

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

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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

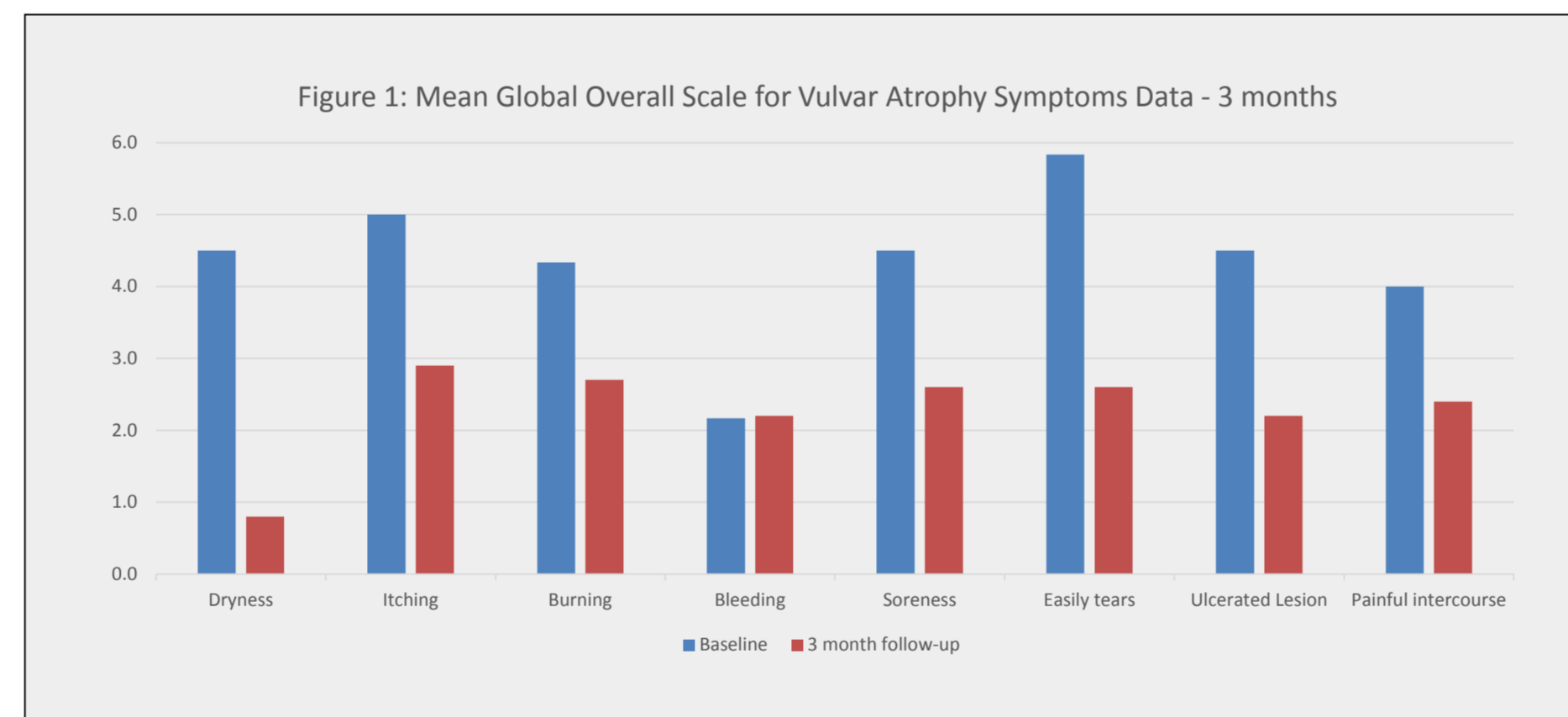


Table 2: 7 point global scale for vulvar atrophy percent improvement

