



Seth R. Thaller
Mimis N. Cohen
Editors

A Comprehensive Guide to Male Aesthetic and Reconstructive Plastic Surgery

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Opening page: Charioteer (Heniochos) or rein-holder of Delphi. Bronze statue 5th century B.C. Museum of Delphi. Greece.

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This book is dedicated to all of our mentors who have provided us with guidance and educational opportunities to successfully practice our specialty of plastic and reconstructive surgery. To the numerous medical students and residents who have given us the chance to share in their training and careers. These are a significant component of our legacy. Most noteworthy is our families. However, it is our wives, Pat and Andrea, who deserve the most thanks for supporting our endeavors and being there throughout all the trials and tribulations of our journey with love and encouragement.

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Foreword

I was truly honored when Drs. Mimis Cohen and Seth Thaller approached me to write the foreword to their latest textbook collaboration, *A Comprehensive Guide to Male Aesthetic and Reconstructive Plastic Surgery*. As a former resident and mentee of Dr. Cohen, I was witness to the endless hours these editors devoted to the essential textbooks of plastic surgery that we all have on our bookshelves. Cohen's *Mastery of Plastic and Reconstructive Surgery*, Cohen and Thaller's *The Unfavorable Result in Plastic Surgery* and now the long awaited and welcome comprehensive textbook devoted to male plastic and aesthetic surgery. As President of the American Society of Plastic Surgeons, I have had the unique opportunity to travel the globe, attending and lecturing on aesthetic surgery, meeting bright and talented Plastic Surgeons as well as gaining perspective on regional, national, and global aesthetic norms. Interestingly, there remains a dearth of clinical symposia that dedicate much time to the male aesthetic patient.

The male patient now accounts for more than 1.3 million aesthetic procedures a year, accounting for 8–10% of all cosmetic procedures performed in the United States yearly. A two-decade long uptick in male aesthetic surgery can likely be attributed to a variety of factors. These range from wanting to be more competitive in the workplace, the cultural and social acceptance of male aesthetic surgery, as well as the wide variety of minimally and non-invasive treatments is now widely available. *A Comprehensive Guide to Male Aesthetic and Reconstructive Plastic Surgery* is one of the most comprehensive textbooks available to date. Cohen and Thaller called upon some of the most innovative and brightest names in male aesthetic surgery to share their experience. From the initial consultation, pre-operative planning, surgical technique, and post-operative results, the comprehensive content addresses everything from high-definition body contouring and rhinoplasty to nutritional support and anesthesia management. Cohen and Thaller systematically approached the male plastic surgery patient from head to toe, tapping into their authors' expertise, whether discussing the craniofacial considerations and nuances in the male patient, cosmetic dentistry, or marketing and sustaining a male aesthetic practice, the reader will truly understand what a valuable resource this new textbook represents. Additionally, the editors have included a section on Gender Affirming Surgery in this already robust textbook.

I congratulate Drs. Mimis Cohen and Seth Thaller for creating this comprehensive textbook devoted to the male patient. *A Comprehensive Guide to Male Aesthetic and Reconstructive Plastic Surgery* is an essential plastic surgery textbook for every plastic surgeon or trainee to have on their bookshelf or in their digital library.

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Gregory A. Greco

Preface

Cosmetic surgery continues to gain popularity and widespread acceptance worldwide. Still most of our literature on the topic centers on females. This is in spite of the exponential increase in males undergoing both invasive and non-invasive cosmetic procedures. Male grooming industry is predicted to become a \$1.2 billion industry by 2024. ISAPS reported a 14.4% increase of men undergoing cosmetic procedures over the last 2–3 years. This increase is further mirrored by ASPS which found an increase of 29% in the period 2000–2018. ASPS in 2021 reported the three most popular invasive procedures: SAL, gynecomastia, and eyelid rejuvenation. Considering this perceived gap in educational resources and this very real area of growth, we have compiled an outstanding group of national and international contributors who possess extensive experience in the field of male aesthetic and reconstructive surgery. We are extremely grateful to our colleagues for preparing state-of-the-art cutting-edge chapters; our goal is to prepare a handbook encompassing a comprehensive variety of aesthetic and reconstructive surgery related to men. Dr. Eugene Courtiss was the first to tackle this subject in Edition # 1 & 2 of his book: *Male Aesthetic Surgery* initially published by C.V. Mosby St Louis in 1982. This book consisted of 48 contributors, 804 illustrations, and a total of 426 pages. Dr. Robert Goldwyn wrote in the Foreword: “This book is about a growing minority: males who seek to have aesthetic surgery.” Dr. Courtiss opined in the Preface: “Increasingly, males are seeking aesthetic surgery. Both in absolute numbers and in relation to female, more men are being treated by aesthetic surgeons. The reasons for this change involve the very fiber of American Society-its attitudes, economics, and even politics...” These basic tenets have not only remained stable, but this “subspecialty” of plastic and reconstructive surgery has seemingly exploded in popularity over the last few decades. In his second edition of *Male Aesthetic Surgery* also published by C.V. Mosby, St. Louis in 1991 consisted of 45 contributors, 786 illustrations, 435 pages. Noteworthy, Dr. Courtiss included three new topics: Aesthetic Surgery in Asians by Edward Falces and John Imada; Aesthetic Surgery in African-Americans by W. Earle Matory, Jr.; and lastly: Contouring after extreme weight loss by Elvin Zook. Dr. Thomas Rees stated in the Foreword: “Twenty years ago, the very concept of writing a special article, to say nothing of a book the subject of aesthetic surgery on the male would have evoked disbelief and drawn cynical smiles in most quarters of plastic surgery.” Concept of male aesthetic surgery as a distinct clinical entity was further embedded by Marchac, Granick, and Solomon in their book *Male Aesthetic Surgery* published by Butterworth-Heinemann in 1996. Their book consisted of 24 chapters, 413plus pages. Interestingly, in the Introduction Dr. Lawrence Robbins opined: “Perhaps one day we will not discuss male aesthetic surgery just as we do not discuss male appendectomies or other procedures.”

