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Argon Laser as a Modality Treatment of Trichiasis in Benghazi

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Abstract: ***The purpose of this study is to evaluate the success rate and safety of argon laser photocoagulation as a modality of treatment for symptomatic trichiasis in Benghazi, Libya. This prospective study was conducted at The Martyr Sohil Alatrash Eye Hospital in Benghazi, between June 2010 and February 2011, 30 patients 55 lids with symptomatic trichiasis were included. They were treated with argon LASER with regular follow up the next 3 months.20 shots of blue-argon laser were directed to the lash root to a depth of 2-3mm. Laser beam variables were: a spot size of 50 microns with exposure of 0.2 s and a power of 1- 1.2 watts. The maximum number of treated lashes per lid was five. Recurrence was defined as regrowth of one or more trichiatic lashes. Up to two additional applications with the same LASER parameters were done for recurrent trichiasis. Success rate after two weeks following first treatment session was only 20% (11 lids).The overall success rate after two treatment session was 52.73% (29 lids). Complications of treatment were noticed in two lids only (3.63%). Hypopigmentation in one lid and notching in another. Argon LASER photocoagulation is a safe and effective office procedure for treatment of symptomatic trichiasis.***

1. Introduction

Trichiasis is a very common disorder encountered by ophthalmologists as it is one of the complications of trachoma (1) . Symptomatic trichiasis has been treated with different methods as epilation, electrolysis in which both elect a high recurrence rates (2) ,while cryo therapy is considered an effective technique with multiple complications as lid swelling, notching, skin depigmentation, reactivation of herpes zoster and other more serious squeals (3) (4) and other lid surgical procedures.

The use of argon laser photocoagulation for the treatment of trichiasis was first suggested by Berry in 1979(5) and followed by many studies which agreed it too.

In this prospective study, we investigated the effects of argon laser treatment of 55 lids of 30 patients with trichiasis who visited the Great River Eye Hospital in Benghazi between June 2010 and February 2011.

2. Patients and Methods

Thirty patients were enrolled in this study, fourteen male and sixteen female, fifty five lids were treated by argon laser to ablate misdirected eyelashes involving upper eyelid, lower eyelid or both.

The age of the patients ranged from 50 to 86 years, with a mean age of 66 years.

Detailed history was taken for each patient. History of previous treatment for trichiasis was recorded, patients underwent complete ophthalmic examination. The etiology of trichiasis was determined; patients with more than 10 rubbing lashes per eyelid and those who had associated entropion were excluded .The procedure was explained to the patient and an informed consent obtained.

Patients were positioned at the slit lamp of the LASER unit and the eyelid was rotated a little outwards to align the LASER beam with the axis of the root of the lash. The patient was then asked to look away from the direction of the eyelid being treated so that no part of the cornea was visible in the treatment field. The LASER controls were set to a spot size of 50 microns with time exposure of 0.2 s and a power of 1- 1.2 watts.

The beam was focused at the root of each cilium so that its path was co-axial with the subcutaneous portion of the eyelash. The initial application of the LASER divided the shaft of the lash at its base and formed a crater. This was then deepened to destroy the whole lash follicle with an increased spot size of 200 microns. This usually took an average of 20 applications to complete. Patients were discharged on topical antibiotic ointment to be applied twice daily for one week and followed after 2 weeks.

3. Results

A total of 55 lids of 30 patients were treated. 53.3% (16) of patients were females and 46.7% (14) were males. The average age of the study group was 66 year. The follow up period was three months. All patients were previously treated with other treatment modalities. Sixteen patients (53.3%) were treated with mechanical epilation. Seven patients (23.3%) were treated with electrolysis, and the other seven patients (23.3%) were treated with lid surgery. The most common cause of trichiasis among the study group was trachoma (26 patients), other cause was blepharitis (4 patients). Success rate after two weeks following first treatment session was only 20% (11 lids). The overall success rate after two treatment session was 52.73% (29 lids). Complications of treatment were noticed in two lids only (3.63%). Hypo pigmentation in one lid , and notching in another lid.

4. Discussion

Trichiasis is one of the most irritating eyelid problems for both the patient and the ophthalmologist because of the annoying symptoms and its recurrent nature. The patient's activities and lifestyle are limited by the pain and discomfort of foreign body sensation and photophobia.

Trichiatic lashes are most bothersome when they abrade the cornea and If left untreated it leads to corneal ulceration, vascularisation, hyposethesia and can predispose to infectious keratitis(6).

Argon laser was used effectively as a management modality of trichiasis; it emits a coherent blue-green light of about 488-515 nm wavelength which is absorbed by the melanin pigment of the treated eyelash, and the subsequent conversion of the laser light into heat energy produces the therapuetic thermoablative effect. As the laser is applied under slit-lamp magnification, it provides a selective and accurately controlled ablation of the aberrant lash without affecting the surrounding healthy tissue.(7)

Various results have been reported for the treatment of trichiasis with the argon laser. Compbell reported 33% success rate after the first session, and 80% after three LASER sessions (8). While Sharif et al reported 67.9% success for 21 patients after approximately two consecutive laser sessions and stated that the number of aberrant lashes per lid dictated the number of treatment sessions required (7). Our study showed a success rate of 52.73% after 2 LASER sessions, with less complication.

Campbell (8) stated that Advantages of the technique were precise application and selectivity, lack of complications, non-requirement for infiltrative anaesthesia and ease of performance. Disadvantages were the need for up to three treatments in some patients and the technique only being suitable for treating small numbers (up to six) of lashes.

In conclusion Argon laser treatment of trichiasis is a safe, effective procedure which allows more precise placement and control of the treatment with minimal cicatrization, repeated laser treatment can be performed with little fear of inducing significant scarring. Accordingly Argon laser ablation of maldirrcted eye- lashes is preferred in trichiasis associated with cicatrizing conditions. Moreover,

Argon laser treatment is found to be effective especially when few fine cilia are involved but repeated treatment is required for more and thicker cilia.

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