

Improvement of Facial Hamartomas by Continuous Wave CO₂ Laser Resurfacing in Birt-Hogg-Dube Syndrome

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Abstract

Purpose: Birt-Hogg-Dube syndrome is an autosomal dominant condition that is associated with multiple noncancerous flesh coloured hamartomas that can worsen over time. Intestinal tumours, lung cysts and kidney tumours have also been described. Symptoms of this disease often present in adulthood around the third decade of life and can progressively worsen over time. Most published research centres around the diagnosis and dermatopathology of Birt-Hogg-Dube, which is rare and very few published reports describe successful treatment of the hamartomas.

Methods: A single patient at a single site was treated by one surgeon with a continuous wave fractionated laser (MIXTO Lasering, Lasering USA, San Ramon, CA) with both deep (180 micron) and superficial (300 micron) passes. Superficial passes were maximized in energy intensity.

Results: The patient reported successful reduction in the appearance and size of the facial hamartomas after 90 days. High definition photographs taken before and after highlight the differences of one continuous wave fractionated laser treatment.

Conclusion: Continuous wave fractionated CO₂ laser can be used safely and effectively to reduce the appearance of facial hamartomas related to Birt-Hogg-Dube Syndrome.

Keywords: Birt-Hogg-Dube Syndrome; MIXTO; Fractional CO₂ laser

Case Report

Birt-Hogg-Dube is a syndrome is a rare autosomal dominant genetic disorder that can lead to kidney tumours, renal and pulmonary cyst and most commonly to fibro-folliculomas on the face and upper trunk. Only a few hundred families are said to be affected worldwide. The facial hamartomas generally appear in the 3rd decade of life and in more than 80% of patients with Birt-Hogg-Dube by the 5th decade [1].

Treatment of the facial hamartomas has been attempted by shave, medications, curettage, electrocautery and skin resurfacing by a variety of methods, including laser. The majority of published literature centres on description of the lesions instead of treatment [2-4]. The facial lesions are known to recur even after successful treatment [5].

Fractional continuous wave CO₂ laser is a novel CO₂ utilizing true ablation along with maximal thermal effects for skin tightening. No published literature currently describes treatment of facial papules associated with Birt-Hogg-Dube with this modality. Fractionated CO₂ combines the gold standard of facial resurfacing by incorporated the CO₂ laser but the fractionation gives the patient a safer, more comfortable experience and with less downtime and fewer side effects than traditional CO₂ laser like hyper and hypopigmentation, scarring and persistent erythema.

Discussion

This case report describes one subject's experience. This patient, who was treatment naïve, successfully underwent a fractionated continuous wave CO₂ laser treatment on her face and neck. Treatment was focused on superficial resurfacing and the MIXTO (MIXTO Lasering, San Ramon USA) laser was used with the 300-micron head, 20% surface ablation, index of 6 and 12 watts of power, 2 passes (Figures 1-7).

Conclusion

In summary, the MIXTO fractionated continuous wave CO₂ laser is a safe and effective method of temporarily improving the cosmetic

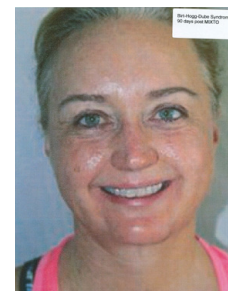


Figure 1: Birt-Hogg-Dube Syndrome 90 days post MIXTO.

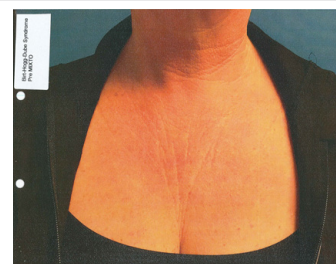


Figure 2: Birt-Hogg-Dube Syndrome pre MIXTO.

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Figure 3: Birt-Hogg-Dube Syndrome pre MIXTO.



Figure 6: Birt-Hogg-Dube Syndrome pre MIXTO.



Figure 4: Birt-Hogg-Dube Syndrome pre MIXTO.



Figure 7: Birt-Hogg-Dube Syndrome pre MIXTO.

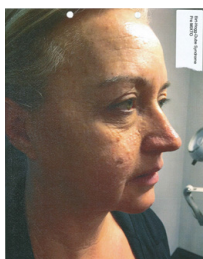


Figure 5: Birt-Hogg-Dube Syndrome pre MIXTO.

appearance of facial hamartomas of Birt-Hogg-Dube syndrome in one patient. More study is needed to determine safety and efficacy in additional patients and to determine how long the effects last before recurring in these patients.

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