

## ORIGINAL CONTRIBUTIONS

# Minimally invasive aesthetic treatment of male patients: The importance of consultation and the lower third of the face

Erminio Mastroluca MD, PhD<sup>1</sup> | Mariagrazia Patalano MD, PhD<sup>2</sup> | Dario Bertossi MD<sup>3</sup> 

<sup>1</sup>Studio Medico Dr EMastroluca, Rome, Italy

<sup>2</sup>Studio Medico Dott.ssa MgPatalano, Messina, Italy

<sup>3</sup>Department of Surgery, Dentistry, Pediatrics and Gynaecology, University of Verona, Policlinico G.B. Rossi, Piazzale LA Scuro 10, Verona, Italy 37134, Italy

## Correspondence

Dario Bertossi, Department of Oral and Maxillofacial Surgery, University of Verona, Policlinico G.B. Rossi, Piazzale L. Scuro, 10 - 37134, Verona, Italy.  
Email: dario.bertossi@univr.it

## Funding information

Allergan

## Abstract

**Background:** Men worry disproportionately about potential negative consequences of facial aesthetic treatment with injectable therapies, such as side effects or appearing more feminine. Features of the lower third of the face (eg, prominent chin and jaw) are particularly important in perceptions of masculinity. A strategy has been developed for male patients based on an initial consultation emphasizing the safety and masculinizing potential of injectables, followed by treatment with a high G' hyaluronic acid filler targeting the lower third.

**Aims:** To assess this strategy in routine practice.

**Methods:** This was a retrospective analysis of male patients with poor definition of the lower third of the face wishing to undergo non-surgical correction. Initial consultation focused on detailed patient education and facial masculinization with injectables. Individuals were then treated in the lower third using VYC-25 based on the standardized MD Codes approach. Follow-up lasted  $\leq 12$  months.

**Results:** Forty patients were included (mean age:  $40.9 \pm 9.6$  years). The mean volume of VYC-25 injected into the lower third was  $7.8 \pm 1.2$  ml. Patient satisfaction was high, as assessed using the FACE-Q "Satisfaction with outcome" questionnaire (mean Rasch-transformed score:  $88.1 \pm 10.3$ ). Complications included the following: soft tissue edema,  $n = 12$  (30.0%); hematoma,  $n = 6$  (15.0%); and telangiectasia,  $n = 2$  (5.0%). All were early, transient, and minor; there were no major or delayed events.

**Conclusions:** This approach to male subjects was practical and safe despite the large volumes of filler used. Focusing on the lower third may help to reassure patients and deliver results that respect masculine identity.

## KEYWORDS

filler, hyaluronic acid, male patient, minimally invasive, VYC-25

## 1 | INTRODUCTION

Men represent only a small proportion of the overall patient population in aesthetic medicine. Indeed, in 2018, only around 10% of minimally invasive, non-surgical facial treatments using hyaluronic acid (HA) fillers or botulinum neurotoxin type A (BoNTA) were given

to male patients.<sup>1,2</sup> Men are also under-represented in clinical trials of these products.<sup>3</sup>

However, growing numbers of males are consulting with practitioners about the possibility of facial aesthetic treatments.<sup>4,5</sup> This apparent increase in popularity may be driven by several factors, including the following: greater desire among many men to look

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2021 The Authors. Journal of Cosmetic Dermatology published by Wiley Periodicals LLC.

younger or to be more competitive in the workplace; greater media attention on male appearance and grooming; increasing acceptance within society of cosmetic procedures; and the growing availability of minimally invasive treatment options that decrease downtime and reduce visible signs of having been treated (which may be particularly appealing to men).<sup>6-8</sup>

Nonetheless, men are often disproportionately worried about potential negative consequences of treatment, such as looking more feminine or unnatural, or experiencing side effects.<sup>7</sup> Before any corrections with minimally invasive treatments can be made, the initial consultation must therefore empower men to proceed. However, there remains a paucity of literature focusing on consultation with male patients. Given the importance of lower facial features in perceptions of masculinity—particularly a prominent chin and jaw<sup>5,9</sup>—it may be sensible to focus on this part of their face. We have developed a strategy with male patients based around: (i) an initial consultation that emphasizes discussion of the safety and masculinizing potential of minimally invasive, injectable products; and (ii) treatment with high G' fillers targeted primarily at the lower third of the face. The aim of the present study was to assess this strategy in the context of normal clinical practice.