However, with the critical distinctions in gender anatomy, physiology, and procedural goals, the uniqueness and subtleties remain. Since these distinguished accounts which facilitated the growing popularity and universal acceptance of aesthetic and reconstructive surgery in male patients’ tremendous technical advances and better understanding of the unique needs and goals surgical management of male patient have become both commonplace and widely established.

Within this context, we have embarked on developing our new *A Comprehensive Guide to Male Aesthetic and Reconstructive Plastic Surgery*. We were able to cover every conceivable

aspect of male aesthetic and reconstructive surgery. This book is an expanded version with an extensive examination of various contemporary cutting edge and innovative surgical and non-surgical entities. These include the comprehensive management of gender reassignment surgery: facial feminization and masculinization, newly developed biomaterials and implants, high-definition liposuction and lipo-sculpture, surgery for body builders, ethnic variations in blepharoplasty and rhinoplasty as well as additional reconstructive and aesthetic clinical entities. We have further delved into the topic by providing the reader with smart marketing insights to better cultivate this demographic group into your practice. Goal should be using these insights to enhance the scope of individual plastic surgery practices. These topics are often overlooked in customary educational resources on male plastic surgery. We believe that this book will provide our colleagues with a readily available source on all facets of both cosmetic and reconstructive surgery procedures involving our male patients. We look forward to sharing this knowledge and state-of-the-art information with our plastic surgery colleagues. We hope our readers will utilize this handbook to expand and enhance their practices and expertise in this rapidly expanding demographic group.

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Contents

Part I General Topics

1 Distinctive Considerations in Male Aesthetic Surgery	3
Lauren Otaguro, Edward Lee, Mark P. Solomon, and Mark S. Granick	
2 The Male Face	9
Kriya Gishen and Wayne Ozaki	
3 Unique Anatomy of the Male Torso and Extremities	15
Darren M. Smith	
4 Selection of the Male Patient	19
Michael J. Stein and Alan Matarasso	
5 Psychological Aspects of Male Aesthetic Surgery	23
David B. Sarwer, Patrick J. A. Kelly, and Gemma Sharp	
6 Marketing Strategies for Male Aesthetic Patients	35
Katerina Gallus	
7 Ethics in the Practice and Management of Male Aesthetic Patient	41
Angelica Hernandez Alvarez, Jose Foppiani, and Samuel J. Lin	
8 Medico-Legal Pitfalls Associated with the Male Aesthetic Patient	51
Neal R. Reisman	
9 The Dissatisfied Patient	55
Mimis N. Cohen	
10 Regenerative Medicine in Clinical and Aesthetic Dermatology	65
Samantha D. Verling, Kayla Mashoudy, Matthew Gompels, and Gary Goldenberg	
11 Gender Transition: A Consideration for Anesthesia	81
Sarah Pajek, Samantha D. Verling, and Todd Smaka	
12 Men's Aesthetic Surgery	93
Joyce Sunila and Karen Zupko	
13 Management and Avoidance of Keloids in the Male Patient	101
Minji Kim, Sonia N. Singh, Nicholas Mirsky, and Seth R. Thaller	

Part II Head and Neck

14 Concepts of Male Beauty Over the Centuries	107
Saranna Biel-Cohen and Mimis N. Cohen	

15	Anatomy of the Male Aging Face	125
	Chad A. Purnell and Mimis N. Cohen	
16	Male Facial Rejuvenation	141
	Michael J. Stein and Alan Matarasso	
17	Forehead and Eyebrow Rejuvenation	149
	Renato Saltz and Eric W. Anderson	
18	Male Neck Rejuvenation	163
	Petros Konofaos and Robert D. Wallace	
19	Rejuvenation of the Face and Neck with Direct Excision Techniques	171
	Emily R. Finkelstein, Sinan Jabori, Wrood M. Kassira, and Seth R. Thaller	
20	Male Blepharoplasty	179
	Shanlee M. Stevens and Chris R. Alabiad	
21	Asian Male Blepharoplasty	189
	Jin Suk Byun, Byung Chae Cho, and Jeong Yeop Ryu	
22	The Use of Botulinum Toxin in Male Patients	207
	Mark S. Nestor, Haowei Han, Francesca M. Ceci, and Anita Gade	
23	Dermal Fillers and Facial Fat Grafting in Males	215
	Steven R. Cohen, Jordan Wesson, and Alexandra Mora	
24	Ancillary Procedures for Aesthetic Enhancement of the Male Face	227
	Mark S. Nestor, Haowei Han, Francesca M. Ceci, and Anita Gade	
25	Rhinoplasty	241
	Anthony DeLeonibus, Ali Totonchi, and Bahman Guyuron	
26	Asian Male Rhinoplasty	259
	Kang Young Choi, Taek Kyun Kim, and Jae Yong Jeong	
27	Aesthetic Surgery for the Male Craniofacial Skeleton	273
	David E. Morris and Pravin K. Patel	
28	Facial Implants for Male Esthetic Surgery	285
	Rohan Policherla, Daniel Boczar, Shahin Javaheri, and Paulo G. Coelho	
29	Otoplasty in the Male Patient	295
	Andrew E. Grush, Nicholas H. Yim, Joseph L. Edmonds, Larry H. Hollier Jr, and Edward P. Buchanan	
30	Male Pattern Baldness: Surgical Hair Restoration	305
	Marta Fox and Gregory Turowski	
31	Cosmetic Dentistry: Principles and Techniques	323
	Akanksha Srivastava and David J. Reisberg	
32	Skin Care for Males	343
	Miguel Aristizabal and Michael H. Gold	
Part III Breast, Trunk, and Extremities		
33	Gynecomastia	351
	Benjamin R. Slavin, Alexander R. Gibstein, Susan M. Taghioff, Wrood M. Kassira, and Seth R. Thaller	

