

Treating Peri-Orbital Wrinkle With Vbeam Pulse Dye Laser: A Retrospective Observational Case Series

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Abstract

Objective: This study evaluated the effectiveness of Vbeam pulsed-dye laser treatment in improving peri-orbital wrinkles.

Methods: A retrospective observational case series included 24 adult patients treated with Vbeam pulsed-dye laser for peri-orbital wrinkles. Treatment was performed using a 10 ms pulse duration, 10 mm spot size, fluence of 7.5 J/cm², and dynamic cooling device settings of 40 ms spray and 40 ms delay. Patients received one or two treatment sessions at 6–12-week intervals and were followed for 12 weeks from a duration of November 2025 to February 2026 at a laser clinic in Lahore. Baseline and post-treatment wrinkle scores were compared using a paired t-test.

Results: The mean age was 48.0 ± 8.4 years, and 79.2% of participants were female. Mean wrinkle scores decreased significantly from 3.13 ± 0.61 at baseline to 2.21 ± 0.66 after 12 weeks, with a mean improvement of 0.92 ± 0.48 ($p < 0.001$). Overall, 91.7% of patients demonstrated improvement.

Conclusion: Vbeam pulsed-dye laser treatment significantly improved peri-orbital wrinkles, suggesting its potential as a minimally invasive option for facial rejuvenation.

Keywords: Pulsed Dye Laser; Vbeam; Periorbital Wrinkle; Non-ablative Laser; Facial Rejuvenation

Introduction

Electronic Since the beginning of time, both men and women have strived to look younger. In the past 10 years, there have been multiple breakthroughs in the treatment of photo-aged skin, whose symptoms include pigmented lesions (both red and brown), wrinkles and alterations of the skin texture. During the 1980's and early 1990's, the most commonly used rejuvenation method was laser resurfacing, achieved with CO₂ and Erbium YAG. While this procedure did achieve a dramatic rejuvenation of the face (10+ years), the drawback was the post-treatment side effects and necessary down-time. Indeed a full

face resurfacing requires seven to ten days of social eviction, and then up to three months of makeup to cover the excessive epidermal redness. In more recent years, both physicians and patients have been searching for less aggressive ways of facial rejuvenation. This interest in so-called non ablative skin rejuvenation has led to a variety of lasers being used for the reduction of wrinkles, including Nd: YAG laser (1320nm), diode lasers (1450nm), and short pulsed-dye lasers, such as the VBeam, offer an additional option for both physicians and their patients. Used at below purpura thresholds, the Vbeam creates a small

wound in the dermis, leading to an activation of collagen and thus to a reduction in wrinkle appearance. While the results are not as dramatic as those achieved with a laser resurfacing, this procedure is better accepted by patients due to the lack of side effects and necessary downtime.

Materials And Methods

2.1 Study Design

Retrospective observational case series of 24 patients treated with Vbeam pulsed-dye laser for peri-orbital wrinkles from the duration of November 2025 to February 2026 at American Laser of Cosmetic Dermatology Lahore. Approval from Institutional Ethics Committee was obtained prior to the commencement of this research (Ref. No. RE&TRC/1025/01/F).

2.2 Inclusion Criteria

Patients were considered eligible if they were adults aged ≥ 18 years, presented with peri-orbital wrinkles, received Vbeam pulsed-dye laser treatment, Had adequate follow-up documentation, Provided consent for treatment.

2.3 Exclusion Criteria

Patients were excluded if they were younger than 18 years, had an active infection or inflammatory condition in the treatment area, had incomplete treatment or follow-up documentation, had received another wrinkle treatment during the assessment period.

2.4 Ethical Considerations and Informed Consent

After signing an informed consent form for pulsed-dye laser treatment, patients were treated with the Vbeam at sub-purpuric thresholds.

2.5 Treatment Protocol

In most cases, this involved the 10 ms pulse duration, the 10 mm spot, and a fluence of 7.5 J/cm², with the DCD setting at 40 ms spray and

40 ms delay. The periocular area was treated as follows: three passes to paintbrush the area, once horizontally again. On average, the treatment involved multiple overlapping (approximately 30%). The number of pulses involved depended on the size of the area of involvement. Patients were treated a total number of one or two times on average, at 6-to-12-week intervals.

Nothing was used either pre- or post-treatment.

2.6 Statistical Analysis

For this simulated example, continuous variables are presented as mean $\pm$ standard deviation, while categorical variables are presented as frequencies and percentages. A paired t-test was used to compare baseline and post-treatment wrinkle scores. A p-value of <0.05 was considered statistically significant.

Results

A total of 24 patients with peri-orbital wrinkles were included, with a mean age of 48.0 ± 8.4 years and an age range of 34–63 years. The majority were female (79.2%), while 20.8% were male, and Fitzpatrick skin type III was the most common (37.5%). Among the participants, 58.3% received one treatment session, whereas 41.7% received two sessions, with a follow-up period of 12 weeks. The mean wrinkle score decreased from 3.13 ± 0.61 at baseline to 2.21 ± 0.66 at 12 weeks, corresponding to a mean improvement of 0.92 ± 0.48 . Overall, 22 of 24 patients (91.7%) showed improvement, while only 2 patients (8.3%) showed no improvement. The reduction in wrinkle scores following Vbeam pulsed-dye laser treatment was statistically significant ($p < 0.001$), demonstrating a significant improvement in peri-orbital wrinkles.

