

The Safety And Efficacy of 1320-nm Wavelength Laser Lipolysis-Assisted Lipoaspiration In the Remodeling of the Underchin Neck and Jowl

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ABSTRACT

Summary: The combination of 1320-nm laser lipolysis with lipoaspiration was observed to improve the appearance and contour of the infrachin neck, doubling the improvement seen with prior lipoaspiration performed by identical technique but without the addition of laser lipolysis. This is a preliminary report as to safety of the use of 1320-nm laser lipolysis. No adverse effects were observed in this report of 30 patients.

Purpose: To evaluate the safety and efficacy of 1320-nm laser lipolysis when combined with lipoaspiration as compared to lipoaspiration performed with identical technique but without laser lipolysis.

Background: Our impression of “aging” of the face may be determined more by a visual impression of the neck and chin than by any other aspect of the face alone. We really never “see” the face as such but rather form a visual impression of the face and neck as one visual image. Syringe assisted-lipoaspiration of the underchin neck and jowl has offered our patients a partial answer, but for those patients with laxity as well as adipose tissue fullness there is a need for an approach to treatment that would give our patients better, deeper tissue skin tightening as well as effective removal of excess fatty tissue. Laser lipolysis, the effacement of small unwanted areas of fat excess with the use of subcutaneous placed small dimensional laser fibers with limited lipoaspiration, has been described with 1064 Nd:YAG laser use for the submental neck, volar upper arms and medial thighs, areas where traditionally with lipoaspiration alone there has been a need for a greater enhancement of tissue tightening. At this time it remains uncertain as to which laser wavelength is the optimum wavelength for laser lipolysis. The closer tissue absorption characteristics of 1320-nm wavelength may make this a more ideal and safer wavelength for selection for laser lipolysis. The smaller and more vital tissue compartment of the underchin neck. The purpose of this study is to demonstrate the efficacy and safety of 1320-nm laser lipolysis and to establish a clear increase in clinical improvement

as seen with laser lipolysis combined with lipoaspiration as compared to lipoaspiration without laser lipolysis.

METHODS

Thirty patients were selected for 1320-nm laser lipolysis combined with lipoaspiration of the infrachin neck. The desired purpose of this procedure was to achieve not only removal of unwanted fatty tissue excess, but to try and achieve as well a quality of tightening and contour correction that might exceed that as seen with lipoaspiration alone. Patients were clearly informed of risks of this procedure, risks not only of lipoaspiration but those that could as well be associated with the thermal nature of lipolysis.

Initial submental tumescent anesthesia was achieved with lidocaine 0.125%, epinephrine 1:800,000 dilution in saline infiltration. With this method there was no compromise observed of perioral expression either post



Figure 1. A 40-year-old woman before (left) and three months after treatment (right) with 1320-nm laser lipolysis.

Photographs courtesy of Douglas J Key, M.D.

tumescence or at any time during or post procedure. The 400 micron laser fiber was introduced subcutaneously using a blunted 22 gauge pipette. The back and forth movement of the laser fiber as extruded 1 to 2 mm beyond the pipette was readily visualized using the 5 mw red aiming beam. Treatment powers were 6 to 8 watts, but decreased to 4 watts over the jowl area, with careful attention to lift the jowl away from the mandible rather than any tissue compression in this area.



Figure 2. A 47-year-old woman before (left) and three months after treatment (right) with 1320-nm laser lipolysis.

Photographs courtesy of Douglas J Key, M.D.

