Apyx Medical wants to present to you with current scientific discourse.

Publication Information

Tambasco D, Albanese R, Tomaselli F, Pinto V, Pinelli M, De Santis G. Minimizing thighplasty complications: a combined approach of J-medial pattern and helium plasma–assisted liposculpture. *Plast Reconstr Surg.* 2025;156(2):247-251. doi:10.1097/PRS.0000000000011962.

INDICATIONS FOR USE & INTENDED USE DISCLOSURES:

- The Renuvion® APR Handpiece is intended for the delivery of radiofrequency energy and/or helium plasma where coagulation/contraction of soft tissue is needed. Soft tissue includes subcutaneous tissue.
- The Renuvion APR Handpiece is intended for the coagulation of subcutaneous soft tissues following liposuction for aesthetic body contouring.
- The Renuvion APR Handpiece is indicated for use in subcutaneous dermatological and aesthetic procedures to improve the appearance of lax (loose) skin in the neck and submental region.
- The Renuvion APR Handpiece is intended for the delivery of radiofrequency energy and/or helium plasma for cutting, coagulation and ablation of soft tissue during open surgical procedures.
- The Renuvion APR Handpiece is intended to be used with compatible electrosurgical generators owned by Apyx Medical.

Minimizing Thighplasty Complications: A Combined Approach of J-Medial Pattern and Helium Plasma–Assisted Liposculpture

Damiano Tambasco, MD[1]
Roberta Albanese, MD[1,2]
Federica Tomaselli, MD[1]
Valentina Pinto, MD[3]
Massimo Pinelli, MD[3]
Giorgio De Santis, MD[3]

Rome, Udine, and Modena, Italy

PATIENT SAFETY

Summary: Thighplasty is a widely performed body contouring procedure, using various surgical techniques for thigh lifting, including medial scar positioning, vertical and horizontal procedures, and liposuction. Despite its popularity, thighplasty is associated with high complication rates and suboptimal postoperative outcomes. This article presents a novel technique: the J-medial thighplasty combined with helium plasma radiofrequency (HPRF) technology to address moderate skin and soft-tissue laxity and ptosis in the inner thighs. Between 2020 and 2023, 21 patients underwent this combined procedure. The surgical approach involved selective liposuction in targeted areas, skin resection, and preservation of deep tissue layers, coupled with the application of HPRF in the lower third of the medial thigh. Results demonstrated significant reductions in thigh laxity, correction of skin overhang, and fat reduction, yielding improved functional and aesthetic outcomes in the lower thigh region. By strategically avoiding lymphatic vessels in superficial areas, the risk of secondary lymphedema was minimized. Patient satisfaction was notably high, with both patients and surgeons reporting favorable results. In conclusion, the J-medial thighplasty combined with HPRF offers an effective and straightforward method for enhancing the lower thigh area with minimal complications. This innovative technique provides a promising solution for patients seeking improved thigh contouring while ensuring high levels of patient satisfaction. *(Plast. Reconstr. Surg.* 156: 247, 2025.)

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, IV.

Thighplasty is a common body contouring procedure for the lower limbs, which has multiple possible surgical options.[1–5] There are several surgical techniques available for thigh lifts, including vertical and horizontal approaches, and the traditional T-shaped lift.[6,7] These procedures can also be combined with additional liposuction.[8] Despite this variety, the reported complication rate can reach up to 70%,[9] with results often falling short of expectations.[10]

The J-medial thighplasty is highly appreciated for its benefits, including shorter scars than T-thighplasty, excellent contouring, and predictability of results.[11,12] The concomitant use of liposuction can reduce postoperative seroma and lymphedema; however, combined approaches

From the [1]Plastic Surgery Unit, GVM Care and Research, Ospedale San Carlo di Nancy; [2]Department of Plastic and Reconstructive Surgery, Ospedale Santa Maria della Misericordia; and [3]Department of Plastic Surgery, Policlinico di Modena, University of Modena and Reggio Emilia.
Received for publication July 17, 2024; accepted January 6, 2025.
Copyright © 2025 by the American Society of Plastic Surgeons
DOI: 10.1097/PRS.0000000000011962

Disclosure statements are at the end of this article, following the correspondence information.

Related digital media are available in the full-text version of the article on www.PRSJournal.com.

By reading this article, you are entitled to claim *AMA PRA Category 2 Credit*™. ASPS members can claim this credit by logging in to PlasticSurgery.org Dashboard, clicking "Submit CME," and completing the form.

Copyright © 2025 American Society of Plastic Surgeons. Unauthorized reproduction of this article is prohibited.