34 Male Nipple Reduction	361
Ronald M. Friedman	
35 Male Body Contouring	369
Michael J. Stein and Alan Matarasso	
36 Body Contouring Secondary to Massive Weight Loss	377
Joseph F. Capella, Anthony F. Colon, and Nikita Shulzhenko	
37 High- and Dynamic-Definition Liposculpture (HDL & HD2): Basic Principles and Future Endeavors	393
Mauricio E. Perez and Alfredo E. Hoyos	
38 Abdominal Etching for Male Bodybuilders	411
Tarik Husain, Danielle Ward, Manuel Antun, Jesse Obregon, and Lindsay Tanner	
39 Male Gluteal Contouring with Fat Grafting	427
Onelio Garcia Jr, Pat Pazmiño, and Alexia Stamatiou	
40 The Masculine Approach for Dynamic Definition Liposculpture of the Arm	441
Alfredo E. Hoyos and Mauricio E. Perez	
41 The Masculine Approach for Dynamic Definition Liposculpture of the Legs	455
Mauricio E. Perez and Alfredo E. Hoyos	
42 Body and Extremity Implants for the Male Patient	473
Shahin Javaheri	
43 Hand Rejuvenation	499
Luccie M. Wo, Gabriel De la Cruz, Zubin J. Panthaki, and Kyle Xu	
 Part IV Other Procedures	
44 Surgical Management of Hyperhidrosis	511
Nestor Villamizar and Nelly Chow	
45 Nonsurgical Management of Hyperhidrosis	515
Emily R. Finkelstein, Joanne Buitrago, Wrood M. Kassira, and Seth R. Thaller	
46 Tattoos Removal Evaluation and Management	523
Mark S. Nestor, Haowei Han, Francesca M. Ceci, and Anita Gade	
47 Management of HIV Stigmata in the Male Patient	531
Emily R. Finkelstein, Kathryn M. Rock, Wrood M. Kassira, and Seth R. Thaller	
48 Migraine Surgery in Male	539
Ali Totonchi, Anthony DeLeonibus, and Bahman Guyuron	
49 Varicose Veins in Men	557
Grant Schalet and Jose I. Almeida	
50 Rhinophyma: Diagnosis and Management	567
Lee Weber, Seth R. Thaller, and Wrood M. Kassira	
51 Hidradenitis Suppurativa: Surgical Management	575
Emily R. Finkelstein, Anniki Witter, Marisa Carino Mason, and Sara Danker	

Part V Gender Affirmation Surgery

52 Gender Affirmation Surgery: Principles, Ethics, Concepts, and the Need for Multidisciplinary Approach	593
Brandon Alba, Brielle Weinstein, Elizabeth O’Neill, Annie Fritsch, and Loren Schechter	
53 Facial Feminization	601
Kriya Gishen, Abie Mendelsohn, and Justine Lee	
54 Chest Masculinization	609
Gabriel Del Corral and Brian L. Chang	
55 Transfemale Breast Augmentation	629
Drew Marano and Devin Coon	
56 Gender-Affirming Phalloplasty	635
Brielle Weinstein, Brandon Alba, Elizabeth O’Neill, Annie Fritsch, and Loren Schechter	
57 Metoidioplasty	647
Hannah Glick and Miriam Hadj-Moussa	
58 Management of Adult Acquired Buried Penis	655
Helen Bassett and Nicholas Hauser	
59 Penile Lengthening; Penile and Testicular Implants; Penile Straightening (Peyronie’s Disease; Scrotoplasty; Complications of Circumcision; Webbing)	663
Brielle Weinstein, Brandon Alba, Nikki Rezania, Annie Fritsch, and Loren Schechter	
60 Marketing in a Transgender World	669
Dana R. Fox	
Index	677

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Part I

General Topics



Distinctive Considerations in Male Aesthetic Surgery

1

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Aesthetic surgery has steadily gained popularity over the last century. The current market size is estimated to be in billions of dollars in the United States of America alone. This same trend is seen throughout the world. In 2020, the COVID-19 pandemic had a negative effect on the number of aesthetic procedures performed. However, a survey performed by the American Society of Plastic Surgeons in 2022 once again demonstrates a rise in the popularity of aesthetic surgery and a return to pre-pandemic levels [1].