## 2 | MATERIALS AND METHODS

### 2.1 | Study design

This was a retrospective analysis of male patients undergoing aesthetic treatment of the face using HA fillers, with a focus on the lower third. Treatments were undertaken across three centers between May and September 2019. The study was conducted in accordance with the Declaration of Helsinki. All subjects provided written informed consent.

Eligible individuals were adult males with poor definition of the lower third of the face who wished to undergo non-surgical correction of this area. Exclusion criteria included acute or chronic local infection, diabetes mellitus, bleeding disorders, history of systemic autoimmune or oncologic conditions, or psychiatric conditions that could affect treatment.

### 2.2 | Patient consultation

All patients were given an in-depth consultation during their initial visit, and this was a key element of the overall approach. The consultation was focused primarily on patient education because the main barriers to undergoing minimally invasive aesthetic treatments among males stem primarily from a lack of understanding—such as concerns over an unnatural or feminizing outcome or the potential for side effects.<sup>5,7</sup> Patient education is particularly important with fillers given that men appear to have lower awareness of these products compared with other aesthetic modalities, such as plastic surgery, liposuction, and hair transplantation.<sup>7</sup>

Another key aspect of the first consultation was to reassure patients that the treatment approach with males is different as compared with female patients and that absolute respect for their masculinity would be central to any treatment plan. Hence, the correct use of language was considered to be essential. Putting patients at ease at this stage was central to ensuring that they then returned for treatment.

Specific discussions focused on enhancing the male characteristics of the face. Every face is different and complex in its own right, and hence, it is difficult to completely standardize the approach. However, with regard to the lower face, “masculinization” typically related to alterations of class I (normal) and class II (retrognathic) profiles; we can typically exclude class III profiles, which are associated with a prognathic mandible and excessive protrusion of the chin.

As with female patients, the aesthetic evaluation of male faces started with the middle third to assess atrophy in this area. This was then followed by evaluation of the lower third rather than the upper third, which is the reverse of how we would usually evaluate females. The normal approach was to discuss specific focus areas with the patient and to mark these “weaknesses” on their face. This made it easier for individuals to visualize the exact areas that were to be injected. It also helped to reassure them that treatments associated with a more feminizing result would be avoided, such as lip volumization or raising of the eyebrows.<sup>5</sup>

### 2.3 | Procedures

All patients were given masculinizing treatment of the lower third of the face (jawline and chin) using the HA filler, VYC-25 (Volux<sup>®</sup>, Allergan, Dublin, Ireland). VYC-25 has the highest G' and cohesivity of the fillers within the Vycross<sup>™</sup> range of products.

Injection points were based on those described in the standardized MD Codes<sup>™</sup> approach,<sup>10,11</sup> and the acronyms used are from this method: Jw1, mandibular angle; Jw2, pre-auricular area; Jw3, mandibular body; Jw4, lower pre-jowl; Jw5, lower anterior chin; C1, labiomental angle; C2, chin apex; C3, anterior chin; C4, anterior chin / Pogonion; C5, lateral lower chin; and C6, lateral chin. A 25G 38-mm cannula was used for all points except C2-3-4-5 and Jw1, for which a 27G 13 mm needle was preferred. The injection volumes provided below are the standard ranges, although quantities outside these values were used in a limited number of cases, based on individual patient needs. Specifically, in the jawline, the mandibular angle and posterior jawline (Jw1-2-3) were typically treated with 1–1.5 mL of VYC-25 per side injected subcutaneously (or supraperiosteally in Jw1). For Jw2 and Jw3, particular care was taken to avoid the parotid gland and the superficial temporal artery. In the chin and anterior jawline, points Jw4 and Jw5 were injected subcutaneously with 0.5–1 ml of VYC-25 per side using a linear technique, point C1 was injected subcutaneously with 0.5–1 ml per side using a fanning technique, C2 was injected subcutaneously or supraperiosteally with 0.2–0.4 ml per side or in the middle line, C3 was injected in the supraperiosteal plane using 0.2–0.4 ml per side (with care taken