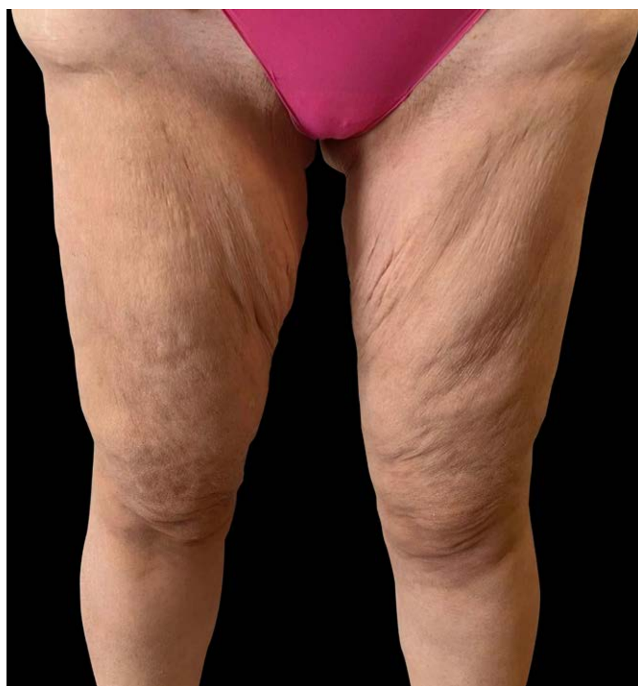

Fig. 1. Preoperative photograph.

increase surgical time and the risk of hematoma, and do not always achieve optimal results.[9] Liposuction aims to reduce subcutaneous adipose tissue without directly affecting skin retraction. Although an indirect effect is recognized, in areas such as the lower limbs, its effects are often insufficient and lead to partial results.

The introduction of a helium plasma radiofrequency (HPRF) for subcutaneous tissue treatment has demonstrated efficacy in skin tightening and is predictable in various applications.[10,13,14] Its combined use with liposuction has been proven effective in reducing surgical scars, even in other body contouring procedures.[15] We present our original approach: a combined J-shaped medial thighplasty with HPRF technology to address skin and soft-tissue laxity and ptosis on the inner thighs.

SURGICAL TECHNIQUE

Between 2020 and 2023, 21 patients underwent the described procedure, with only primary cases included to avoid bias. All patients provided informed consent.

Preoperative ultrasound mapping of the great saphenous vein (GSV) was conducted for all patients. Skin markings were made in both standing and prone positions with the lower extremities abducted. The incision line was marked along the perineal thigh crease, extending anteriorly and posteriorly to the medial buttock crease, with a vertical line drawn posteriorly along the thigh. Anterior marks were placed using the pinch test, focusing on the junction between horizontal and vertical scars. Surgery was performed under sedation with the patient supine in the frog-leg position (Fig. 1).

Table 1. Patient Demographics, Risk Factors, and Surgical Elements[a]

Characteristic	Value (%)
Risk factor	
Smoking	1 (2)
Diabetes	2 (4)
Hypertension	1 (2)
Bariatric surgery	5 (25)
Surgery aspects	
Mean age ± SD, yr	30.4 ± 1.6
Mean BMI ± SD, kg/m²	24.9 ± 1.2
Surgery duration, min	
Mean	96.4
Range	56–123
Infiltration volume, mL	
Mean ± SD	205 ± 140
Range	50–400
Lipoaspirate volume, g	
Mean	234.50
Range	156.40–370.50
Flap weight, g	
Mean	178.5
Range	91.50–275.50
Follow-up, mo	
Median	16.8
Q1–Q3	12.0–36.5
Minor complications	
Seroma	1 (2)
Hematoma	0
Infection	0
Hyperpigmentation	1 (2)
Minor wound dehiscence	1 (2)
Major complications	
Vascular compromise	0
Pulmonary embolism	0
Serious infection requiring intravenous antibiotics	0
Wound dehiscence requiring surgery	0

BMI, body mass index; Q, quarter.
[a] $n = 21$ patients (42 thighs).

For antibiotic prophylaxis, 2 g of cefazolin was injected intravenously immediately before incision. A urinary catheter was placed. Standard Klein solution (1 liter of saline solution, 600 mg of lidocaine, and 1 g of epinephrine) was used, diffusing into both the deep and superficial planes.[16]

Wet conventional liposuction[17] was carried out on the upper two-thirds of the thigh, removing

Copyright © 2025 American Society of Plastic Surgeons. Unauthorized reproduction of this article is prohibited.

