

The Wooden Spatula – an innovative way of reducing upper lip discomfort in Laser hair reduction. A half – half comparative study

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Abstract

Objective Upper lip laser hair reduction (LHR) in females is a common aesthetic procedure, Procedural pain is a well-known side effect, and is countered by various methods. Here we describe a cost effective, non-time consuming simple technique for pain reduction. We evaluated the efficacy of properly placed gauze piece covered wooden spatula in reducing upper lip pain and discomfort.

Methods Prospective, non-blinded, split face comparative study. Twelve patients were included. LHR was performed on left side of the upper lip, pain score noted by visual analogue score, and then performed on the right side after using gauze covered spatula as a barrier between the lased skin and gum. Statistical analysis used: two tailed paired sample T- test.

Results The pain scores before and after using the spatula were analysed and there was considerable reduction in pain in 10 out of 12 patients, which was statistically validated by the paired t test. All except one patient, requested use of spatula in further sittings.

Conclusion The use of spatula as a simple, time and cost effective adjunct for pain reduction in upper lip laser hair reduction was validated. A small sample size was a limitation here. The sitting at which the spatula was used is not a confounding factor as this is a split study where we have compared almost simultaneous reduction in pain. Spatula is an economical, cost effective, non time consuming way of pain reduction in upper lip laser patients.

Key words

Wooden spatula, laser hair reduction, pain reduction, upper lip.

Introduction

LASER hair reduction (LHR) is one of the commonest aesthetic procedures performed in a dermatology set-up. Recent years have seen an increase in demand among patients for LHR for cosmetic as well as medical indications. Upper lip, chin and axillary hair reduction is the most

sought after procedure. Facial hair is a cause of concern and distress to a female patient. Although LHR is a safe procedure with very rare significant side effects, varying degrees of pain or discomfort are usually encountered, ranging from stinging, burning, prickling, or a sensation like rubber band slapping against the skin. The upper lip is very susceptible to pain, additional contributory factor being sensitivity of the gums and teeth. A popular methods of reducing discomfort is the use of eutectic mixtures of local anesthetics (EMLA). The main disadvantage of EMLA are the increased procedure time of 60 to 90 minutes for securing

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anesthesia and increase in cost for the patient. Rarely other adverse events have been reported with the use of EMLA.¹ The use of wooden spatula has been recently reported to reduce the discomfort associated with LHR in the upper lip region.²

Aim was to evaluate the efficacy of gauze piece covered wooden spatula in reducing discomfort associated with upper lip LHR.

Materials and Methods

This is a non-blinded, prospective, same patient split half designed study. Institutional ethical committee clearance was obtained prior to commencement of the study.

Inclusion criteria

1. Females undergoing LHR for the upper lip.
2. Females who complain of pain with present or past upper lip LHR.

Exclusion criteria

1. Females who have opted for EMLA for upper lip LHR.
2. Females less than 18 years of age.
3. Pregnant and lactating women.

The larger oval end of a wooden spatula was covered with a single piece of gauze (**Figures 1 & 2**) Sterile water was then used to moistened to reduce friction during the movement of the spatula. The machine used for LHR was the Diode light sheer by Lumenis with a sapphire chill tip. The parameters for LHR were decided on the basis of Fitzpatrick skin type and the hair parameters like density, texture and color. The procedure was done by a single dermatologist.

After taking all precautionary care like explanation of the procedure and eye protection,

LHR was commenced on the basis of parameters selected. The hand piece tip was kept in perpendicular contact with skin after application of ultrasound gel. Proper cooling of the upper lip was done. LHR was started from the left corner of the upper lip moving towards the right corner. The left side of the upper lip was lasered first in view of the position of the machine and dermatologist. Once the left side of the upper lip was lasered, patients were asked to rate the discomfort on a visual analogue score of 0 to 10. Patients who complained of 3 or more in pain scale score were offered the use of wooden spatula. The moistened gauze wrapped wooden spatula was then introduced between the upper lip and gums while lasering the right side of the upper lip (**Figure 3**). The laser parameters remained unchanged. Patient was asked to move the wooden spatula in tandem with the movement of the hand piece. LASER shots were fired only when the spatula was in direct position below the hand-piece tip. If patient found difficulty in moving the spatula along the hand piece, the dermatologist himself coordinated the movement with his left hand. Patient at the end of lasering the right half of the upper lip was again asked to rate the discomfort on a score of 0 to 10. All patients were then asked if they wanted to use the wooden spatula for the next session of upper lip LHR. All data was tabulated and statistically analysed using paired T test.