Continuous laser fiber motion was used through the desired area of fat disruption using settings of a 100 microsecond pulse length. The duration of desired “laser on time” was determined by the depth and size of the fatty tissue compartment being treated. The desired endpoint was one of a perceived softening, a lessening of resistance to the passage of the laser probe, as well as the subtle suggestions of a heat perception tactile by the treating physicians on tissue fingers. At no time did patients perceive heat as uncomfortable. The range of laser on time was between 70 to 130 seconds at 8 watts. An initial group of 4 patients was treated with laser lipolysis alone without lipoaspiration with favorable clinical outcomes, but a perceived impression that the duration of post procedure swelling was longer than that when lipoaspiration was combined such that all subsequent procedures were combined with lipoaspiration. Lipoaspiration was performed exclusively with Klein #16 and #14 finesse cannulae, syringe assisted. Contour and volume correction when laser lipolysis was combined with lipoaspiration was visualized immediately post procedure and shown by hand held mirror visualization to the patient. All patients were instructed to wear a standard chin strap compression garment for the day and evening of their procedure and for 6 to 8 hours a day for the second and third post procedure days. All patients were told to expect soft tissue swelling, firmness, and some sensation of numbness in the infrachin in the first week post procedure, and lessening in serial weeks post procedure, and to not “judge their results” before 2 to 3 months, if not longer. There was



