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Vulvar Lymphangioma Circumscriptum Treated With Fractional Ablative Erbium:Yttrium Aluminium Garnet Laser

Joy Makdisi, MD, Sebastien de Feraudy, MD, PhD, and Christopher B. Zachary, MBBS, FRCP

Department of Dermatology University of California Irvine, California

A 51-year-old woman presented with sepsis and a 2-year history of progressive, painful vulvar swelling. Six years earlier, the patient had undergone hysterectomy, pelvic lymph node dissection, and radiation therapy for treatment of squamous cell carcinoma of the cervix. Physical examination showed clusters of translucent, weeping papulovesicles, and several verrucous nodules on the labia majora (Figure 1A). Blood cultures revealed *Streptococcus viridans* bacteremia, her third episode of bacteremia with this organism. Biopsy demonstrated a dermal proliferation of thin-walled dilated lymphatic channels lined by smooth muscle and surrounded by lymphocytes and plasma cells. These findings confirmed the diagnosis of acquired vulvar lymphangioma circumscriptum, which has been described as a rare complication of altered lymphatic drainage secondary to surgery, adjuvant radiation, and lymph node dissection for cervical cancer.¹ Abnormal drainage of these dilated lymphatic channels became a nidus of infection and the source of recurrent sepsis. The persistent vulvar fluid drainage caused her significant emotional distress and limited her daily activities. After antibiotic treatment, she was referred for ablative laser surgery of the vulvar lesions. After discussion of the risks and benefits of fractional versus fully ablative laser treatment, fractional ablative treatment was selected in pursuit of faster healing time and lower scarring risk, while still stimulating tissue remodeling. She underwent 1 treatment with a fractional ablative 2,940-nanometer erbium:yttrium aluminium garnet (YAG) laser (Sciton ProFractional-XC [Sciton, Inc., Palo Alto, CA]) at an ablative depth setting of 1.2 mm, 22% density, and 430-micron spot diameter, used in 2 passes. Before treatment, the area was anesthetized with 0.2% tumescent lidocaine and epinephrine. In addition, promethazine 25 mg, meperidine 50 mg, and valacyclovir 500 mg were given. Immediately after treatment, clobetasol ointment and a nonstick dressing were applied. Postoperative wound care consisted of dilute vinegar soaks and sitz baths. In addition, she was given prescriptions for acetaminophen/oxycodone, fluconazole 200 mg once, and valacyclovir 500 mg twice daily for 14 days. She declined any postprocedure antibiotics. Four weeks later, her vulvar edema, pain, and drainage had resolved (Figure 1B), and the treatment area was completely healed. At 7-month follow-up, the patient did not have recurrence of fluid leakage nor any recurrent infections; she reported that her results were durable. The patient will plan to follow up every 6 months going forward and if there is significant recurrence, she desires to undergo repeat laser therapy.

Discussion

The patient sought treatment of acquired lymphangioma for cosmesis and palliation of pain, fluid leakage, and recurrent infections. Management is challenging and regardless of treatment modality, recurrence rates are high due to the underlying altered lymphatic drainage and deep lymphatic cisterns. This risk was discussed with the patient, but even a short-term benefit and relief of her symptoms was found to be of such significant value to her quality of life that it merited the possibility of recurrence. Multiple treatment modalities exist, although each has drawbacks. Complete surgical excision has lower recurrence rates, but has a higher rate of scarring, and in this case, surgical intervention would have required vulvectomy and reconstruction.¹ Other less invasive therapies that have been reported in the literature include sclerotherapy, topical imiquimod, radiofrequency, pulsed dye laser, and intense pulsed light. However, the reported efficacy for each of these modalities is variable. Comparatively, full-field CO₂ ablative laser therapy is well described and has been effectively used putatively by vaporizing superficial tissue and sealing the communication channels that connect to the deeper lymphatic cisterns. However, this modality has a lengthy recovery time and high risk of scarring and infections. Fractional ablative lasers limit the tissue damage to small microcolumns, leaving reservoirs of adjacent untreated skin that accelerates wound healing and tissue remodeling and minimizes side effects. The literature on fractionated erbium:YAG for lymphangioma is limited to a single previous case on the extremity.³ More recently, 2 cases have been reported of fractional ablative CO₂ laser therapy for lymphangiomas on the extremities and neck.^{4,5} To the best of the authors' knowledge, this is the first reported case of fractional ablative laser for the treatment of vulvar lymphangioma.

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References

1. Chang MB , Newman CC , Davis MD , Lehman JS . Acquired lymphangiectasia of the vulva: clinicopathologic study of 11 patients from a single institution and 67 from the literature. *Int J Dermatol* 2016; 55:e482–7.26967121
2. Cohen P , Tallon B . Lymphangioma circumscriptum In: Lebwohl MG , editor. *Treatment of Skin Disease: Comprehensive Therapeutic Strategies* (4th ed). Philadelphia, PA: Saunders; 2013 Chapter 137.
3. Tsilika K , Bahadoran P , Passeron T . Superficial lymphangioma treated with fractional ablative laser: a case report with clinical and reflectance confocal microscopy evaluation. *Derm Surg* 2012;39:141–3.
4. Saluja S , Petersen M , Summers E . Fractional carbon dioxide laser ablation for the treatment of microcystic lymphatic malformations (lymphangioma circumscriptum) in an adult patient with Klippel-Trenaunay syndrome. *Lasers Surg Med* 2015;47:539–41.26073570
5. Shumaker PR , Dela Rosa KM , Krakowski A . Treatment of lymphangioma circumscriptum using fractional carbon dioxide laser ablation. *Ped Derm* 2013;30:584–6.

Figure 1.
(A) Before treatment. (B) After treatment with fractional ablative erbium:YAG laser. YAG, yttrium aluminium garnet.