While techniques for aesthetic surgery in male patients have been well known for decades, the increasing popularity of male aesthetic surgery has gradually developed. Senior authors (MSG and MPS) edited a book with Daniel Marchac in 1996 [2] on the topic of aesthetic surgery for men. At the time it seemed that it was picking up in popularity throughout the Western world as reflected by the international list of authors. Levels of male aesthetic surgery have remained low compared to women. Now males are seeking out more cosmetic surgeries as well as injectables and other in-office procedures. Males still only constitute approximately 10% of patients undergoing aesthetic surgery. Those numbers are likely to increase. Liposuction remains the most common male aesthetic procedure obtained by men. Other popular surgeries include gynecomastia excision, blepharoplasty, rhinoplasty, abdominoplasty, and facelift. In addition to surgical treatment, males choose to undergo non-surgical procedures. These include neurotoxin and filler injections, skin treatments consisting of chemical peels and lasers, hair

removal, and fat reduction [3, 4]. This book is intended to address the specific needs of male aesthetic patients and the techniques to achieve their goals.

Attitudes and Trends in Male Aesthetic Surgery

The total number of aesthetic procedures performed on males has almost tripled over the last two decades. This can be attributed in part to a rising number of men investing more time and money in grooming. In recent years, the men's personal care industry has exponentially increased and is now valued at tens of billions of dollars. This industry is projected to increase by 9% annually over the next 10 years [5].

Historically, aesthetic surgery was focused on women. A stigma existed around male aesthetic treatment. Dissolving stigma and normalization of male aesthetics in Hollywood and Wall Street may also be associated with the rise in male aesthetic surgery. We can only expect this number to increase, as external pressures from the media and social media to prevent aging or improve one's appearance persist. Millennials, the next aging generation, have shown an upward trend in undergoing both aesthetic surgery and non-surgical procedures [6].

Despite its growing popularity, only 22% of the 453 plastic surgery practice websites analysed contained a page dedicated to male services. Moreover, only 5% of the over 4000 images reviewed on these websites featured a male. More directed and targeted advertising is likely to influence more men to seek out aesthetic surgical and minimally invasive enhancements [7].

As females still comprise most of the patients who undergo aesthetic surgery, much of the focus on performing a successful surgery or non-invasive procedure pertains to the female body and current accepted female beauty standards. Theoretically, there should be no difference in the

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goals and techniques of aesthetic surgery between genders. In practice, there are significant differences that must be considered when performing procedures on the male patient. These differences arise from the unique goals of male patients undergoing aesthetic surgery, distinct anatomical facial features and body habitus, and male-specific problems that plastic surgeons must address.

Goals of Male Aesthetic Surgery

There are a variety of reasons men seek out plastic surgery. One crucial factor is that female partners of male patients often introduce them to aesthetic procedures. Other common motivations include “looking younger” and “improving competitiveness” in the workplace as. In contrast, women often choose to undergo aesthetic procedures to “feel better” or “look less tired.” There is a more career-driven motive among men to alter their appearances [8].

Males may also choose to undergo aesthetic surgery to appear more or less masculine. The spectrum of masculinity may have significant psychological impacts on self-perception and societal perception. Males who possess an exaggerated masculine look may be perceived as threatening or aggressive. Conversely, “too feminine” males may be seen as less trustworthy. This perception varies amongst different ethnicities and cultures.

The male patient typically is less familiar with the medical system and the various surgical and non-surgical options available to him. There are exceptions to this [9]. Therefore, it is advised that physicians spend time educating the male patient on preoperative and postoperative expectations for all surgeries and procedures, including downtime, restrictions, and both surgical and non-surgical options available.

Historically, male aesthetic patients were thought to have a higher percentage of psychiatric disorders. Though in more recent years this has proven to be unfounded. The plastic surgeon must evaluate for psychiatric disorders such as body dysmorphism (including penile dysmorphic disorder) or narcissism during the initial consultation. These entities should still be considered contra-indications to operating on a patient with unrealistic or unreasonable expectations [10].

Male Anatomy

Divergence in characteristics between genders begins at puberty because of sex hormones that regulate the development of secondary sex characteristics. An increase in testosterone leads to an overall increase in bony volume and muscle mass. The reticular dermis will contain more adnexal structures and hair follicles. Male skin tends to be thicker than female skin, though age and ethnicity also play a role in

overall skin thickness. Men commonly have less subcutaneous fatty tissue than women.

Male Facial Anatomy

Many facial analysis studies report on distinctive masculine features. Facial analysis classically separates the face into vertical thirds, forming the upper, middle, and lower face. The upper face starts from the hairline to the glabella. The middle face ranges from the glabella to the base of the nose. The lower face consists of the nasal base to the inferior edge of the mandible. The typical male facial shape is narrower, longer, and more rectangular than a female. A larger bony volume in males holds true when analysing male facial bones. Differences in bony structure, musculature, and soft tissue result in secondary sex characteristics separating a masculine face from a feminine one.

Upper Face

Male hairline forms an “M” shape that may be accentuated with androgenetic alopecia. The foreheads of men are taller, with an average height of 6–8 cm measured from the trichion to the mid-glabella. Frontal bone also tends to be less steeply inclined than in females and forms a more projected supraorbital rim. There is increased temporal hollowing in males.

Male eyebrows lie straighter, with less or no arch, and are typically fuller and thicker. Their eyebrows sit at the supraorbital rim, lower than in females, whose eyebrows generally sit above the supraorbital rim by 5–10 mm [11].

Middle Face

Glabella is more prominent in males than in females. This, in addition to a more projected supraorbital rim, leads to a more acute nasofrontal angle. Male eyes usually are more deeply set than seen in females. Males typically have narrower palpebral fissures, greater intercanthal distance, and a lower supratarsal crease which measures 6–8 mm. It should be noted that these findings may vary according to ethnicity. Some studies have shown that larger eyes proportional to face size can lead to a more feminine appearance [12].