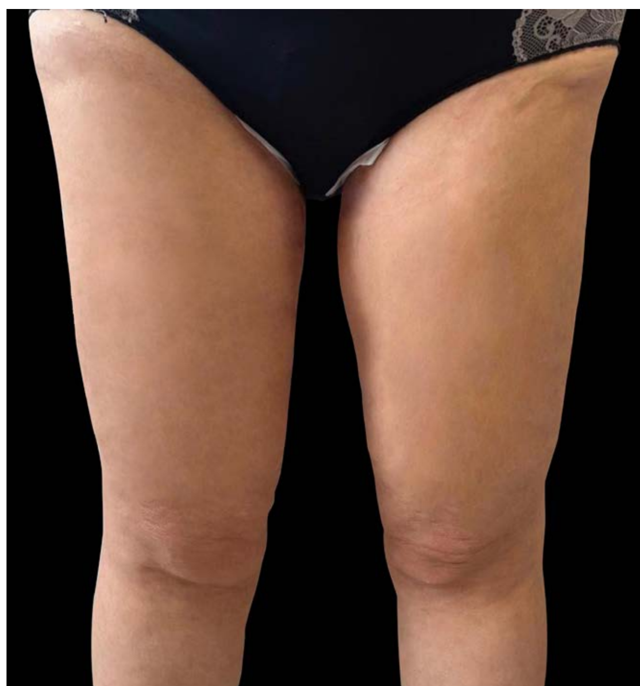

Fig. 2. Postoperative photograph at 14 months.

Fig. 3. Three-quarters postoperative view. The scar is contained in the upper two-thirds of the thigh. Knee contouring appears satisfactory.

adipose tissue between the dermis and superficial fascia with a 4-mm cannula.[18–20] Skin resection was determined by pinching, preserving the deep adipose tissue compartment and GSV. The dissection plane followed the superficial fascia, keeping the deep adipose compartment intact.[21,22]

On the lower thigh, according to preoperative marking, pretunneling was performed before the use of the helium plasma device (Renuvion; Apyx Medical, Clearwater, FL). Aggressive liposuction was avoided in this area to prevent disruption of the fascial support network (FSN), optimizing retraction. HPRF was used with settings adjusted to 80% power and a helium flow rate of 2.5 liters/minute. Passes addressed both the superficial and intermediate planes (3 to 6 passes) to allow optimal shortening of all subcutaneous components. The application of HPRF should not exceed half of the circumference of the entire limb, to avoid vascular injuries. The reduction of the FSN is partially immediate and partially delayed by subsequent healing.[14]

In selected cases, the thigh flap was anchored to the Colles fascia with nonabsorbable sutures. Wound closure was performed in a tension-free manner without drains. The subcutaneous planes were sutured with separate absorbable sutures (Vicryl 2/0 to 3/0; Ethicon, Inc., Somerville, NJ.). For the subdermal plane, 4-0 running sutures (Monocryl; Ethicon) were used. Interrupted absorbable stitches may be used to reinforce skin sutures if needed. (**See Video [online]**, which shows the intraoperative procedure.)

After a minimum follow-up of 12 months, no major complications have been reported, and all patients have consistently expressed satisfaction. Surgical revisions were not required. In addition, the improvement in skin laxity in the distal third of the thigh has consistently been regarded as satisfactory (Table 1).

DISCUSSION

The excess skin in the medial thigh can have a significant impact on patients' quality of life.[23,24] The medial-J technique has shown high patient satisfaction rates because of its short, hidden scars and favorable results.[11]

The most common complications include seroma, hematoma, wound dehiscence, lymphocele, and secondary lymphedema, with incidences reported of up to 70%.[23,25] In particular, secondary lymphedema is a progressive condition resulting from damage to the lymphatic pathways. Although it is not universally acknowledged,[6] the dissection plane for thighplasty should be superficial to avoid damage to the main lymphatic pathway that runs adjacent to the GSV.[26,27]

Copyright © 2025 American Society of Plastic Surgeons. Unauthorized reproduction of this article is prohibited.

Our combined approach (J-thighplasty with HPRF-assisted liposuction) maximizes the benefits of each procedure. Shortening vertical scars reduces the risk of dehiscence,[11] and gentle liposuction minimizes hematoma formation and enhances aesthetic results. Avoiding drains lowers infection rates and improves postoperative care.[5]

We find this technique particularly useful in postbariatric patients, who often experience healing deficits because of histomorphologic alterations in subcutaneous tissue.[28,29] Performing preoperative ultrasound[30] allows for recognition of the course of the GSV, a crucial landmark for the main lymphatic pathway. Knowing its exact position allows for customization of the preoperative design, thereby reducing damage to lymphatic collectors.[25] Furthermore, the likelihood of secondary lymphedema can be lowered by avoiding incisions in the lower third of the thigh, where lymphatic vessels are close to the surface.

