Invited Discussion on: “High Definition Liposculpture. What are the Complications and How to Manage Them?”

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It was a pleasure to read the large case series by Danilla et al., “High Definition Liposculpture. What are the complications and how to manage them?” In this large case series of 417 patients, several complications occur at high rates. Since the original introduction by Hoyos and Prendergeist [1], Hoyos and Millard [2], high-definition liposculpture (HiDef Lipo) has become popular, and elucidation of expected complications adds to patient informed consent. The complications with the highest rates were hyperpigmentation at 66% (276 of 417 patients), seroma 30% (125 of 417 patients), and nodular fibrosis 20% (83 of 417 patients). In their patient cohort, selection criteria were conservative and included ASA I or II, BMI < 26 for women/BMI < 28 for men, age < 60 years, and no history of massive weight loss. The authors’ technique is described, including the preoperative marking system with different colors, and use of ultrasound lipoplasty system (VASER) at 70% power mode for most patients in all areas, including the inner arms and thighs, superficial and deep layers of the back and abdomen. As an alternative, a 980-nm laser was used to reinforce retraction, though the frequency of this use is not reported. Pubic incision drains were placed, and compression was worn continuously for 3 weeks night and day, followed by

3 weeks night only. Lovenox thromboprophylaxis and a trimodal pain regimen of acetaminophen, celecoxib, and pregabalin were used postoperatively. We congratulate the authors on having regimented preoperative criteria and postoperative treatments, which suggest a well-organized approach to patient care.

The highest rate complication of hyperpigmentation occurred in two-thirds of patients, most commonly in Fitzpatrick type II–IV, was described as transient and, following treatment with 4% hydroquinone, resolved in all but 26 patients. Some high-risk patients were treated with 2–3% hydroquinone, for prevention, and it is unclear whether this treatment was initiated preoperatively, or immediately postoperatively. It would seem prudent to develop protocols for preoperative treatment, as well as postoperative treatment, including more information on formulas of ointments, frequency of application, and duration of use. This rate is much higher than the 1.6% found in the analysis of postoperative complications by Kim et al. [3] where power-assisted liposuction was combined with ultrasonic energy.

Seroma occurred in roughly one-third of patients, which responded to percutaneous drainage. This rate is also higher than other reports. For example, Hoyos and Millard, in their VASER-assisted high-definition liposculpture case series of 306 patients, reported a 6.5% rate of seroma, while other authors report a lower rate of 2–16.7% [2, 3]. Prevention techniques could include a less aggressive liposuction approach and more attention to the factors that mitigate seroma following liposuction. The prevention techniques of lymphatic drainage and external ultrasound have been used with success by other authors [4].

Nodular fibrosis 20% (83 of 417 patients) appeared during the 4th–6th week postoperatively and resolved

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spontaneously after 3–6 months. It occurred most commonly in the linea alba and semilunaris and was higher compared to other reports, some of which did not report this as a complication [2]. In our experience, daily patient-performed massage of these areas starting at the time of appearance of the nodules would lessen the time to resolution and give patients a sense of control. In our practice, 100% of patients are recommended to perform scar massage of both external scars and deeper palpable scar tissue.

In conclusion, this case series provides data that the majority of patients will experience at least one complication following high-definition liposuction. With this in mind, at one extreme, some surgeons may prefer to avoid performing high-definition liposuction with VASER, while others may search for ways to mitigate complications. Above all else, this review of a large case series gives objective information for informed consent.

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Compliance with Ethical Standards

Conflict of interest The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent For this type of study, informed consent is not required.

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