Male noses are typically greater in both length and width due to a greater amount of bone and cartilage in men. This leads to a wider dorsum and nasal base, and higher nasion. Other nasal differences in men include a steeper inclination of the nose, no or minimal supratip break, a flat or convex dorsum (i.e. dorsal hump), and a more anteriorly projected tip with less tip rotation. This results in a nasolabial angle of 100–103°, more acute than seen in females [13].

Women tend to have greater cheek protrusion but a less pronounced zygomatic arch than men. This is owed to the fact that men have larger zygomas that extend more inferiorly and have a maximal projection superolateral, with less hollowing in the submalar area [14].

Lower Face

Lower face consists of the upper and lower lips, maxilla, mandible, and chin. In males, the height of the lower face is longer due to a vertically taller and overall larger mandible than seen in females. Mandibles seen in men possess a prominent angle with lateral flaring. A greater number of masseteric attachments in addition to a longer mandible contribute to a wider jaw and overall rectangular male face shape.

Chin tends to be more pronounced in men with a sharper gonial angle than in women by about 2.7 degrees. Males may also have bilateral lateral mental eminences, compared to a singular eminence found in females. This can lead to a squarer appearance rather than a pointed chin more often seen in women.

Male lips, while dependent on ethnicity, in general, have more overall volume than females. However, because males also tend to have wider lips and a greater proportion of the cutaneous upper lip height to the upper vermilion lip height, their upper lips may appear less full than female lips. Facial analysis studies that focus specifically on lips show that there is no significant difference in the ratios between upper and lower lips across both genders. The most common upper to lower lip height ratio is 1:2.

Clinical Implications for Male Facial Surgery

Surgical planning for the male patient undergoing facial aesthetic surgery requires an intimate understanding of male anatomy and working closely with the male patient to determine his goals for surgery. Reassurance must be provided to patients that the surgical approach and goals are distinct between males and females.

Incisions must be carefully placed to be well hidden without the use of makeup. These can be hidden in hair lines or natural creases or rhytids in the face. For upper blepharoplasty procedures, incisions are generally placed lower on the upper lid as the tarsal plates in males are generally shorter in height. In contrast, there is more variety in the placement of abdominoplasty incisions. This decision is generally based on where the patient's undergarments lie.

In the facelift patient, male sex is a significant factor relating to the incidence of complications, with increased risk of postoperative hypertension and hematoma formation. Increased skin thickness and more vascular and sebaceous

skin elements are thought to play a role in this [15]. Postoperative blood pressure control is of vital importance in the male facelift patient [16].

In general, it is important to keep changes to male facial structure subtle and still retain masculine features. Small changes can cause an unfavorable result. Narrowing an overly wide jaw, or performing a facelift or neck lift that enhances the jawline, has been shown to increase perceived masculinity, likeability, and trustworthiness. Conversely, exaggerating male features may lead to a more perceived aggressive or threatening appearance [17]. In male rhinoplasties, leaving a dorsal hump and a less rotated nasal tip is generally preferable to completely smooth out the nasal dorsum or an overly rotated tip.

Knowledge of male anatomy is also essential for facial masculinizing procedures. Enhancing brow protrusion, increasing the prominence of cheeks and the mandibular angle, and broadening foreheads, noses, and chins can all lead to a more masculine appearance.

Male Abdominal Anatomy

Studies have shown an increased thickness of skin in men compared to women. Factors such as genetics and age play a role in overall skin thickness. As such, males tend to have decreased skin laxity, with the exception of this seen in massive weight loss patients whose primary complaint is excess skin. Due to the effects of sex hormones, fat distribution and body habitus differ between the genders. An android body habitus commonly seen in males consists of a centralized weight gain in the abdominal region and visceral fat. Males also tend to have a lower percentage of body fat compared to women, in addition to higher amounts of muscle or lean body mass. Males also have a decreased incidence of rectus diastasis. They are more likely to present with upper rectus diastasis as opposed to lower diastasis seen in females [18].

Gynecomastia

Breast surgery in men is almost exclusively concerned with gynecomastia. This is the abnormal development of breast tissue in males. It is caused by an increased estrogen level or sensitivity of breast tissue to circulating estrogen. It may present as an idiopathic condition or can be secondary to an underlying disease or medication. Gynecomastia is seen in males of all ages from puberty to adults. It can be a psychologically distressing condition. Consequently, surgical excision is one of the most common cosmetic procedures undertaken. Before surgery, a thorough history and a set of screening labs should be obtained to determine if there is an underlying cause that requires treatment, or inciting