Results

A total of 12 females were included in the study (**Table 1**). The age group of the patients ranged from 19 to 36 years with a mean of 24.8 years. The pain scale without the spatula ranged from 3 to 10 with a mean of 6.41. The pain scale with spatula ranged from 0 to 8 with a mean of 4.

The LASER sitting number for patients was not uniform and ranged from first sitting to the 9th.

Table 1 Patient characteristics.

S. No	Age	Pain scale without spatula	Pain scale with spatula	Sitting at which spatula used	Whether used spatula in subsequent sittings
1	19	5	3	9	Yes
2	19	5	3	6	Yes
3	24	7	4	1	Yes
4	31	8	5	2	Yes
5	23	10	8	4	Yes
6	36	7	2	2	Yes
7	22	8	7	5	Yes
8	21	5	5	7	Yes
9	29	3	0	5	No
10	33	6	5	1	Yes
11	21	5	3	1	Yes
12	20	8	4	1	Yes
Mean:	24.83333	6.416667	4.083333		



Figure 1 Gauze piece, wooden spatula, distilled water



Figure 2 Gauze wrapped wooden spatula



Figure 3 Patient with spatula held between gum and lips

Out of 12 patients, 10 reported varying degrees of pain reduction with spatula, however two patients did not find significant reduction in discomfort with spatula.

All but one patient (one of the two who had reported no decrease in pain intensity with spatula) preferred using spatula in subsequent sittings.

No adverse events were noticed with the use of spatula in our study.

Statistical analysis was performed using two-tailed paired sample T-test. P value was 0.95, the test statistic was in the 95% critical value accepted range. The observed standard size was small, indicating that the magnitude of the difference between the average and μ_0 is small.

Discussion

Diode, Neodymium-yttrium aluminum - garnet (Nd: YAG) and intense pulsed light (IPL) are common LASER and light technologies used for LHR in India. Most of the studies done on LHR tend to focus on efficacy of LHR with minimal focus on associated side effects, commonest and of immediate concern being pain and discomfort.³ The newer technologies like in-motion technology and pneumatic skin flattening help in pain reduction⁴, but are yet not commonly used in most of the LASER and light based devices being used in the Indian market. Usage of EMLA, chill tips, cold compresses, external cooling devices and NSAIDs are some of the usual methods to alleviate pain during LHR.^{5,6}

The incidence of pain or discomfort as a side effect of LHR varies from study to study. A comparative study done to evaluate the efficacy of diode, Nd:YAG and IPL in LHR of chin hair showed pain being reported in 30%, 0% and 10% of the patients respectively. However the intensity of pain was not mentioned.⁷ Pain was reported in all 200 patients undergoing LHR using long pulse Nd:YAG; although the intensity of pain was mentioned as mild, without any further quantification.³ One study reports discomfort in two out of 24 patients undergoing IPL hair reduction.⁸

A score of 6 for pain in a scale of 0 to 10 has been considered as tolerable for LHR. Pain is reported to occur with LHR as the hair follicles are innervated structures.⁹ In the upper lip

region, patients not only experience pain due to the usual process of selective photothermolysis, but also due to additional factors like sensitivity and tingling sensation to the gums and teeth with every shot. The use of wooden spatula and gauze piece tends to create an additional physical barrier between the upper lip and the teeth and gums.² Stretching of the skin by slightly elevating the spatula tends to cause lesser follicles in one target area, thereby reducing discomfort of LASER beam absorption. By asking the patient to move the spatula, patients are kept occupied and the mind distracted from the LASER process. This is very useful in apprehensive, anxious and high-strung individuals.

Our study did not attempt to evaluate the discomfort between various LASER and light based devices. We used a single device in order to avoid LASER system bias as pain intensity has been reported to vary among LASER technology.⁷

Our study found a definite and statistically significant reduction in pain on the side where spatula was used. All patients, but one were satisfied with the modification.

The cost of the consumables are very negligible compared to topical anesthetic cream. The time saved for the patient who opt for the spatula instead of EMLA is about 60 to 90 minutes. The instruments/ consumables needed are easily available. No adverse effects are noted with the use of spatula; though there is a theoretical possibility of minor trauma to the oral mucosa, while movement of the spatula. Increase in the padding of spatula by adding more gauze layers may be considered for further reduction of discomfort.

A small sample size was a limitation here. The sitting at which the spatula was used is not a

confounding factor as this is a split study where we have compared almost simultaneous reduction in pain. We recommend to consider similar studies in larger population and with other LASER technologies to validate the use of the wooden spatula in LHR.

Conclusion

Wooden spatula can be considered as a cheap, less time consuming alternative to topical anaesthesia in patients undergoing upper lip LHR.

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