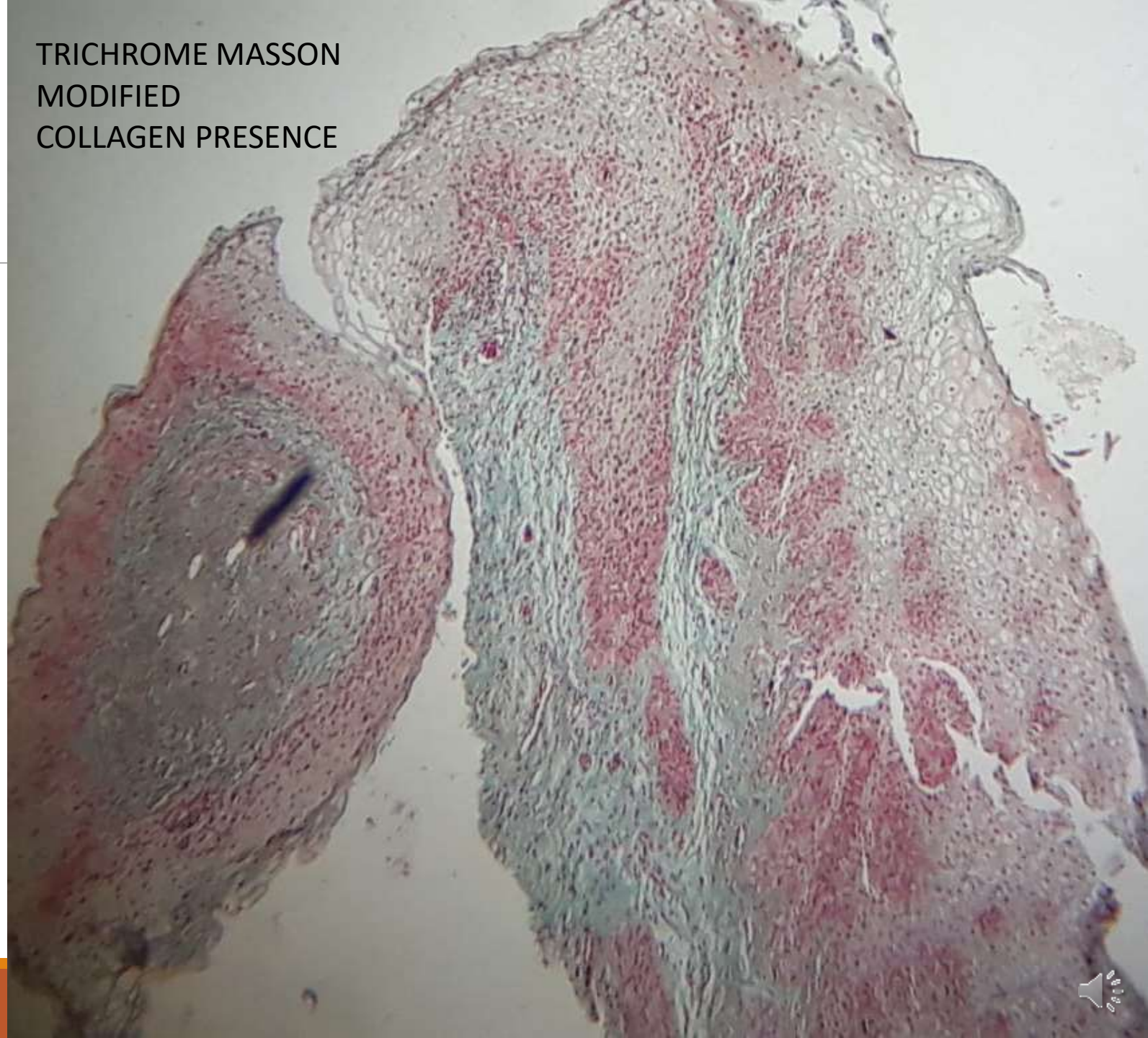


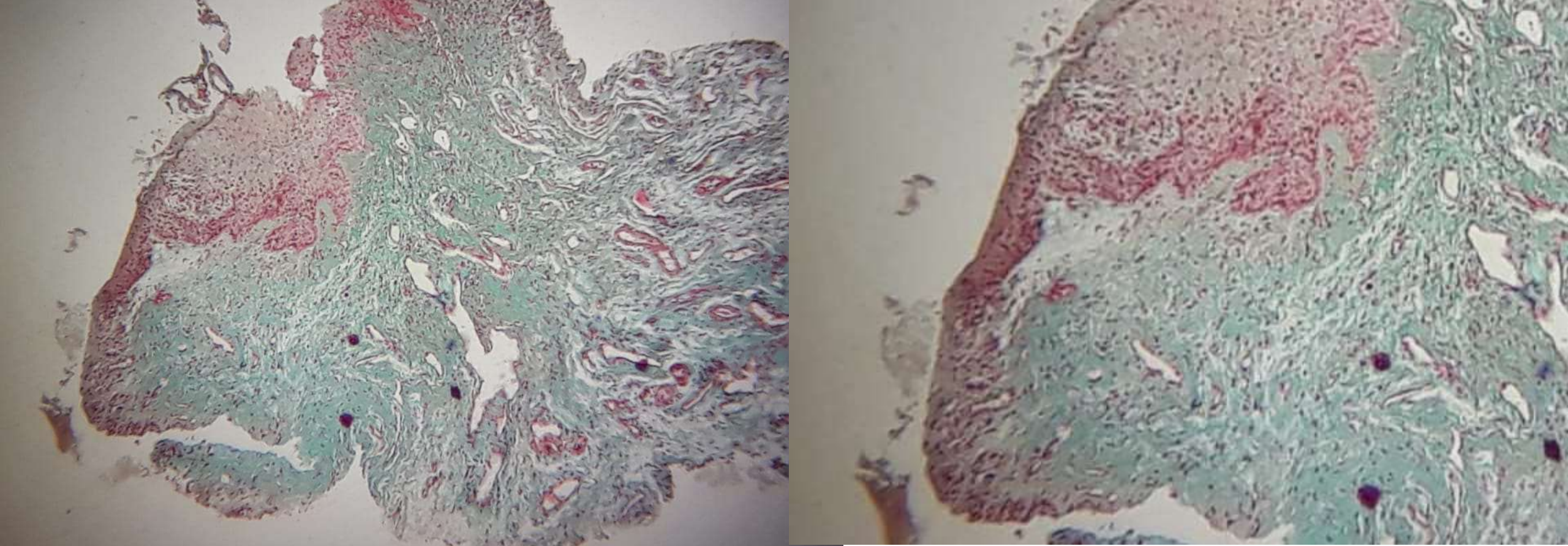
Modified Masson Trichrome
Posterior Vaginal Wall punch biopsy
Before/21 days

Presence of collagen throughout the stroma

TRICHROME MASSON
MODIFIED
COLLAGEN PRESENCE

COLLAGEN
IN ALL THE
STROMA





Multilayered squamous epithelium, adequate ripening, glicogenization of keratinocytes, undulating basal and presence of collagen in all the thickness of the stroma enhanced with the staining Trichrome Mason modified



Sexual and quality of life QOL Impact was evaluated by the Female Sexual Function Index (FSFI).

FSFI Scores in the treatment group (TG) showed an important improvement in all the domains desire, arousal lubrication orgasm satisfaction and pain, all this domains correlated in the clinical evaluation reported by sexuality improvement reported by all the subjects in the study

In a small study prospective using the index of FSFI as an indicator, we observed the evolution of 10 patients, 5 using the CO2Lift (TG) during the day through 10 sessions and five other patients using an ultrasound gel (CG) in the same way. All patients were menopauses with signs of vaginal dryness and the results obtained at 12 weeks of initiation of treatment, (10 weeks of termination) show improvements important in all items of FSFI in the TG.



With the use of gel only have seen significant improvements in patients menopausicas especially in the symptoms of dryness, pain during sexual intercourse (dyspareunia), burning and itching

In patients between 40 and 45 years with normal hormonal activity and disorders in the sexual relationship we could observe improvements in the lubrication, desire, excitement, orgasm and disappearance of the dyspareunia

Conclusions CO2Lift V



CO2Lift V

These are macroscopic changes after used two day after of CO2 V Lift in vulva and vagina



CO2 Lift V

These are macroscopic changes after used two day after of CO2 V Lift in vulva and vagina



After



CO2 Lift V