**FIGURE 1** Masculinization of the lower third of the face using VYC-25. A 29-year-old man with Fitzpatrick skin type III before (A–B) and 4 weeks after (C–D) masculinizing treatment with 10 ml of VYC-25. Prior to injection, the patient had a pulled back chin and a lack of adequate support for the lower lip. Furthermore, the jaw was poorly defined, and the chin was weakly projected and not well proportioned with the rest of the face. He was treated with 1 ml per side of VYC-25 at point Jw1 and 0.5 ml per side at each of Jw3, Jw4, and Jw5. In addition, the patient was injected with 0.7 ml per side at point C1, 0.8 ml per side at C2, and 0.5 ml per side at points C3 and C6. After treatment, he showed greater definition of the lower third of the face. In particular, the profile view shows improvements in the defect of the chin and in the poorly defined jaw. Images courtesy of Erminio Mastroluca



not to get too lateral due to the mental artery), C4 was injected subcutaneously in the middle line with 0.2–0.4 ml, C5 was injected supraperiostally with 0.2–0.4 ml per side, and C6 was injected in the subcutaneous plane using 0.1–0.5 ml per side of VYC-25 and a fanning technique.

The injected areas were gently massaged for 1 minute with fusidic acid cream for topical skin disinfection and to prevent pseudonodule formation resulting from the high viscosity of VYC-25. All patients were informed about the risk of swelling and chin pain lasting 3–4 days post-treatment.

Follow-up appointments were scheduled at 1 and 6 months post-treatment. Clinical photographs were taken before and after treatment.

Patient satisfaction was assessed using the FACE-Q™ “Satisfaction with outcome” questionnaire,<sup>12</sup> which was completed by all participating subjects 18–22 months post-treatment.

Respondents rated their agreement with six separate statements relating to their overall satisfaction across the intervening period, using a 4-point scale: 1, definitely disagree; 2, somewhat disagree; 3, somewhat agree; and 4, definitely agree. Sum scores were calculated as totals out of 24 and were then converted into “Rasch” scores out of 100, as per the instructions on the questionnaire.

Complications were recorded immediately post-treatment and also assessed during routine follow-up visits. Routine follow-up lasted for up to 12 months.

## 2.4 | Statistical analyses

Descriptive statistics are provided throughout, including mean, standard deviation and range for continuous variables, and frequency and percentage for categorical variables.

### 3 | RESULTS

A total of 40 male patients were included in the analysis, with a mean age of  $40.9 \pm 9.6$  years (range: 23–60 years). All were of Caucasian ethnicity. Included patients were treated with VYC-25 in the lower third of the face, using a mean volume of  $7.8 \pm 1.2$  mL (range: 5–10 ml). The volume required corresponded with soft tissue thickness and underlying bone support. Thus, the amount of filler used was customized to the clinical situation for each individual patient.

Following treatment, all patients expressed satisfaction with results, equivalent to the highest level on the Global Aesthetic Improvement Scale ("very much improved"). Assessments were also

made using the FACE-Q "Satisfaction with outcome" questionnaire. All 40 patients rated their satisfaction between 21 and 24 out of a maximum potential score of 24; the mean Rasch-transformed score was  $88.1 \pm 10.3$  (range: 73–100). Example images are provided in Figures 1-3.

All recorded complications were early, transient, and minor (Table 1). In total, 12 patients (30.0%) experienced soft tissue edema within the first 2 days following treatment. Furthermore, there were 6 cases (15.0%) of hematoma and 2 cases (5.0%) of telangiectasia, all in the chin area. Complications resolved spontaneously within 2 days, apart from the cases of telangiectasia, which resolved only after use of Nd:YAG laser.



