

# CO<sub>2</sub> LASER SURGERY OF THE LOWER GENITAL TRACT IN WOMEN: RESULTS OF POST-OPERATIVE TREATMENT WITH VITAMIN A + E GELATIN MIXTURE.

I. Bruno, C. Fischetti, P. Inghirami, R. Senatori, A. Bacigalupi

Department of Colposcopy and Laser Surgery in Gynecology  
Quisisana Clinic, Rome (Italy)

*Received:* May 20, 1991

**Key words:** Vitamin A; Vitamin E; Gelatin; Laser Treatment; H.P.V.; Laser Surgery; Condylomathosis Treatment; Genital Mucous Membrane;

---

## Synopsis

The viral pathology of the lower genital tract has gained in importance because of the role of H.P.V. (papilloma/virus) in the genesis of carcinoma of the cervix.

Laser surgery seems to be the most effective treatment available for condylomatosis of lower genital tract in women.

Despite the benefits of laser surgery we deem it useful to reduce post-operative side effects and help the mucous re-epithelization. After laser treatments (108 patients) we administered a collagen activated vitamin A + E gelatin, with 3-4 daily applications for 3 weeks. The use of this gel helps healing and re-epithelization reducing any side-effects.

---

## Riassunto

Il controllo della patologia dei bassi genitali ha assunto molta importanza dato il ruolo svolto dal papilloma virus (HPV) nella genesi del carcinoma della cervice.

La chirurgia laser sembra essere il migliore trattamento attualmente disponibile nelle condilomatosi del basso tratto genitale femminile. Per facilitare la riepitelizzazione delle mucose e ridurre gli effetti collaterali del trattamento laser è stato utilizzato un gel a base di vitamina A ed E che veniva applicato 3/4 volte al giorno per 3 settimane. I positivi risultati ottenuti su 108 pazienti incoraggiano l'uso di questa nuova terapia topica a completamento del normale trattamento laser.

Over the last few years, the viral pathology of the lower genital tract has gained in importance because of the role of papillomavirus (H.P.V.) in the genesis of carcinoma of the cervix .

Gynecologists have therefore committed themselves to the early diagnosis of viral infection and injury.

The changes in sex habits and the improvements in colposcopic diagnostics has led to a steady increase in the incidence of the disease over the last few years.

Because of the young age of patients and the higher incidence of nulliparity, the choice of treatment is fundamental for healing as well as for full restitutio ad integrum of the anatomy and physiology of the tissues.

Laser surgery is the best treatment available, both for its therapeutic achievements and its few intra- and post-operative side effects. No specific anti-viral drugs yet exist.

In addition, compared with other methods of physical destructive therapy (DTC-cryotherapy), laser surgery seems to have less operative aftermath.

Despite the benefits of laser surgery, we deem it useful to resort to drugs to reduce post-operative side effects and help re-epithelization as much as possible. (1-5)

## Materials and Methods

From May through September 1990, at the Laser Surgery Center of the Quisisana Clinic in Rome, 108 women with condylomatosis of the lower genital tract underwent CO<sub>2</sub> laser out-patient treatment.

Patients were aged 16 to 51, with the average of 31.5 years.

Our diagnostic standard envisaged exo- and endo-cervical cytology, colposcopy and a possible ad-hoc biopsy.

Surgery consisted of brushing at a depth of 1-2 mm inside the vagina and/or external genitalia. Anaesthesia was administered locally with 2% carbocain.

The best time for treatment is before menstruation, to give enough time for repair before the next menstruation.

In 23 patients (21.3%) injuries were detected only in the vagina, while 31 patients (28.7%) reported vulva injuries. In the remaining 54 (50%), injuries were vulvo-vaginal, mainly florid condylomatosis. (Fig. 1).

