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LETTER TO THE EDITOR

Effective use of a combination of surgical ablative and fractional carbon dioxide laser to treat iatrogenic vulval lymphangiectasia—a case study

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We present the case of a 56-year-old female who was diagnosed with dermatofibrosarcoma protuberrans (DFSP) of the pubic area in 1987. She went through several excision surgeries and recurrences culminating in a radical wide excision and flap repair in 2005. She has shown no evidence of recurrence to date. Since the final surgery she suffered with persistent symptoms of swelling and discomfort of the vulva, leaking fluid, and blood into her underwear. On examination, she had oedema and small vesicles affecting her right labia majora (Fig. 1a). Skin biopsy ruled out recurrence of DFSP and revealed lymphangiectasis and lymphoedema, confirming a diagnosis of iatrogenic lymphangiectasia. She was previously told nothing could be done for this. Lymphangiectasia is an abnormal dilation of lymphatic vessels and can be due to congenital malformation or acquired following tissue injury by trauma or surgery. They are difficult to treat and can often be uncomfortable, leading to leakage of fluid and secondary infection. It has been suggested that carbon dioxide laser therapy may work by not only vapourising the lymphangiectases but perhaps sealing off deeper lymphatic vessels [1].

We decided to try laser ablation of the lymphangiectasia. Under topical (lidocaine 4% cream, LMX4 Cream, Ferndale Pharmaceuticals Ltd, Leeds, UK) and local anaesthetic (lidocaine 2% with adrenaline, xxylocaine 2% with adrenaline, Aspen, Dublin, Ireland), a 10,600-nm carbon dioxide laser (SmartXide Touch, Deka, Florence, Italy) was used first in fully ablative mode to vapourise the lymphangiectatic vessels (power 0.8–2.0 W; 7" surgical handpiece; Smart Pulse). This was followed by fractional ablation of the field (power 8 W; dwell time 500 µs; spacing 500 µm; stack 2; Smart Scan; Deka Pulse). Yellow soft paraffin (100% yellow soft paraffin, Creightons, UK) was applied post procedure. Follow-up at 3 months showed her symptoms to have completely resolved (Fig. 1b). The patient reported the area healed within 1 week, and since then the lymphangiectatic vessels had not recurred. There has been resolution of the lymphoedema with no further perceived swelling or discomfort. There has been no recurrence at 18 months post treatment.

Two cases have also reported success with treating lymphangiectasia of the vulva using a CO_2 laser. The cases described in these studies differed from ours in that they required more than one session with a 1-month interval between each, both cases used a fully ablative CO_2 laser without fractional ablative. Both cases reported no evidence of recurrence after 15 months and 2 years, respectively [2, 3]. A review of 5 women, 3 with vulval lymphangiectasia and 2 with vulval lymphangioma circumscriptum, reported complete resolution of the symptoms within 1 month following 1 treatment with the CO_2 laser. The study used a scanned and defocused CO_2 laser (ESC/Sharplan 40C, Allen-dale, USA). Similar to our case, the patients included in this review only required 1 session, potentially due to using a fractional carbon dioxide laser. However, 2 patients required currette to remove the thermally damaged tissue [4].

Our case joins a growing body of evidence demonstrating that CO_2 lasers can be used to treat vulval lymphangiectasia with good cosmetic results. In particular, we have shown a safe and effective use of a combination of fully ablative and fractional ablative carbon dioxide laser in the treatment of iatrogenic vulval lymphangiectasia requiring only one treatment for complete resolution of symptoms.

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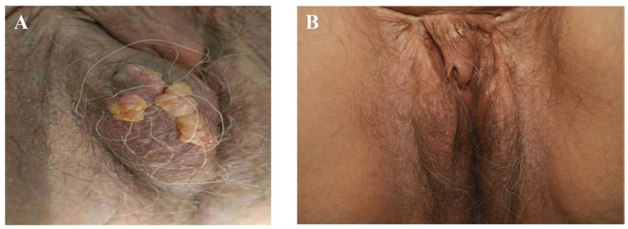


Fig. 1 **a** Vulval lymphangiectasia. **b** Follow-up at 3 months

Author contribution The first draft of the manuscript was written by Florence Robinson. Dr. Daniel Keith reviewed and commented on all previous versions of the manuscript. Dr. Daniel Keith diagnosed this patient and treatment was carried out by Dr. Daniel Keith, Miss Emma Hitchens, and Dr. Kay Thomas. Mr. Antonio Orlando initiated further investigations for this patient.

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Declarations

Ethical approval As this was a retrospective case study, this institution did not require ethics approval prior to publication.

Consent for publication The authors affirm the case participant provided informed consent for publication of the images in Fig. 1a and 1b.

Competing interests The authors declare no competing interests.

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