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# The Safety and Efficacy of Ablative Fractional Er:YAG Laser Treatment for Vulvar Lichen Sclerosus

**Michael Coyle, DO, FACOOG, FPMRS**
Coyle Institute, Pensacola, FL, USA

ISSWSH International Society for the Study of Women's Sexual Health, Inc.

## Introduction

Vulvar lichen sclerosus (VLS) is a chronic skin condition that predominantly affects the anogenital skin.(1) It is characterized by marked inflammation, epithelial thinning, and distinct dermal alteration; after an initial inflammatory phase, there is chronic scarring and skin atrophy.(2)

Traditional treatment and management has incorporated topical steroid medications, immunomodulators, and supportive therapy.(3)

Studies have shown laser therapy as viable treatment modality for VLS.

The purpose of this study is to show the effectiveness of ablative fractional 2940nm Er:YAG laser treatment for VLS.

## Aim

To evaluate the safety and efficacy of ablative fractional 2940nm Er:YAG laser for treatment of Vulvar Lichen Sclerosus (VLS)

## Method

- Female subjects with biopsy proven active VLS were included
- Symptoms of VLS – dryness, itching, burning, bleeding, soreness, easily tears, ulcerated lesions
- Demographics, depth of disease, vulvovaginal symptoms (VSQ), 7-point global overall scores for vulvar atrophy symptoms were recorded at baseline, treatment and follow-up visits
- Biopsies were collected at baseline and 3 month follow-up
- Photographs taken at baseline, before treatment and follow-up
- Subjects received three treatments scheduled 4 weeks apart
- Treatment parameter based on depth of disease - depth 250-850um, 11% coverage, 1-2 passes
- Treatment numeric pain scores (0-10) and complications were recorded
- Follow-up was performed at one, three and six months post third treatment
- Paired t-test was used for data analysis

## Results

Fifteen subjects ages 63±9.6 years were treated at a single center. All subjects had mild to moderate symptoms of VLS.

This poster reports finding of seven subjects at one and three months follow-up. Median numeric pain scores with the treatment was 5.7±2.3. No complications occurred. All conditions measured demonstrated significant improvement over baseline. Refer to figures 1 and 2, tables 1-4.

Three month biopsy data showed 50-100% improvement over baseline in VLS symptoms.

Table 1: 7 point global scale for vulvar atrophy symptoms scores baseline and follow-up

| Conditions | Baseline (mean ± std) | Follow-up (mean ± std) | p values |
|---|---|---|---|
| Dryness | 4.50 ± 2 | 0.80 ± 0.44 | 0.03 |
| Itching | 5.00 ± 1.7 | 2.90 ± 1.8 | 0.02 |
| Burning | 4.33 ± 1.2 | 2.70 ± 1.9 | 0.05 |
| Bleeding | 2.17 ± 2 | 2.20 ± 2 | 0.2 |
| Soreness | 4.50 ± 1.8 | 2.60 ± 2 | 0.01 |
| Easily tears | 5.83 ± 1.2 | 2.60 ± 2 | 0 |
| Ulcerated Lesion | 4.50 ± 2.4 | 2.20 ± 2 | 0.03 |
| Painful intercourse | 4.00± 2.5 | 2.40 ± 2 | 0.05 |

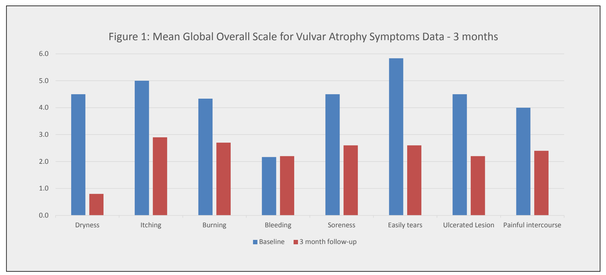



Table 2: 7 point global scale for vulvar atrophy percent improvement

| Conditions | 1 month follow-up | 3 months follow-up |
|---|---|---|
| Dryness | 48% | 82% |
| Itching | 46% | 42% |
| Burning | 53% | 37% |
| Bleeding | 47% | 39% |
| Soreness | 57% | 43% |
| Easily tears | 60% | 54% |
| Ulcerated Lesion | 50% | 54% |
| Painful intercourse | 53% | 47% |

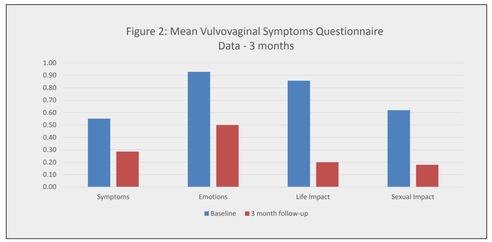


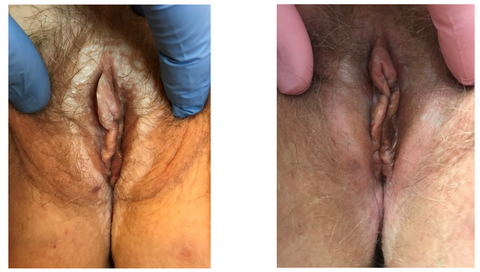

Table 3: VSQ percent improvement

| Condition | 1 month follow-up | 3 months follow-up |
|---|---|---|
| Symptoms | 56% | 48% |
| Emotions | 61% | 42% |
| Life Impact | 60% | 72% |
| Sexual Impact | 74% | 71% |

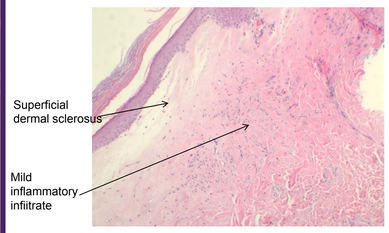
Table 4: VSQ scores baseline and follow-up

| Condition | Baseline (mean ± std) | Follow-up (mean ± std) | p values |
|---|---|---|---|
| Symptoms | 0.55 ± 0.45 | 0.29 ± 0.25 | 0.06 |
| Emotions | 0.93 ± 0.1 | 0.51 ± 0.26 | 0.008 |
| Life Impact | 0.86 ± 0.14 | 0.2 ± 0.08 | 0.007 |
| Sexual Impact | 0.62 ± 0.22 | 0.18 ± 0.1 | 0.07 |

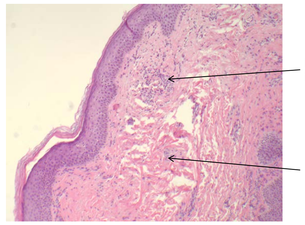
*Before 1st treatment* *After 2 treatments*



*Photos Courtesy of Michael Coyle, DO, Urogynecologist, Coyle Institute*




Baseline biopsy – classic changes of lichen sclerosus with superficial dermal sclerosus and underlying chronic inflammation




3 month follow-up biopsy – No evidence of Lichen sclerosus
Mild chronic inflammation with predominantly normal dermal collagen

## Conclusion

The data indicates that the ablative fractional 2940nm Er:YAG laser appears to be a safe and effective treatment method for VLS. Additional follow-up data and comparative study with larger sample size are needed.

## Acknowledgements

1. C. LaRosa, MD, A. Chiaravalloti, MD, S. Jinna, Laser treatment of medical skin disease in women; *Int J Womens Dermatol.* 2017 Sep;3(3):131-139
2. Vyas A. Genital Lichen Sclerosus and its Mimics. *Obstet Gynecol Clin North Am* 2017;44(3):389-406
3. Shahriari M, Makkar H, Finch J. Laser therapy in dermatology. *Clin Dermatol* 2015;33(6):681-6