**FIGURE 2** Masculinization of the lower third of the face using VYC-25. A 44-year-old man with Fitzpatrick skin type III before (A–C) and immediately after (D–F) masculinizing treatment with 5 ml of VYC-25. Prior to treatment, the patient had a weak and upward tilting chin and a weak vertical dimension of the lower face. To reduce the labial-mental angle, point C1 was injected with 1.4 ml per side into the subcutaneous layer using a cannula and a fanning technique. In addition, point C2 on the chin apex was injected with 0.2 ml per side and 0.2 ml in the middle line in a small bolus using a needle at bone level. Treatment of C1 and C2 delivered increased chin projection, an improved vertical dimension of the lower face, and downward rotation of the chin. To square the chin and to provide lateral support, point C5 was treated with 0.4 ml per side, and this created greater definition in the lower third of the face. To correct the chin dimple, a bolus of 0.2 ml was injected into point C4 with a needle. Redefinition and lift of the jawline were achieved with 0.2 ml per side injected into point Jw4 at the subcutaneous level using a cannula with a linear technique. Oblique and profile views demonstrate improved contour and projection following treatment. Images courtesy of Mariagrazia Patalano



**FIGURE 3** Masculinization of the lower third of the face using VYC-25. A 29-year-old man with Fitzpatrick skin type IV before (A–B) and 10 months after (C–D) masculinizing treatment with 8 ml of VYC-25. Prior to treatment, the patient showed a lack of definition in the jawline, a weak chin, and a lack of labiomental projection. To create better definition, 1.5 ml per side was injected in the mandibular angle (point Jw1) at the supraperiosteal level as a small bolus using a needle, and in the mandibular body (point Jw3) at the subcutaneous level using a cannula with a linear technique. In addition, 1 ml per side was injected at points Jw4 and Jw5 subcutaneously using the same technique as Jw3, to lift the jawline. Points C1 and C2 were treated to elongate the chin and improve vertical height. Injection of C1 was performed with 1 ml in the subcutaneous layer using a cannula and a fanning technique; C2 was redefined based on a single injection in the midline of the chin apex at bone level using 0.4 ml. In order to square the chin and create more definition in the lower third of the face, point C5 in the lateral lower chin was injected with a supraperiosteal bolus of 0.3 ml per side. Finally, the pre-jowl sulcus (point C6) was treated with 0.5 ml per side using a cannula and a fanning technique. Profile views show greater jawline definition and improvements of the moderate chin defect with treatment. Images courtesy of Dario Bertossi

#### 4 | DISCUSSION

This analysis demonstrated the utility of a sex-specific approach to the minimally invasive aesthetic treatment of male patients in an initial cohort of 40 men. There were two key elements: an initial consultation focused on detailed patient education and discussion of the potential for “masculinization” with injectable products and treatment with a high G’ filler targeting the lower third of the face. This focus on the lower third is different from our typical practice with females, which puts more emphasis on the upper third of the face.

Our approach to consultation was designed to help male patients overcome frequent barriers to proceeding with treatment, particularly relating to worries about unnatural or feminine outcomes, as well as the potential for side effects.<sup>5,7</sup> In our experience, men who understand that they can achieve a masculinizing effect with minimally invasive treatments are usually more confident about aesthetic medicine.

When consulting with male patients within a typically female-dominated daily practice, it is important to bear in mind important differences in their facial anatomy, aging pattern, mode of interaction

TABLE 1 Complications

Complication	Patients, n (%)
Transient (48-hour) soft tissue edema	12 (30.0)
Hematoma	6 (15.0)
Telangiectasia	2 (5.0)

Note: N = 40.

with healthcare services, and aesthetic treatment preferences.<sup>5,8,9,13</sup> With regard to anatomy, key features of the male face relative to females may include a squared and more prominent chin and a wider jawline.<sup>5,9</sup> This part of the face is central to perceived attractiveness.<sup>14</sup> Moreover, a prominent jawline is often considered to imply “strength of personality,” and volume loss and skin laxity in this area are frequent aesthetic concerns.<sup>5,7,9,14</sup>

In most cases, male patients want to retain or enhance masculine features and may be resistant to changes that appear to be more feminizing.<sup>5,8</sup> Unsurprisingly, therefore, treatment preferences among men often tend more toward sculpting of the chin and jawline,<sup>5,7</sup> and our approach was focused primarily on these areas. By contrast, men are less likely than women to concentrate their treatment priorities on other parts of the face, such as the lips and perioral area<sup>5,7</sup>; our approach was much less focused on these areas.