HPRF represents a valuable asset in body contouring surgery, especially in the treatment of moderate laxity.[10,13,14] Adequate training and knowledge of the technology are essential. In these patients, performing conservative liposuction while preserving the FSN is crucial. HPRF has a dual function: it achieves direct contraction of the FSN and it stimulates collagen formation; thus, it provides tightening effects in the treated areas, partly immediately and partly over the following 12 months. Furthermore, better skin tone results in less tension on scars and potential migrations.[12] Moreover, excluding patients with severe laxity who require aggressive debulking or those whose specific characteristics (vegetarian/vegan diets) have shown radiofrequency to be less effective is a prudent choice[15,31] (Figs. 1 through).

The J-pattern medial thighplasty combined with HPRF-assisted liposuction is an effective and reproducible procedure. The absence of major complications and the low rate of minor complications demonstrate its efficacy, especially when compared with existing techniques (14% overall). The choice of the technique based on the characteristics of the patients is the key to surgical success. Despite the promising results achieved, further validation through randomized controlled trials and longer follow-up periods will be necessary.

Roberta Albanese, MD
Santa Maria Misericordia Hospital
Piazzale Santa Maria della Misericordia, 15
33100 Udine, Italy
albaneseroberta16@gmail.com

DISCLOSURE

Dr. Tambasco is consultant for Solta Medical and Apyx Medical. The remaining authors have no financial relationships or conflicts of interest to disclose. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sector.

REFERENCES

1. Le Louarn C, Pascal JF. The concentric medial thigh lift. *Aesthetic Plast Surg.* 2004;28:20–23.
2. Gusenoff JA, Coon D, Nayar H, Kling RE, Rubin JP. Medial thigh lift in the massive weight loss population: outcomes and complications. *Plast Reconstr Surg.* 2015;135:98–106.
3. Armijo BS, Campbell CF, Rohrich RJ. Four-step medial thighplasty: refined and reproducible. *Plast Reconstr Surg.* 2014;134:717e–725e.
4. Simone P, Marchica P, Savani L, Persichetti P. An original approach to massive weight loss deformities in the lower thigh: a retrospective assessment of results and patients' satisfaction. *Aesthetic Plast Surg.* 2023;47:1884–1893.
5. Bracaglia R, Tambasco D, Gentileschi S, D'Ettorre M. L-shaped lipothighplasty. *Ann Plast Surg.* 2015;75:261–265.
6. Kilian KK, Panayi AC, Matar DY, et al. Similarity of seroma rate at the medial thigh following free flap harvesting or medial thigh lift: a systematic review and meta-analysis. *JPRAS Open* 2024;40:360–374.
7. Ragonez D, Musmarra I, Barbera F, Couteau C, Aguilar P, Quilichini J. Body lift with lateral thigh lift: surgical technique and comparison with the inferior body lift. *Plast Reconstr Surg.* 2024;155:67–75.
8. Schwaiger K, Russe E, Heinrich K, et al. Thighplasty: improving aesthetics through revival of the medial, horizontal procedure: a safe and scar-saving option. *J Plast Reconstr Aesthet Surg.* 2018;71:585–589.
9. Garoosi K, Mundra L, Jabbari K, et al. Comorbid conditions and complications in body contouring surgery: a retrospective review. *Aesthet Surg J Open Forum.* 2023;5:ojad080.
10. Duncan DI. Helium plasma-driven radiofrequency in body contouring. Available at: https://www.intechopen.com/online-first/helium-plasma-driven-radiofrequency-in-body-contouring. Accessed May 17, 2019.
11. Bertheuil N, Duisit J, Bekara F, Watier E, Gandolfi S, Bergeat D. Risk factors for complications after J medial thighplasty following massive weight loss: a multivariate analysis of 94 consecutive patients. *Plast Reconstr Surg.* 2021;148:540e–547e.
12. Bertheuil N, Carloni R, De Runz A, et al. Medial thighplasty: current concepts and practices. *Ann Chir Plast Esthet.* 2016;61:e1–e7.
13. Shridharani SM, Kennedy ML. Safety of helium-based plasma technology for coagulation of soft tissue: a retrospective review. *Aesthet Surg J Open Forum* 2022;4:ojac081.
14. Ruff PG, Bharti G, Hunstad J, et al. Safety and efficacy of Renuvion helium plasma to improve the appearance of loose skin in the neck and submental region. *Aesthet Surg J.* 2023;43:1174–1188.
15. Tambasco D, Albanese R, Scarabosio A, Tomaselli F, Parodi PC. A three-dimensional approach to male chest enhancement: a surgical algorithm based on 300 cases. *Aesthetic Plast Surg.* 2024;48:3646–3655.
16. Tambasco D, Albanese R, Scarabosio A, et al. Ultrasound and helium plasma-assisted liposuction for body contouring: a single-retrospective cohort study of 639 patients. *Aesthetic Plast Surg.* 2024;49:277–286.