Adverse Events

There was no post-operative purpura at the settings used. There were no side effects noted in

any of these patients aside from rare and short-lived (24 hours) edema.

Table 1. Patient characteristics

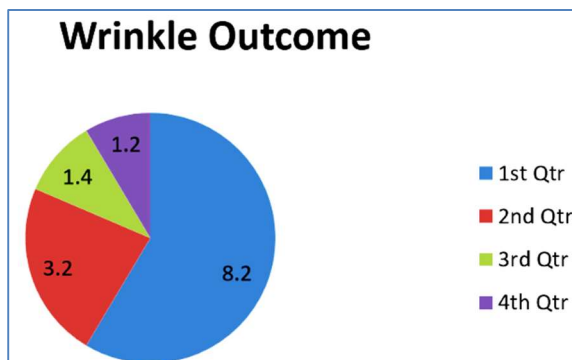
Variable	Result
Total patients	24
Age, mean $\pm$ SD	48.0 $\pm$ 8.4 years
Age range	34–63 years
Female	19 (79.2%)
Male	5 (20.8%)
Fitzpatrick I	2 (8.3%)
Fitzpatrick II	5 (20.8%)
Fitzpatrick III	9 (37.5%)
Fitzpatrick IV	7 (29.2%)
Fitzpatrick V	1 (4.2%)
One treatment	14 (58.3%)
Two treatments	10 (41.7%)
Follow-up	12 weeks

Table 2. Vbeam treatment parameters

Parameter	Value
Pulse duration	10 ms
Spot size	10 mm
Fluence	7.5 J/cm ²
DCD spray	40 ms
DCD delay	40 ms
Passes	Three
Approximate overlap	30%
Treatments	One or two
Treatment interval	6–12 weeks

Table 3. wrinkle outcome

Assessment	Result
Baseline score	3.13 $\pm$ 0.61
12-week score	2.21 $\pm$ 0.66
Mean improvement	0.92 $\pm$ 0.48
Patients showing improvement	22 (91.7%)
Patients without improvement	2 (8.3%)
Paired analysis	p < 0.001*

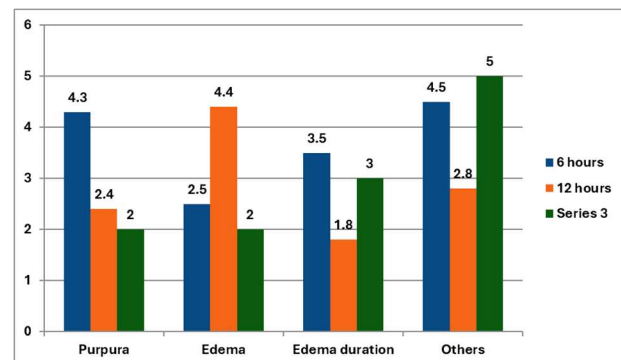


	6 hours	12 hours	24 hours
Adverse effects			
Purpura	4.3	2.4	2
Edema	2.5	4.4	2
Edema duration	3.5	1.8	3
Others	4.5	2.8	5

Table 4. adverse events

Adverse event	n (%)
Purpura	0 (0%)
Edema	2 (8.3%)
Edema duration	$\leq$ 24 hours
Other significant adverse events	0 (0%)

Discussion



Rejuvenation of the skin is achievable by a number of treatments, including everything in between the extremes of topical creams and laser resurfacing.

Treatment with the Vbeam laser offers a particularly appealing compromise between therapeutic efficacy and lack of side effects. As per the photographs, the results are definitely apparent. And with no downtime, patients are able to go back to their responsibilities immediately after the treatment. The Vbeam has put the treatment of wrinkles in the “lunchtime treatment” category, which represents a quantum jump in technology.

In addition, treatment of wrinkles with the Vbeam is an excellent option when more aggressive rejuvenation procedures are not recommended. In the case of the patient photographed here, her darker skin type (Type 4) and predisposition to melasma made the risk of pigmentary change following a laser resurfacing unacceptably high. The Vbeam procedure was both soft enough to cause no side effects and efficacious enough for the patient to be pleased with the results.

Conclusion

Vbeam (Pulse Dye Laser) is an effective lunch time procedure for treating peri-orbital wrinkle without any down time and side effects. This laser treatment significantly improved peri-orbital wrinkles, with 91.7% of patients showing improvement at 12 weeks. The findings suggest that it may be an effective minimally invasive option for peri-orbital rejuvenation. However, larger controlled studies with longer follow-up are needed to confirm its long-term effectiveness.

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Author's Contribution:

HMC : Conceptualization of Project, Data Collection, Literature Search, Data Analysis, Writing Manuscript, Drafting Revision