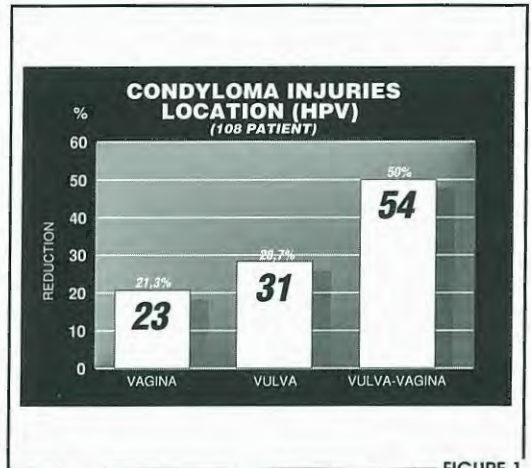


FIGURE 1

Fig. 1 Condyloma injuries location(HPV) (108 Patients)

After laser treatment, we administered a collagen activated Vitamin A + E mixture in a special highly penetrative gel vehicle (\*) (Vitamin A Palmitate 0.25% - Vitamin E Acetate 0.4%, gel vehicle q.s.) Gel administration was local, with 3-4 daily applications for 3 weeks. The preparation was chosen for the fundamental role of vitamin in re-epithelization. This vitamin also plays a major role in differentiation of mucus-secreting and keratinizing epithelium. Vitamin A is known to stimulate mucus secretion in basal epithelial cells. (6-9-10)

Patients were followed-up monthly for three months, using the diagnostic procedures previously described. Repair was appraised a 1 to 3 score for fair-good-very good re-epithelization.

(\*) Elageno A gel - Mavi Sud.

## Results

Healing was appraised at the 1<sup>st</sup> control one month after vaginal and/or vulval laser treatment. The treatment period for the 108 patients ranged from May to September. For 89 patients (82.4%) at the 2<sup>nd</sup> control, the treatment period ranged from May to August. The 3<sup>rd</sup> control was made in the period from May to July over 69 patients (63.8%). (Fig. 2)

The complete follow-up is still under way for the remaining 39 (36%) patients and insists over a relatively recent period.

After a month of treatment, 5 (4.6%) of the 108 patients showed a fair re-epithelization, 22 patients (20.4%) a good re-epithelization, and 81 patients (75%) a very good repair process. At the 2<sup>nd</sup> control of 89 patients, 3 patients (3.4%) scored repair level 1, 7 patients (7.8%) scored 2 and 79 patients (88.8%) scored 3. The

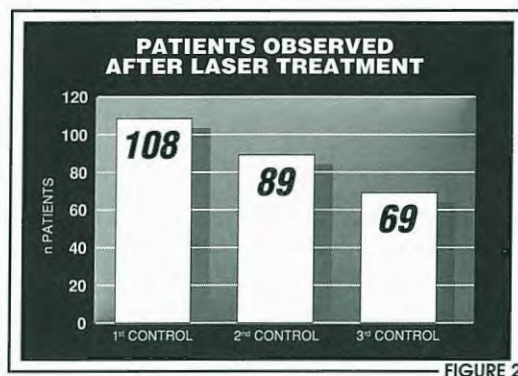


FIGURE 2

Fig. 2 Patients Observed After Laser Treatment

third-month control focused on 69 patients. One of them (1.5%) showed fair re-epithelization (score 1), 2 (2.9%) showed good re-epithelization (score 2) and 66 patients (95.6%) showed very good-epithelization with full restitutio ad integrum (score 3). (Fig. 3)