Treatment modalities should be selected to match the underlying requirements. BoNTA injection is the single most commonly performed cosmetic procedure with male patients, whereas fillers are generally less popular.<sup>1,2</sup> Men also typically have low awareness of these products compared with other aesthetic treatments, such as plastic surgery and hair transplantation.<sup>7</sup> However, with appropriate education and reassurance, fillers can give excellent results, as demonstrated in the present work.

All treatments were based on VYC-25, a novel HA filler from the Vycross™ range, which comprises multiple products with varying mixtures of high- and low-molecular-weight HA to provide tailored physical properties.<sup>15</sup> Based on preclinical comparative research, VYC-25 has the highest G' and highest cohesivity of any filler in this range.<sup>16</sup> The main force applied to fillers following injection into the jawline / chin is compression (resulting from skin and muscle tension over prominent bone structures), and hence, the high G' and cohesivity of VYC-25 are particularly important for minimizing lateral spread.<sup>17</sup> Furthermore, as a monophasic filler, it may be more cohesive and less prone to migration than biphasic alternatives from some other product ranges.<sup>18,19</sup>

Thus, VYC-25 offers enhanced potential for sculpting and contouring of the chin and jaw area, with proven effects on facial angles, high rates of patient satisfaction, and durable results lasting at least 18 months.<sup>16,20,21</sup> Injection of filler into the mandibular angle may be used to produce a stronger posterior jawline, while use along the length of the body of the mandible may augment the inferior jawline.

Overall, substantial volumes of filler were used in the lower face. However, there were no major or delayed complications throughout up to 12 months of follow-up. Indeed, all recorded complications

were early, transient, and minor, and most resolved spontaneously. Careful selection of an appropriate injection plan is essential to reducing the likelihood of complications. Furthermore, these treatments should only be performed by experienced injectors with suitable training.

There are of course some important limitations of the present work. In particular, we should acknowledge that it was a retrospective and uncontrolled analysis based on a relatively small cohort of patients. Nonetheless, the results suggest that the approach is practical and safe, and rates of patient satisfaction were high.

## 5 | CONCLUSIONS

Understanding the aesthetic needs of men is becoming increasingly important for practitioners who use minimally invasive treatment methods. However, the approach to male patients should be different from that used with females. Men are often wary of treatments that they perceive could make them look feminine or “done.” Focusing consultation and the subsequent injection strategy on the lower third of the face—particularly the chin and jawline—may be successful both in reassuring male patients and in delivering results that respect their masculine identity.

## ACKNOWLEDGMENTS

Writing and editorial assistance was provided to the authors by Timothy Ryder, DPhil, of Biological Communications Limited (London, United Kingdom) and funded by Allergan plc (now AbbVie) at the request of the investigator. All authors met the ICMJE authorship criteria. Neither honoraria nor payments were made for authorship.

## CONFLICT OF INTEREST

EM, MP, and DB are consultants and speakers for Allergan S.p.A.

## ETHICAL STATEMENT

The study was conducted in accordance with the Declaration of Helsinki. All subjects provided written informed consent.

## ORCID

Dario Bertossi  <https://orcid.org/0000-0002-8635-9967>

## REFERENCES

1. American Society of Plastic Surgeons. *National Plastic Surgery Statistics*; 2018. Available at: [www.plasticsurgery.org/documents/News/Statistics/2018/plastic-surgery-statistics-full-report-2018.pdf](http://www.plasticsurgery.org/documents/News/Statistics/2018/plastic-surgery-statistics-full-report-2018.pdf) Accessed February 17, 2021.
2. International Society of Aesthetic Plastic Surgery. ISAPS International Survey on Aesthetic / Cosmetic Procedures Performed in 2018. Available at: [www.isaps.org/wp-content/uploads/2019/12/ISAPS-Global-Survey-Results-2018-new.pdf](http://www.isaps.org/wp-content/uploads/2019/12/ISAPS-Global-Survey-Results-2018-new.pdf). Accessed February 17, 2021.
3. Roman J, Zampella JG. Demographics of men and minorities in cosmetic clinical trials of botulinum toxin and hyaluronic acid fillers. *Dermatol Surg*. 2020;46:1164-1168.