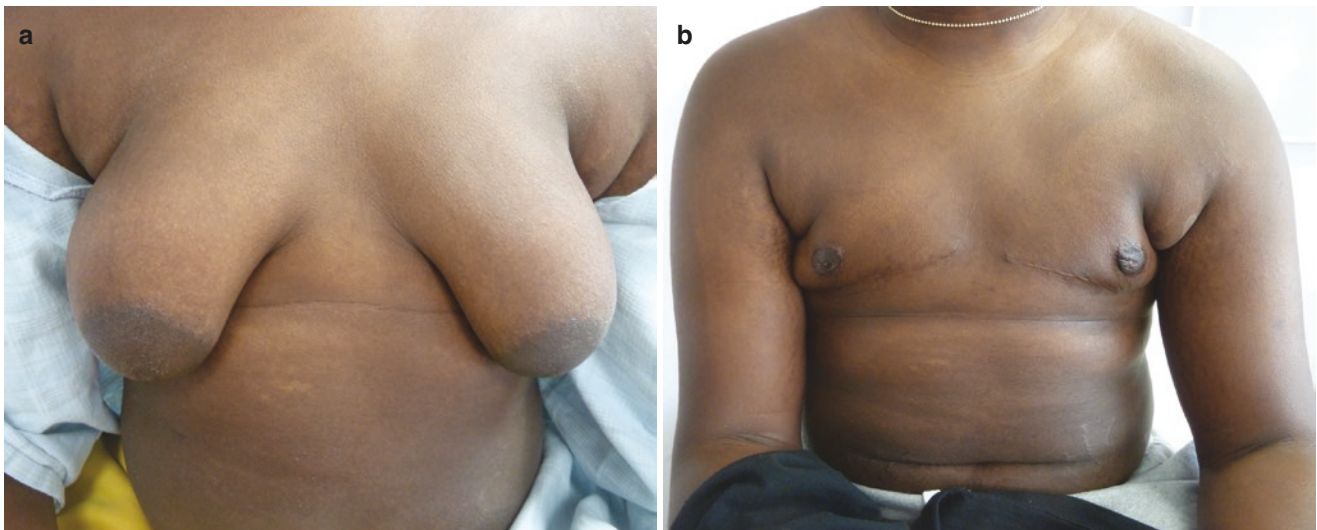


Fig. 1.1 (a) Pre op appearance of severe gynecomastia demonstrating a female phenotype. (b) Post op pictures after bilateral mastectomies and free nipple grafts.

medication that should be discontinued [19]. When lab abnormalities occur, the patient should be evaluated by an endocrinologist before surgery. In boys of pubertal age, observation is recommended, as 90% resolve after 3 years. On physical examination, it is important to distinguish true breast tissue from fatty tissue, which may be seen in obese individuals and present as pseudogynecomastia. This distinction determines surgical planning, as true gynecomastia warrants direct excision of breast tissue, whereas pseudogynecomastia may be treated with liposuction alone. As a distinctly male example, the patient in Fig. 1.1 demonstrates idiopathic breast enlargement with a female phenotype. This degree of gynecomastia requires simple mastectomies and free nipple grafts.

Male Genital Surgery

Nothing exemplifies the anatomic difference between men and women more than the location of their genitalia. There has been considerable focus on enhancements of the female genitalia, from labiaplasty to vaginal rejuvenation and cosmetic monsplasty. In men, the external genitalia are a hallmark of maleness. Much like other parts of the anatomy, the male genitalia have become an area of interest for surgical alteration and enhancement. Therefore, surgeons who provide aesthetic surgery for men should have an awareness of the options available to provide aesthetic improvements for their genitalia. That this area should be a focus of interest for patients should not be surprising. The genitalia play a prominent role in art. One famous example is Michelangelo's sculpture of David in which the genitalia are a central feature of the statue's appearance of strength (Fig. 1.2).



Fig. 1.2 The statue of David by Michelangelo displays disproportionately enlarged genitalia

Male genital surgery includes penis enlargement. These include increases in length, girth, and testicular alteration. A common method promoted for girth enhancement is the use of fillers. While this seems a simple solution to the problem, the complications are multiple and depend on the type of material injected. Each of these materials is being used in an off-label fashion in the United States. This places the physician in legal jeopardy for any complications that arise. Materials in current use include hyaluronic acid, polymethyl methacrylate, polylactic acid, and silicone. Fat injection is also popular. It is not a logical material for girth enhancement. It does provide increased mass, but is soft, which is not an ideal trait for a penis. The concept in plastic surgery of replacing like tissue with like tissue applies to the penis as well. This creates a role for acellular dermal matrices as appropriate for this procedure.

Penis length surgery does not require the use of any implants. It does require an understanding of the anatomy of the suspensory ligaments of the penis and their surgical release. This is a low-risk procedure with a generally good outcome in providing an increase in flaccid penile length of 1–2 in. There is a risk of injury to the dorsal sensory nerve of the penis. There is no data to describe the outcome of an erect penis. Aesthetic surgery of the penis does not provide any significant functional advantage. If there is damage to the sensory function of the penis, erectile function may be adversely affected. Patients should be made aware of this issue before surgery [20].

A more common challenge that should be part of every plastic surgeon's skill set is the management of an acquired buried penis. This is common in men who have a high body mass index (BMI) and in those men who have massive weight loss, either following bariatric surgery or after significant weight loss from diet and exercise. For men with high BMI, the excess body fat acts to stretch the pubic skin and obscure the penis (Fig. 1.3a, b). This is often accompanied by telescoping of the penile shaft skin due to a disrup-

tion of the attachments of the skin to the subjacent Dartos fascia. Some of these patients will present to surgeons who assess the situation as one in which the issue is related to the foreskin. These patients may then be treated with a circumcision. In many cases, especially for men who were previously circumcised, this maneuver will exacerbate the problem by pulling more penile shaft skin over the glans. In effect shortening the visible penis. For men with massive weight loss, this problem is associated with a deflation of the pubic fat pad and descent of the excess skin of the pubis. This acts to further increase the degree of telescoping of the soft tissues on the penile shaft.

Men who have this problem and undergo body contouring surgery that ignores the pubic area often find that the pubis has been elevated. This has the effect of placing pubic tissue in the lower abdomen and pulling the penis in a cephalad direction rather than enhancing its appearance. Surgeons who perform body contouring on massive weight loss patients need to be aware of this phenomenon and must be prepared to stabilize the penis and pubis at the time of abdominoplasty to avoid this complication.