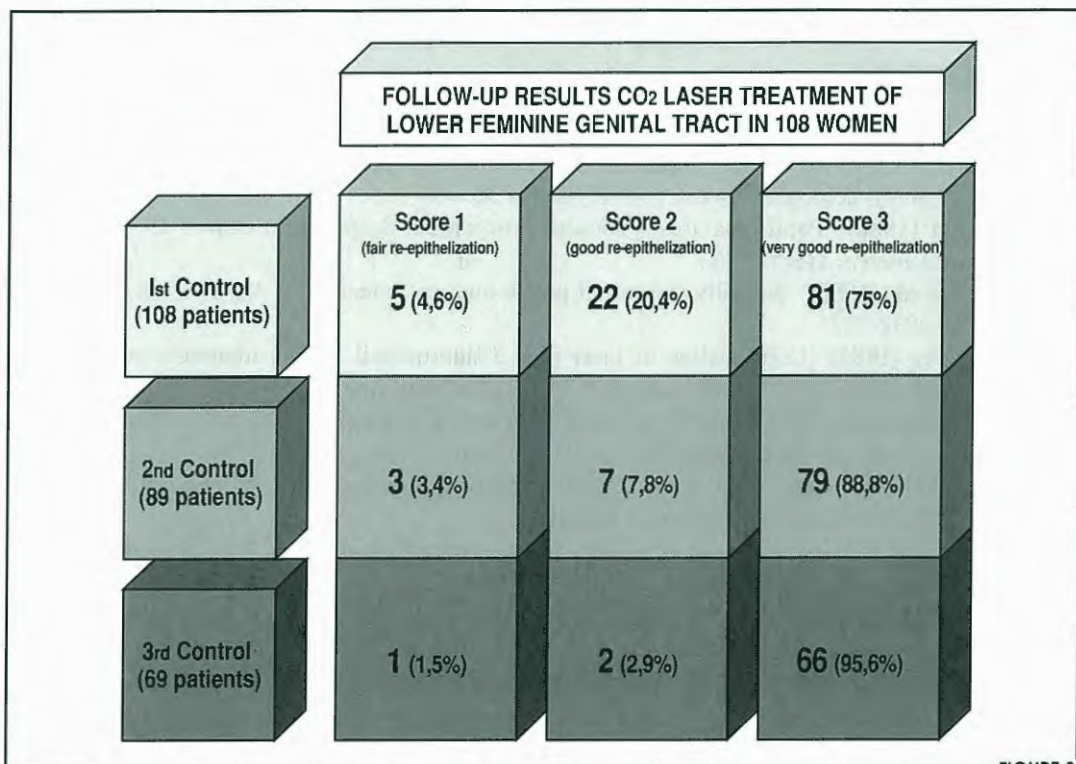


FIGURE 3

Fig. 3 Follow-up Results CO<sub>2</sub> Laser Treatment of Lower Feminine Genital

In summary good results at the 1<sup>st</sup> control were seen in 103 patients, that is 95%.

At the 2<sup>nd</sup> control, 86 (96.6%) patients scored repair levels 2 and 3.

Finally, at the 3<sup>rd</sup> control, the success rate was 98.5%, that is 68 out of 69 patients.

CO<sub>2</sub> laser surgery proved helpful in healing and for the full restitutio ad integrum of treated surfaces.

The administration of substances such as Vitamin A gel accelerated re-epithelization and thus significantly reduced side effects of treatment.

## Conclusions

In the authors' opinion, CO<sub>2</sub> laser surgery is the most effective treatment available for condylomatosis of lower genital tract in women. Because of the young age of patients, the aim is to achieve healing in the shortest possible time with physiological recovery of the vaginal functions and minimal side effects. Laser surgery has only rarely intra- or post-operative complications. Not with standing these benefits, we deem it useful also to resort to additional preparations to help healing and re-epithelization and reduce any side-effects, however scarce. The use of this Vitamin A + E gel in the post operative period meets these requirements.

## References

- 1.A. Schneider A. et al. (1985) "Papillomavirus infections of the lower genital tract: detection of viral DNA in gynecological swabs", *Int. J. Cancer* **35**: 443
- 2.G. Guillet (1988) "Papillomavirus, papulose bowenoide, dysplasie et cancer du col", *ANN. Dermatol. Venereol.***115**:515-517
- 3.R. Reid et al. (1987) "Sexually trasmitted papillomavirus infections", *Arn J. Obstet. Gynecol.* **156** (vol.1):212-222
- 4.H.B. Krebs (1988) "Combination of laser plus 5-fluorouracil for the treatment of extensive genital condylomata Acuminata", *Lasers in surgery and medicine* **8**: 135-138
- 5.J. Paavonen et al. (1988) "Colposcopic manifestations of cervical and vaginal infections", *Obst. e Gynecol. Survey* **43** (vol.7) 373-381
- 6.A. Jarrett (1974) "Ageing in dermis", *Physiology and Pathophysiology of the skin* (vol.3) p.911 et seg. Ed. A. Jarrett Academic Press, London
- 7.F. Chytil (1983) "Vitamin A and skin", *Biochemistry and Physiology of the skin* (vol.2) p. 1187 L.A. Goldsmith Ed., Oxford University Press
- 8.A. Jarrett (1988) "Ageing of the mucous membranes", in: P. Morganti, W. Montagna Editors "A new look at old skin" *Cosmetic Dermatology* (vol.1), International Ediemme, Roma
- 9.A. Jarrett (1989) "The action of vitamin A on skin and mucous membranes", *J. Appl. Cosmetol.* **7**: 33-38
- 10.R. Forleo, F. Mastroianni (1990) "The vaginal mucosa, and personal higyene" *J. Appl. Cosmetol.* **8**: 65-76