

CASE REPORT

Q-switched Alexandrite laser in the treatment of pigmentation of lips in Laugier-Hunziker syndrome

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ABSTRACT

The Laugier-Hunziker syndrome (LHS) is an acquired, benign pigmentary skin condition involving the oral mucosa, often associated with longitudinal melanonychia. It is a diagnosis of exclusion, and other systemic conditions should be excluded prior to making a diagnosis. Normally, no treatment is required for this condition, unless for aesthetic reason, mainly due to pigmentation on the lip mucosa. In the past, the pigmentation has been treated efficiently with the Q-switched neodymium: yttrium-aluminum-garnet (Nd:YAG) laser and the Q-switched alexandrite laser (QSAL).

We report a case of a 48-year-old Asian female with Laugier-Hunziker syndrome and the successful clearance of pigmented macules on the lips with Q-switched Alexandrite laser. Laser irradiation was done at 5 J/cm² with a 3 mm spot size. There was complete clearance of pigmentation of the lips with a single laser treatment, and recurrence was not observed after 1 year. The Q-switched alexandrite laser is very effective for treatment of pigmented macules on the lips in cases of LH Syndrome.

INTRODUCTION

The Laugier-Hunziker syndrome (LHS) is an acquired, benign pigmentary skin condition involving the oral mucosa, often associated with longitudinal melanonychia. It is a diagnosis of exclusion, and other systemic conditions should be excluded prior to making a diagnosis.

Normally, no treatment is required for this condition, unless for aesthetic reason, mainly due to pigmentation on the lip mucosa.

We present a case of LHS treated with QS Alex laser to remove the lip pigmentations, which cleared with only single session, and did not recur over 1 yr followup.

CASE REPORT

We describe the case of LHS referred to Laser department for removal of oral pigmentation.

(Fig. 1).

A QS Alexandrite laser (Alex Trivantage) - Candella with a wavelength of 755nm was used to treat the pigmentation over lips. The parameters used were Fluence 5 J/cm², Spot size of 3mm, frequency of 1 Hz. Initially a Test spot was done which, after one month followup showed complete clearance and no evidence of dyspigmentation, scarring, or other untoward effects from the laser treatment. So, complete lower lip pigmented lesions were irradiated on next sitting with complete clearance and no side effects (Fig. 2). The treatment was performed without any local anesthesia. Postoperative healing was uneventful, only mild burning sensation was reported by the patient for a few hours postoperatively.

Our study has also demonstrated QSAL to be highly effective and safe in the treatment of LHS.

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Fig. 1 Pigmented macules over lower lip in Laugier-Hunziker syndrome before laser.



Fig. 2 Complete clearance four week after single session of Q-switched alexandrite laser treatment.

DISCUSSION

LHS, also known as idiopathic lenticular mucocutaneous pigmentation, was first described in 1970.¹

Laugier-Hunziker syndrome (LHS) is an acquired pigmentary condition affecting lips, oral mucosa and acral area, frequently associated with longitudinal melanonychia. There is neither malignant predisposition nor underlying systemic abnormality associated with LHS.²

LHS is characterized by a varying number of asymptomatic, lenticular (lens-shaped), or linear,

brown to black mucocutaneous macules, usually less than 5 mm in diameter. They may be single or confluent. They may have well-defined or have indistinct margins. The hyperpigmentation occurs spontaneously and gradually, and is considered permanent.^{1,3} The lesions are most commonly located on the lips, buccal mucosa, and hard palate. The less frequently affected areas include the soft palate, tongue, gingiva and floor of the mouth.

Not all patients have both oral and nail involvement, the incidence of a pigmented nail band in cases of LHS is 44%-60%.^{4,5}

LHS occurs predominantly among middle-aged adults with a mean onset at 50 years of age and occurrence is usually seen after puberty. It is more prevalent in women and most reported cases have been in Whites, particularly in French and Italians.^{1,6}

The diagnosis of LHS is frequently made clinically and is a diagnosis of exclusion.⁷

Treatment for the hyperpigmented macules in LHS is sought mainly for cosmetic reasons and includes cryosurgery, Q-switched Nd:YAG and Q-switched alexandrite laser therapy. Sun protection is important to prevent reoccurrence.⁸

The majority of pigmentations associated with LHS do not require any treatment, it necessary to reassure the patient of the benign behavior of the lesions. In the present case, the pigmentation was treated by laser because the patient was concerned about her appearance while smiling. She was unable to socialize as she was embarrassed to even smile. Everyone used to question the pigmentation over her lips.

The treatment was carried out in order to improve patient's quality of life as requested by the patient herself. The patient was very much happy and

satisfied after the laser clearance and could smile confidently.

A few case studies have demonstrated that cryosurgery,⁹ Er:YAG Laser,¹⁰ the Nd-YAG laser,¹¹ and the Q-switched alexandrite laser,^{12,13,14} may be safe and effective options for patients. Recurrence may occur after treatment, but this may be limited by sun avoidance.

In study of treatment of 22 patients with QS-alexandrite laser by Zuo *et al.*,¹² after only one session of laser treatment, the clearing on the lips was as follows: 18 (81.8%) excellent, 2 (9.1%) good, 1 (4.5%) fair and 1 (4.5%) poor. Eighteen patients (81.8%) with LHS, who had achieved excellent clearing after only one session of laser treatment, did not receive further treatment. Among the remaining four patients, three patients (13.6%) achieved complete results after three laser treatments. Only one patient required six sessions to achieve complete clearance.

Ferreira MJB *et al.*¹¹ reported the case of a 46-year-old Caucasian female with LHS syndrome who was successfully treated with Q-switched Nd-Yag laser, with double frequency, for both the mucosal and cutaneous lesions.

Sertan *et al.*¹⁰ observed recurrences in their case after 12 months of followup after Er:YAG laser treatment. They reasonably considered that this acquired pigmentation to be persistent for life with a tendency to be refractory to a surgical intervention. They concluded that the reason of the recurrence in their case may be the superficial removal of tissue layers with Er:YAG which was thought to be advantageous as it is safe, the advantage of using the Er:YAG laser is being able to see the pigmented areas easily. However, the disadvantage is that it is only possible to see them clinically. The advantage of another laser could

be that it could interact with the pigmentation on molecular scales which could prevent recurring. They recommended that other surgical tools or another laser with a different choice of wavelength to interact with the deeper pigment content of the lesions could be investigated for a longer term successful result.

In conclusion, our case report shows that Q-switched alexandrite laser is very effective for treatment of pigmented macules on the lips in cases of LH Syndrome. For further investigations, there is a need for a study with higher study population which will compare the treatment outcomes of different types of lasers on different areas of pigmentation.

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