These are macroscopic changes after used five day after of CO2 V Lift in vulva and vagina (clitoris hypertrophic is because the patients take androgen for the body building)



CO2 Lift V

These are macroscopic changes after used five day after of CO2 V Lift in vulva and vagina



Indications of CO2 V Lift

- Symptoms of GMS
 - Dryness
 - Itching
 - Burning
 - Dyspareunia
- Patients with history of breast cancer who cannot take estrogen and have symptoms of GSM
- Patients with Vaginal Relaxation Syndrome VRS
- Pelvic irradiation or under chemotherapy with symptoms of dryness
- Patients under medication with antiestrogen or inhibitors of aromatase with symptoms of GMS
- Patients under breast feeding with dryness in vagina or dyspareunia.
- Patients with orgasm alterations because the lubrication problems in vagina
- NOTE: the patients can use the CO2 V Lift alone but before need a clear control of the gynecologist



CO2 V Lift therapeutic association with

- Laser CO2 or Erbium
 - Before and after
 - Radiofrequency
 - Before and after
 - Photobiomodulation LED
 - Before and after
 - Micrografting and nanofat
 - Before and after
 - PRP
 - Before and after
- In the treatment associations the CO2 V Lift has the properties to prepare the tissues for the best action of the different devices or techniques, when it is used three weeks before the application of the treatment chosen at the reason of three sessions per week.
 - After the treatment the CO2 V Lift increases the results if it is used from the 4th day of the treatment done at the reason of three sessions per week for three weeks. Maintenance can be done with a weekly CO2 V Lift session during the first two months of maintenance and a monthly session for the remaining 4 months.



Conclusion

- There is group of patients with GSM & VRS that, either don't have a surgical indication, or do not want an invasive procedure, such patients would benefit from this new alternative, that is non-invasive, has no surgical recovery or down-time and carries little to no risk





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