The concepts discussed here can be applied to the treatment of the pubis and penis in conjunction with abdominoplasty, or for treatment of the genitals alone.

Non-Surgical Cosmetic Procedures

Because most men do not wish or are unable to take extended time off to recover and do not wear make-up to conceal incisions or other postoperative skin changes, there has been a dramatic rise in the number of males electing to undergo non-invasive procedures such as neurotoxins, fillers, lasers, and other skin resurfacing procedures. These procedures offer little to no downtime, require minimal preoperative lifestyle changes, and rarely result in visible scarring. [21, 22]

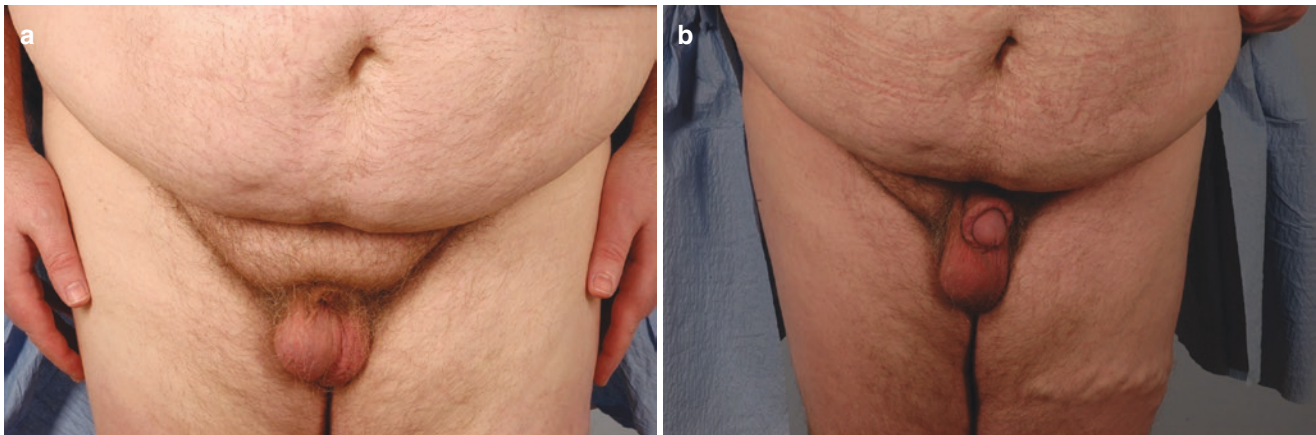


Fig. 1.3 (a) Pre op photo of a male with buried penis and enlarged pubic pad. (b) Post op example of corrected male genital appearance

Neurotoxins

Differences in anatomy must be taken into consideration for neurotoxin injections. Males typically have more facial skeletal musculature which in turn can result in greater movement and deeper rhytids. This results in the need for higher quantities of neurotoxin when compared to their female counterparts to achieve the same effect. It has been shown that as much as 40–80 units of onabotulinumA is required to treat the glabella region. However, many males often still desire to keep some movement of their facial musculature, as opposed to a completely “frozen” look that females tend to want. This must also be taken into account when determining the amount of neurotoxin to inject. As men generally have larger foreheads, more frontalis injection sites are usually necessary. Finally, it is imperative to keep injections 1.5–2 cm above the brow to avoid ptosis due to the already lower location of men’s brows at the supraorbital rim. [23]

Fillers

Fillers can help to enhance masculine features especially when injected in the lower third of the face. They are often used in male patients to sculpt and define the jawline and chin. When injected into the cheek or central face, fillers tend to have a more feminizing effect and should be avoided. [24]

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The Male Face

2

Kriya Gishen and Wayne Ozaki

Introduction

What makes the facial construct “male” versus “female”? From the shape of the hairline to the texture of the skin to the underlying bony structure, the male face is distinct from its female counterpart. To provide quality surgical outcomes, whether reconstructive or aesthetic, the surgeon needs to have a mastery of the anatomic facial features that distinguish males and females. Understanding these differences is particularly important in the case of gender-affirming surgery where the goal is to shift these distinguishing features. As both aesthetic and reconstructive procedures become more widely sought by cisgender males and transgender males and females, it behooves the surgeon to become more knowledgeable in the obvious and nuanced aspects of male facial anatomy. Over the past two decades there has been an almost 300% increase in the number of cosmetic procedures performed on men, with men accounting for 13% of cosmetic patients in 2020 [1]. To provide optimal results for this patient population, surgeons must consider the face as a whole along with its individual defining features.

Facial Proportions

As with females, the male face can be divided into horizontal thirds and vertical fifths. The upper third is defined from the hairline to the glabella. The middle third extends from the glabella to the subnasale. The lower third is from the subnasale to the inferior aspect of the chin or the menton. If the

face is divided into vertical fifths, the ocular width, the intercanthal distance, and the nasal width each measure one-fifth (Fig. 2.1). While this method of dividing the facial structure is the same for women and men, women in general have smaller skulls. Their upper facial features tend to be more pronounced than their lower facial features with a gradual