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%

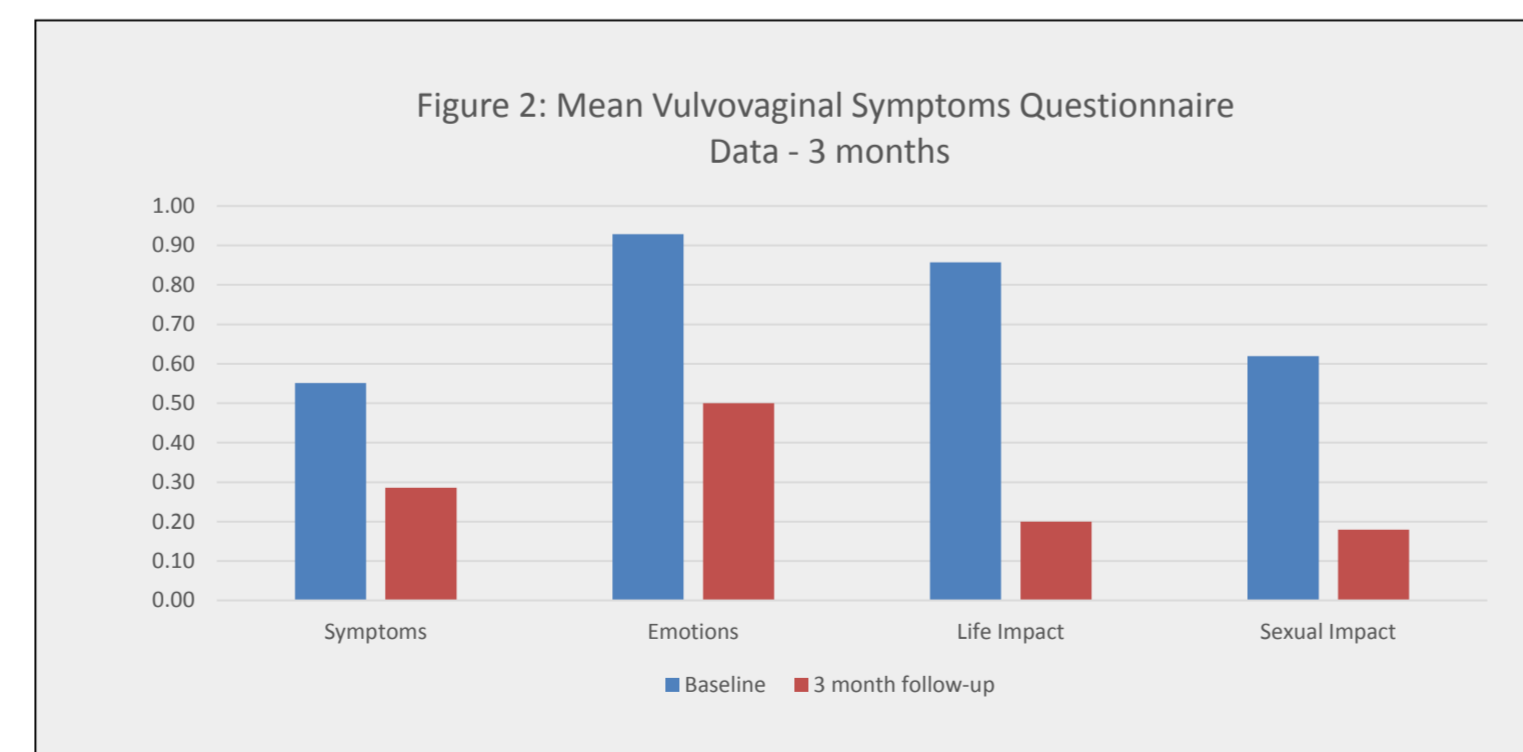


Table 3: VSQ percent improvement

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

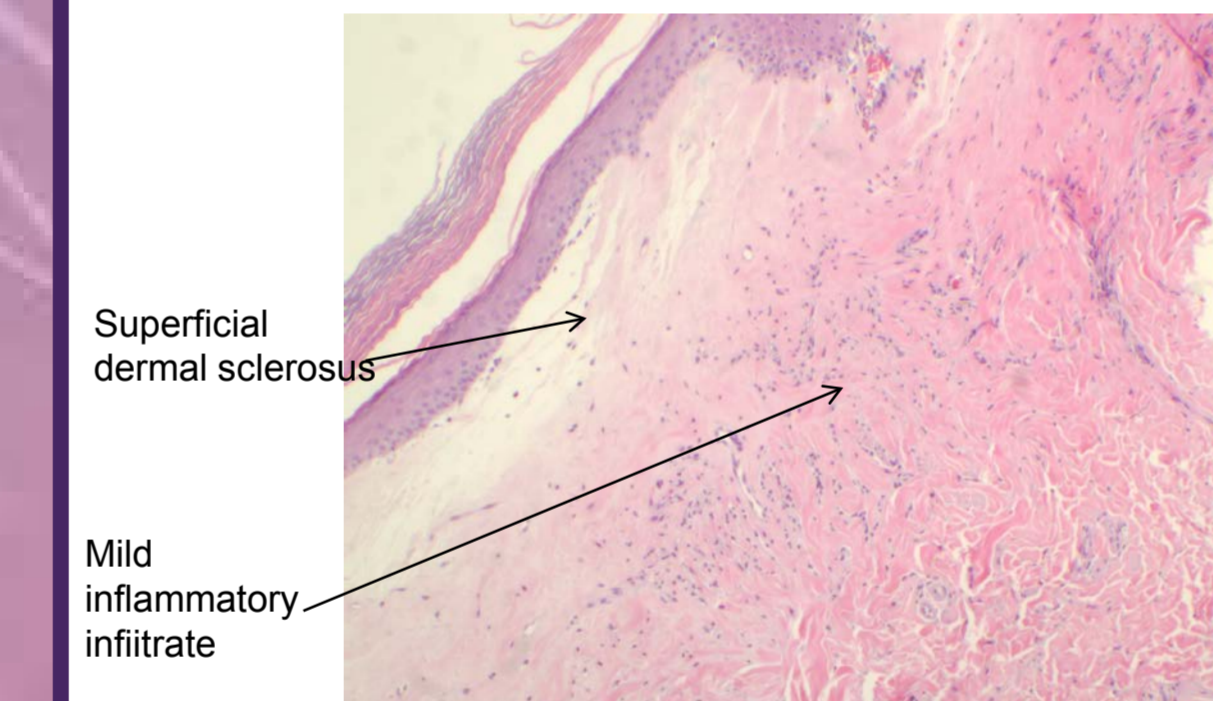
Before 1st treatment



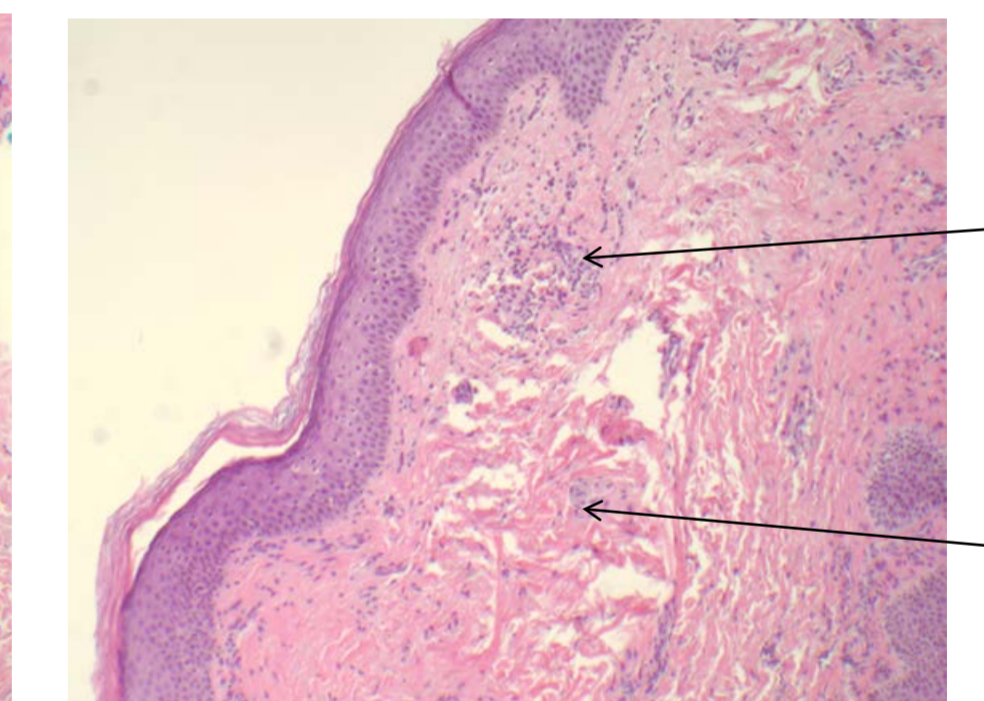
After 2 treatments



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



Baseline biopsy – classic changes of lichen sclerosus with superficial dermal sclerosis 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

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