4. Frucht CS, Ortiz AE. Nonsurgical cosmetic procedures for men: Trends and technique considerations. *J Clin Aesthet Dermatol*. 2016;9:33-43.
5. Keaney TC, Anolik R, Braz A, et al. The male aesthetic patient: facial anatomy, concepts of attractiveness, and treatment patterns. *J Drugs Dermatol*. 2018;17:19-28.
6. Rieder EA, Mu EW, Brauer JA. Men and cosmetics: Social and psychological trends of an emerging demographic. *J Drugs Dermatol*. 2015;14:1023-1026.
7. Jagdeo J, Keaney T, Narurkar V, Kolodziejczyk J, Gallagher CJ. Facial treatment preferences among aesthetically oriented men. *Dermatol Surg*. 2016;42:1155-1163.
8. Cohen BE, Bashey S, Wysong A. Literature review of cosmetic procedures in men: Approaches and techniques are gender specific. *Am J Clin Dermatol*. 2017;18:87-96.
9. Farhadian JA, Bloom BS, Brauer JA. Male aesthetics: A review of facial anatomy and pertinent clinical implications. *J Drugs Dermatol*. 2015;14:1029-1034.
10. de Maio M. MD Codes™: A methodological approach to facial aesthetic treatment with injectable hyaluronic acid fillers. *Aesthetic Plast Surg*. 2021;45(2):838-843. <https://doi.org/10.1007/s00266-020-01762-7>
11. Bertossi D, Nocini PF, Rahman E, Heydenrych I, Kapoor KM, de Maio M. Non-surgical facial reshaping using MD Codes. *J Cosmet Dermatol*. 2020;19:2219-2228.
12. Klassen AF, Cano SJ, Schwitzer JA, Scott AM, Pusic AL. FACE-Q scales for health-related quality of life, early life impact, satisfaction with outcomes, and decision to have treatment: development and validation. *Plast Reconstr Surg*. 2015;135:375-386.
13. Keaney T. Male aesthetics. *Skin Therapy Lett*. 2015;20:5-7.
14. Naini FB, Donaldson AN, McDonald F, Cobourne MT. Assessing the influence of chin prominence on perceived attractiveness in the orthognathic patient, clinician and layperson. *Int J Oral Maxillofac Surg*. 2012;41:839-846.
15. Goodman GJ, Swift A, Remington BK. Current concepts in the use of Voluma, Volift, and Volbella. *Plast Reconstr Surg*. 2015;136:1395-1485.
16. Ogilvie P, Sattler G, Gaymans F, et al. Safe, effective chin and jaw restoration with VYC-25L hyaluronic acid injectable gel. *Dermatol Surg*. 2019;45:1294-1303.
17. Pierre S, Liew S, Bernardin A. Basics of dermal filler rheology. *Dermatol Surg*. 2015;41(suppl 1):S120-S126.
18. Mansouri Y, Goldenberg G. Update on hyaluronic acid fillers for facial rejuvenation. *Cutis*. 2015;96:85-88.
19. Sundaram H, Rohrich RJ, Liew S, et al. Cohesivity of hyaluronic acid fillers: Development and clinical implications of a novel assay, pilot validation with a five-point grading scale, and evaluation of six U.S. Food and Drug Administration-approved fillers. *Plast Reconstr Surg*. 2015;136:678-686.
20. Ogilvie P, Benouaiche L, Philipp-Dormston WG, et al. VYC-25L hyaluronic acid injectable gel is safe and effective for long-term restoration and creation of volume of the lower face. *Aesthet Surg J*. 2020;40(9):NP499-NP510.
21. Bertossi D, Robiony M, Lazzarotto A, Nocini R, Giampaoli G, Nocini PF. Non-surgical redefinition of the chin and jawline of younger adults using a hyaluronic acid filler: Results using a grid system approach. *Aesthet Surg J*. 2020. <https://doi.org/10.1093/asj/sjaa179>. [Epub ahead of print].

**How to cite this article:** Mastroluca E, Patalano M, Bertossi D. Minimally invasive aesthetic treatment of male patients: The importance of consultation and the lower third of the face. *J Cosmet Dermatol*. 2021;20:2086–2092. <https://doi.org/10.1111/jocd.14231>