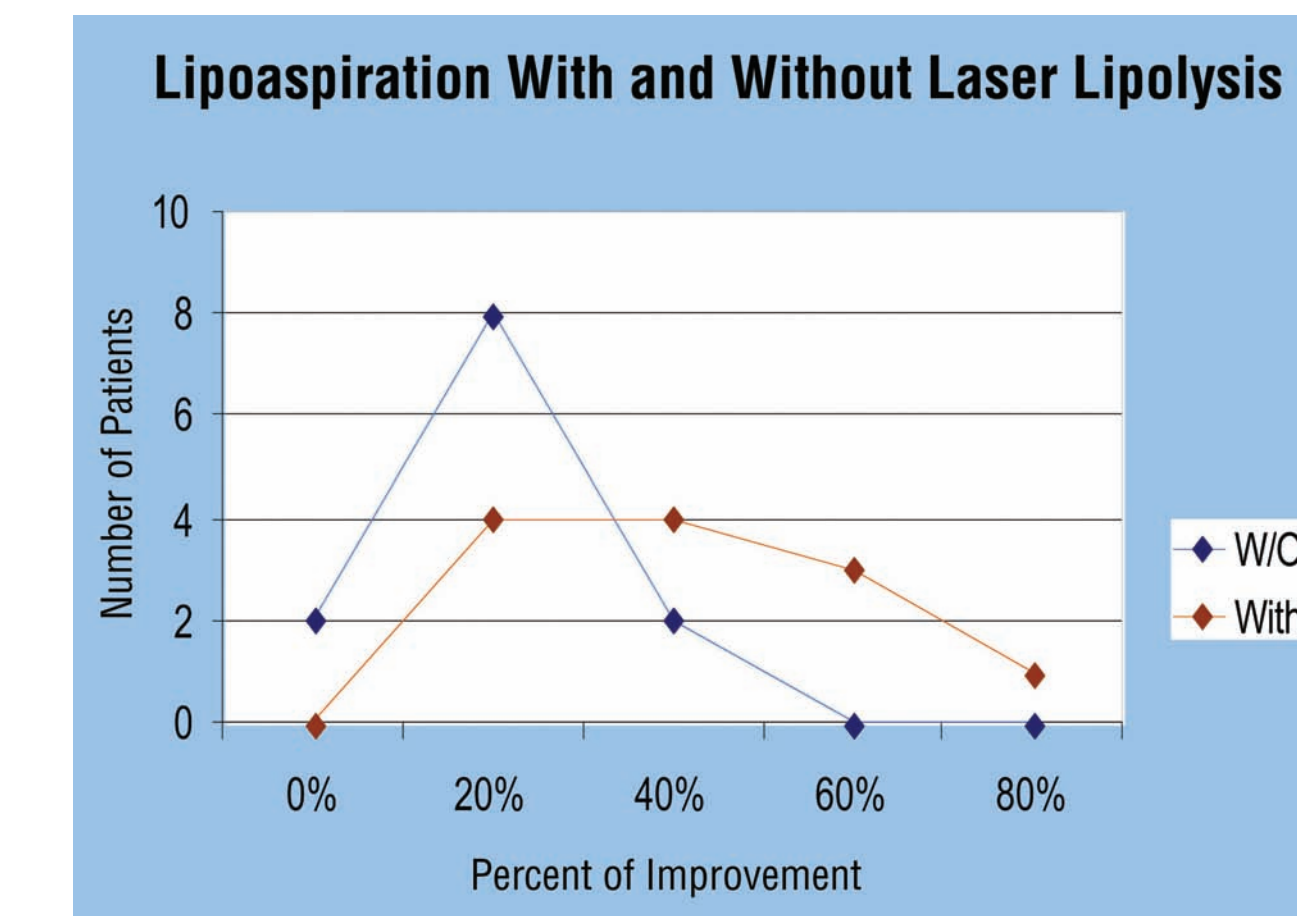
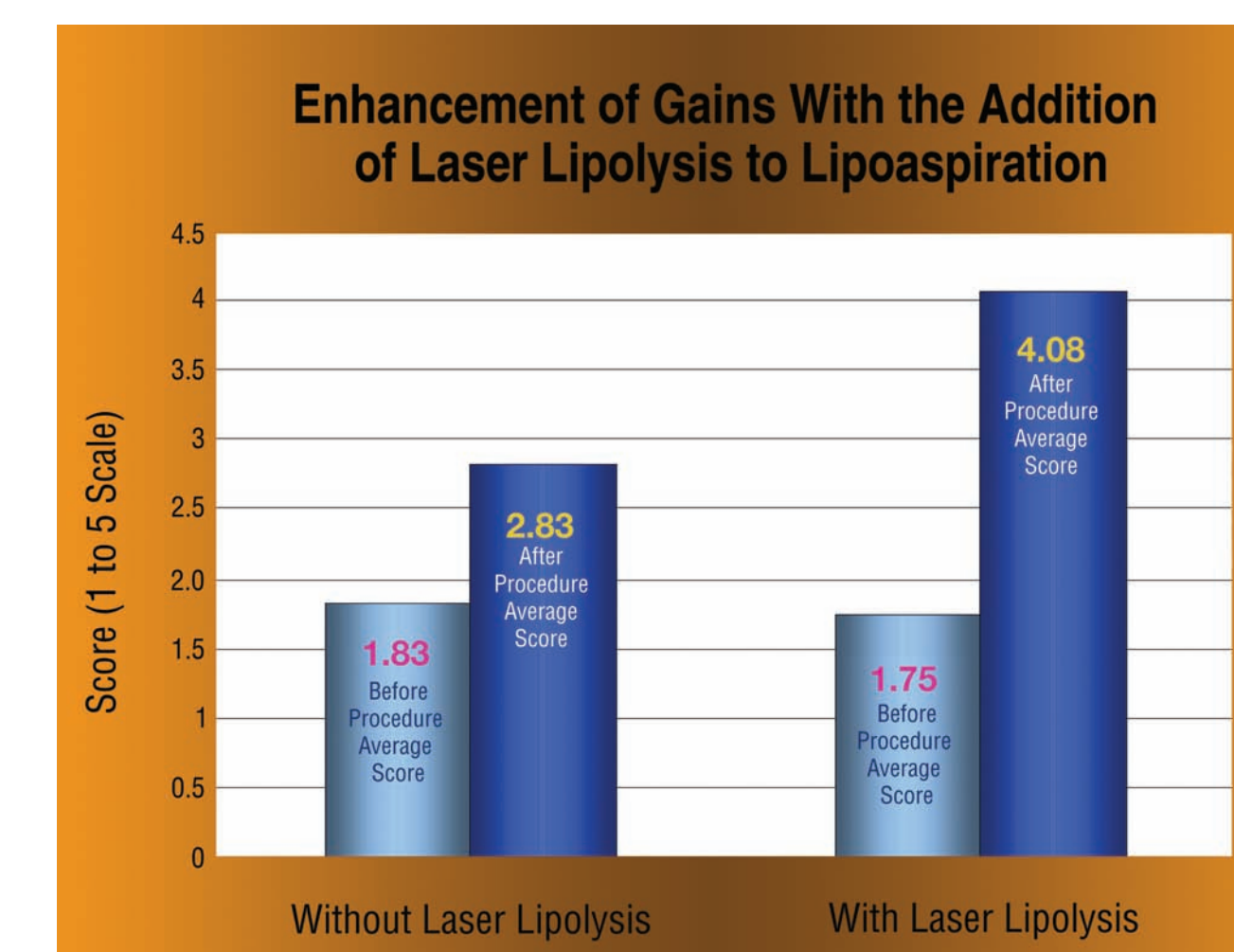
Figure 3. A 53-year-old woman before (left) and nine months after treatment (right) with 1320-nm laser lipolysis and grafting.

