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CO₂-laser therapy in women with severe symptoms of vaginal atrophy: a pilot histopathological study

Eleni Pitsouni^{1,*}, Themis Grigoriadis¹, Dimitris Zacharakis¹, Aneliki Tsiveleka², Eugene Danas³, Stamatios Theocharis³, Stavros Athanasiou¹

¹ Medical School, National and Kapodistrian University of Athens, Urogynecology Unit First Department Of Obstetrics and Gynecology, "Alexandra" Hospital, Medical School, National and Kapodistrian University of Athens, Athens, Greece

² "Alexandra" Hospital, Cytology Department, Athens, Greece

³ University of Athens Medical School, First Department of Pathology, Athens, Greece

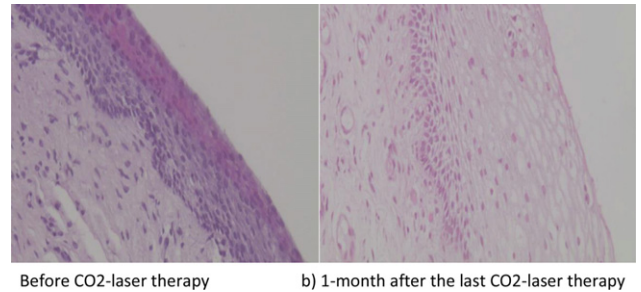
Introduction and aim of the study: CO₂-Laser therapy represents a novel proposal for the vaginal atrophy (VA) management.1-33 Nevertheless, lack of relevant histopathological studies regarding its effect on the vaginal epithelium exist. The aim of our study was to assess the alterations of vaginal epithelium thickness (VE-Thick) following CO₂-Laser therapy in postmenopausal women with severe VA-symptoms.

Materials and methods: Three-therapies/month were applied in 26 women with severe VA-symptoms. Primary outcome of the study was the evaluation of VE-Thick. Secondary outcomes involved: Vaginal Maturation Value (VMV), Vaginal Health Index Scale (VHIS), vaginal pH and 10-cm Visual Analogue Scale of symptoms' severity (overall, dyspareunia, dryness, burning, itching, dysuria). Assessment was performed at baseline and 1-month after last therapy.

Results: VE-Thick, VMV and VHIS were significantly increased, while Vaginal pH and severity of all symptoms were significantly decreased post-CO₂-Laser therapy.

Interpretation of results: CO₂-Laser may result in alleviation of VA-symptoms potentially through the restoration of local pathophysiology.

Conclusions: CO₂-Laser therapy increases significantly the VE-Thick resulting in alleviation of VA-symptoms. More studies are needed to confirm our results (Tables 1 and 2).



References

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Effect of episiotomy on pelvic floor injuries and urogynecological complaints

Leonie Speksnijder^{1,*}, Daniella M.J. Oom¹, Eric A.P. Steegers², Anneke B. Steensma¹

¹ Erasmus Medical Centre, Department of Obstetrics and Gynecology, Division of Urogynecology, Rotterdam, Netherlands

² Erasmus Medical Centre, Department of Obstetrics and Gynecology, Division of Obstetrics and Prenatal Medicine, Rotterdam, Netherlands

Introduction and aim of the study: Episiotomy has proven to be a protective factor during operative vaginal delivery and restrictive use during normal vaginal delivery for developing an anal sphincter tear [1–3]. This study evaluates if an episiotomy also might reduce the risk of obtaining other pelvic floor injuries; i.e. levator avulsion (LA) and/or levator ballooning, and urogynecological complaints.

Materials and methods: A prospective observational cohort study of 204 primiparous women with a spontaneous vaginal delivery between 2012 and 2015 being delivered in a general hospital in the Netherlands. 103 of these women had undergone an episiotomy. Validated urogynecological questionnaires and transperineal 3D/4D ultrasound were completed between 6 and 33 months after delivery. Statististical analysis was performed using univariate and multiple logistic regression analysis.

Results: LA was identified in 27 (22.8%) of the 103 women whom had undergone an episiotomy and in 23 (26.2%) of the 101 women who had not ($p = 0.529$). There was also no significant difference in

Table 1

Baseline characteristics of the women included in the study.

| Number | 26 |
|---------------------------------------|-------------|
| Age | 56.6 ± 3.3* |
| Years since the last menstrual period | 9.3 ± 6.1* |
| Body mass index | 25.4 ± 3.8* |
| Educational level | |
| University | 23/26 (89)* |
| Secondary | 3/26 (11)* |
| Smoking | |
| Yes | 7/26 (27)* |
| No | 19/26 (73)* |

Data are displayed as mean ± SD and as percentage.

Table 2

Changes on vaginal epithelium thickness and signs/symptoms of Vaginal Atrophy following CO₂-Laser therapy.

| | Baseline | 1-month after 3 CO ₂ -laser therapies | p-value |
|---|--------------|--|---------|
| Thickness of the vaginal epithelium (µm) | 125.7 ± 53.4 | 179.0 ± 60.8 | <0.001 |
| Vaginal Maturation Value | 13.1 ± 17.0 | 40.6 ± 13.4 | <0.001 |
| Vaginal Health Index Scale | 7.9 ± 1.8 | 19.4 ± 3.3 | <0.001 |
| Vaginal pH | 5.4 ± 0.6 | 4.6 ± 0.4 | <0.001 |
| 10-cm Visual Analogue Scale of the vaginal symptoms | | | |
| Overall | 9.6 ± 0.8 | 4.0 ± 2.2 | <0.001 |
| Dyspareunia | 9.6 ± 0.8 | 4.0 ± 2.2 | <0.001 |
| Dryness | 9.1 ± 1.0 | 3.2 ± 1.7 | <0.001 |
| Burning (n = 6) | 6.33 ± 3.4 | 0.7 ± 1.2 | 0.03 |
| Itching (n = 5) | 6.2 ± 3.8 | 1.8 ± 1.8 | 0.04 |
| Dysuria (n = 6) | 1.8 ± 0.8 | 0.3 ± 0.5 | 0.02 |