Copyright © 2025 American Society of Plastic Surgeons. Unauthorized reproduction of this article is prohibited.

17. Tambasco D, Hoyos A, Perez M, Tomaselli F, Mir J, Albanese R. Optimizing safety and precision for secondary liposuctions: integrating intraoperative ultrasound with VASER techno logy. *Aesthet Surg J*. 2025;45:NP57–NP64.
18. Mendez BM, Coleman JE, Kenkel JM. Optimizing patient outcomes and safety with liposuction. *Aesthetic Surg J*. 2019;39:66–82.
19. Hoyos A, Perez ME, Guarin DE, Montenegro A. A report of 736 high-definition lipoabdominoplasties performed in conjunction with circumferential VASER liposuction. *Plast Reconstr Surg*. 2018;142:662–675.
20. Tambasco D, Albanese R, Tomaselli F. Reply: "lipoabdominoplasty: comparing UAL versus UAL/PAL techniques on complication profile and patient safety. *Aesthetic Plast Surg*. 2024;48:376–377.
21. Suh YC, Kim SH, Baek WY, Hong JW, Lee WJ, Jun YJ. Superthin ALT flap elevation using preoperative color Doppler ultrasound planning: identification of horizontally running pathway at the deep adipofascial layers. *J Plast Reconstr Aesthet Surg*. 2022;75:665–673.
22. Yamamoto T, Yamamoto N, Fuse Y, Kageyama T, Sakai H, Tsukuura R. Subdermal dissection for elevation of pure skin perforator flaps and superthin flaps: the dermis as a landmark for the most superficial dissection plane. *Plast Reconstr Surg*. 2021;147:470–478.
23. Moreno CH, Neto HJ, Junior AH, Malheiros CA. Thighplasty after bariatric surgery: evaluation of lymphatic drainage in lower extremities. *Obes Surg*. 2008;18:1160–1164.
24. Bertheuil N, Thienot S, Chaput B, Varin A, Watier E. Quality-of-life assessment after medial thighplasty in patients following massive weight loss. *Plast Reconstr Surg*. 2015;135:67e–73e.
25. Tourani SS, Taylor GI, Ashton MW. Anatomy of the superficial lymphatics of the abdominal wall and the upper thigh and its implications in lymphatic microsurgery. *J Plast Reconstr Aesthet Surg*. 2013;66:1390–1395.
26. Suami H. Lymphosome concept: anatomical study of the lymphatic system. *J Surg Oncol*. 2017;115:13–17.
27. Yamazaki S, Suami H, Imanishi N, et al. Three-dimensional demonstration of the lymphatic system in the lower extremities with multi-detector-row computed tomography: a study in a cadaver model. *Clin Anat*. 2013;26:258–266.
28. D'Ettorre M, Bracaglia R, Gentileschi S, Tambasco D. Micro- and macroscopic tissue modifications after bariatric surgery: effects of different procedures—a pilot study. *Aesthetic Plast Surg*. 2013;37:846–848.
29. Tambasco D, D'Ettorre M, Gentileschi S, Colletti R, Mingrone G, Bracaglia R. Postabdominoplasty wound dehiscence in bariatric patients: biliopancreatic diversion versus gastric bypass: a preliminary study. *Ann Plast Surg*. 2015;75:588–590.
30. Tambasco D, Tomaselli F, Albanese R. Use of intraoperative ultrasonography to optimize secondary liposculpture results. *Aesthetic Plast Surg*. 2025;49:2143–2144.
31. Akpolat ND, Unlu S. The effect of a restricted diet on the results of fractional microneedle radiofrequency therapy: a comparison of vegan and omnivorous participants in terms of the antiaging effect of radiofrequency therapy. *Lasers Surg Med*. 2022;54:964–969.

Copyright © 2025 American Society of Plastic Surgeons. Unauthorized reproduction of this article is prohibited.