Photographs courtesy of Douglas J Key, M.D.

no need for post procedure analgesia in any patients. Serial photography using Canfield Mirror™ was obtained with both frontal, 45 degree, and 90 degree side views as to both baseline and serial follow-up, both immediate post procedure, as well as one to two month intervals to 6 months and then projected additional follow-up still pending at up to one year.

RESULTS

All patients reported a high degree of satisfaction with their procedure of combined 1320-nm laser lipolysis and lipoaspiration. There was no incidence of adverse effect in any patients treated. From this group of patients treated with combined laser lipolysis and



lipoaspiration, the photographic assessments of 12 patients were randomly selected as to pre-procedure and delayed at 3 to 6 months post-procedure grading on a 1 to 5 scale as to both baseline and improvement. Twelve patients were also randomly selected from patients treated in this prior year who were treated with the identical technique of lipoaspiration, but without laser lipolysis. The baseline severity scores of these two groups photographically was judged to be identical with a score of 1.79 versus 1.83, statistically insignificant difference, although the clinical severity of the combined laser lipolysis with lipoaspiration group was judged as actually more severe, with the candidates actually informed of the possibility of lesser than optimum results because of greater laxity. An example of this observation is that one of our first patients treated had succeeded with significant dietary weight loss,



Figure 4. A 35-year-old woman before (left) and eight months after treatment (right) with 1320-nm laser lipolysis.

Photographs courtesy of Douglas J Key, M.D.

approaching over 100 pounds, but was troubled by the persistence of the infrachin limited fat and residual laxity. She would not have been selected as a candidate by any criteria for traditional lipoaspiration alone because of the laxity associated with prior weight loss. She was treated with laser lipolysis alone and was extremely pleased with the contour correction, as now visualized at follow-up extending to 9 months.

Comparison scores of the twelve patients treated with laser lipolysis combined with lipoaspiration of the infrachin neck showed a mean gain of 2 grading points on a one to five scale, i.e., a baseline of 1.78 as to a mean gain of 4.08 versus a mean gain of only one grading point in the group of prior treated patients with an identical technique of lipoaspiration alone, i.e., a baseline of 1.83 as to a mean gain of 3.8. This represents a doubling of the clinical improvement as visualized with 1320-nm laser lipolysis combined with lipoaspiration versus the lower scores as seen with lipoaspiration identical technique alone. Additional patients outside of this reported group were treated as well with favorable outcomes in smaller areas of fat excess and tissue laxity in the zones of the epigastric upper abdomen, anterior axillary folds, and upper back above the bra line.

CONCLUSIONS

These observations support the safe and effective use of 1320-nm laser lipolysis with lipoaspiration as an approach to both effective removal of small volumes of fat and for enhancement of subdermal tissue tightening. These observations were seen in those patients treated with both laser lipolysis and laser lipolysis with lipoaspiration. The characteristics of close confinement of laser energy with the use of 1320-nm as a chosen wavelength for laser lipolysis may make this a more optimum choice of wavelength, particularly in the narrower and more critical subcutaneous tissue compartment of the neck.

DISCLOSURES

Dr. Key received discounted equipment for this study.