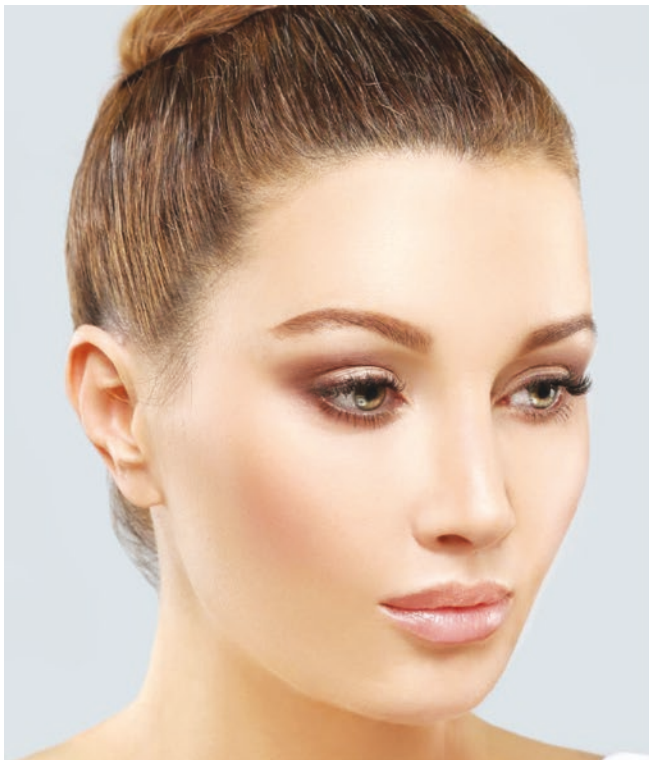
Fig. 2.1 Male face divided in into vertical fifths and horizontal thirds

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taper from the forehead to a less pronounced mandibular structure. By contrast, the male skull is squarer with a larger angled jawline contributing to more even upper and lower facial proportions [2].

The Hairline

The male hairline is typically higher on the skull than the female hairline. This gives the forehead a larger, more pronounced appearance. Additionally, the male hairline is an “M” shape or square shape. The female hairline is an inverted “u” with thicker temporal hair and less temporal recession. In 80% of males, the central portion of the “M” also known as the “widow’s peak” is prominent. This central point sits at 7–10 cm above the central point between the brows [3, 4]. In addition to differences in hairline shape and position, there are differences in hair directionally. Male hairs are projected anteriorly at the hairline. In females, the hairline has a cowlick formation with a whorl pattern as the hairs grow in a posterior direction (Fig. 2.2).



The Forehead and Eyebrows

Men tend to have a more prominent forehead structure than women. Their foreheads are both vertically higher and wider [5] with significantly more pronounced supraorbital or brow bossing. While the female forehead has a smooth gentle convex contour from the hairline to the supraorbital ridge. The male forehead flattens out above the supraorbital ridge before becoming more convex closer to the hairline [6]. Viewed in profile, the male forehead is often noted to have a posterior slant. Additionally, the frontal eminences and temporal ridges tend to be more pronounced in men. In males, the medial aspects of the supraorbital ridge bend into the glabella creating a more prominent glabellar region in males [7]. The male eyebrow sits lower than the female brow with its inferior border at about 11 mm from the pupil [8]. Additionally, it is less arched than the female eyebrow which sits above the orbital rim and peaks at the lateral third [9]. Men in general appear to have deeper-set eyes due to increased brow bossing. Those with particularly prominent supraorbital bossing appear to have low-set eyebrows [10] (Fig. 2.3).



Fig. 2.2 Male versus female hairline

Fig. 2.3 Female skull (left) with less frontal bossing and less angular mandible



Eyes

The appearance of the male eye is determined by the bony orbital socket and the soft tissue structures that form the eyelids. In females, the margins of the orbits are sharper. However, the overall orbital shape is rounder and larger relative to the overall size of the skull. In males, the socket shape is squarer but the margins are more blunted [11]. Anthropomorphic studies show that the male orbital width measures approximately 46 mm compared to be about 2 mm more than the female orbital width [12]. When looking at the soft tissue construct of the upper lid, in males, the upper lid crease sits at 8 mm above the lid margin. In females, the lid crease is higher at 12 mm from the lid margin [13]. Additionally, the male lid tends to have more skin redundancy and is fuller than the female lid, making the aging of the upper lid less dramatic in males. Lower lids in males, however, tend to demonstrate a more pronounced downward shift with age.

Nose

As with the female nose, the male nose should be equal to the distance between the stomion and the menton. This is 1.6 times the distance from the nasal tip to the stomion. Tip projection should ideally be 0.67 times the nasal length [14]. For

both male and female noses, minimal to no nasal deviation should be present. For males, the nasal dorsum is generally wider and straighter than the dorsum of the female with less to no concave slope at the superciliary ridge. Male bony base, which is wider than in females, should be 70–80% of the width of the alar base or intercanthal distance. In Caucasian males, alar flaring should be no more than 3 mm beyond the alar base. This number is slightly increased in non-Caucasian males. As with females, the nasal tip should resemble a seagull in flight from the worm's eye view. From this view, the nasal base should form an equilateral triangle. From a frontal view, the columella should sit slightly inferior to the alar rims.

From a lateral view, the position and depth of the radix are noted. Radix should sit between the upper eyelash line and the supratarsal fold when the patient is looking straight ahead. Males tend to have a larger and more prominent dorsal hump compared to females. When a line is drawn from the radix to the tip-defining points, the male dorsum should lie at this line. Conversely in females, the dorsum will lie 2 mm behind this line with slight concavity. To assess the nasal tip projection with the patient in a lateral view, a vertical line is drawn at the alar–cheek junction. A second vertical line is drawn at the most projected part of the upper lip. If 50–60% of the tip lies anterior to this second vertical line, then the nasal tip is well projected. Tip rotation should be less in males than in females with the nasolabial angle in men between 90° and 95° com-