

Peter M. Prendergast
Melvin A. Shiffman *Editors*

Aesthetic Medicine

Art and Techniques

 Springer

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ISBN 978-3-642-20112-7 e-ISBN 978-3-642-20113-4
DOI 10.1007/978-3-642-20113-4
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2011928412

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*This book is dedicated to my beautiful children, Ciara and Niall,
and to my wife and dearest love, Pyn.*

Peter M. Prendergast, M.B., B.Ch., MRCSI.

Foreword

In 1973 in Paris the words medicine and aesthetic appeared alongside each other. The combination of these two words gave rise to a new concept of correcting various aspects of the human body. Cosmetic surgery for years has created transformations, and aesthetic medicine can achieve similar results using a lighter technique. From 1973 until the early 1980s, aesthetic medicine spread from France to the Mediterranean, and then on to America, maintaining and using all the medicine and physiotherapy that make aesthetic improvements to the body.

The reason for this wide and rapid spread was the desire for changes in people's ways of life in a more modern society. In fact, the most important aspect had become 'time.' People had less time and more things to think about in this increasingly competitive way of living. Therefore, the time needed for two people to meet was insufficient to really get to know each other, which meant that people began to find ways of improving themselves: how they dress, their way of speaking, their body language, and last but not least their appearance. The old saying "Clothes don't make the man" could be seen as incorrect and actually the exact opposite is true: first impressions count.

To dwell on how much this transformation is or is not true would just stray from the point. The reality is that people request the expertise of surgeons and doctors to better their aesthetic appearance to conform with what is seen as the ideal in society today. Corrective treatments should not be seen as negative. In fact, improving the aesthetic appearance allows individuals to like themselves more and feel more balanced psychologically. This not only improves the psyche, but also the metabolism.

Today a new science called *psycho-neuro-endocrino-immunology* studies the positive and negative effects our psyche, equilibrium, anxiousness, stress, and depression can have on our endocrine system, interfering with the metabolism and immune system, which defends us against infection and cancer. Helping someone to see him/herself in a better light not only improves 'beauty,' but also health, having a positive effect on the nervous, immune, and endocrine systems.

Therefore today, aesthetic medicine should be seen as an important branch of medicine improving the quality of people's lives.

It is important to have correct scientific information for those doctors who wish to enter into the field of aesthetic medicine. All scientific information originates from study and should communicate the reasoning behind and technical operation of aesthetic medicine. Peter Prendergast and Melvin A. Shiffman are doctors with great skills and experience in aesthetic medicine and cosmetic surgery who have put together a text that includes all the theoretical and practical information needed to operate in this area. A staff of international specialists, expert in particular areas, have

been selected to compile chapters in a way that gives students the best knowledge and know-how regarding aesthetic treatment.

The book starts by looking at aesthetic medicine and its ethics, and continues on to other clinical aspects relating to this branch of medicine, going into useful techniques for improving the patients' body. Also new to this area are techniques like mesotherapy, always respecting science and medical and surgical guidelines.

The title of this book, "Aesthetic Medicine: Art and Techniques," means that we can ultimately understand that this area appears simple, but in fact is not only a science but also an art. Furthermore, the maintenance and improvement of aesthetic harmony in our patients not only require scientific knowledge and technical skills, but also, and arguably more importantly, artistic inspiration and taste.

This book represents up-to-date advances in the aesthetic medicine sector, and can be used as a base and reference for all who wish to advance in the field of aesthetic medicine.

Rome, Italy

Maurizio Ceccareli,
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Preface

Aesthetic medicine is a rapidly growing specialty that is largely procedure-oriented. Non-surgical and minimally invasive techniques for enhancing the face and body are now possible without the need even for sedation. These include facial rejuvenation with lasers, lights, and tissue tightening technologies, augmentation with fillers and autologous fat, chemodenervation, and thread lift techniques. Breast augmentation with fat or fillers is performed under local anesthesia, as is body contouring using the tumescent technique. Although procedures in aesthetic medicine certainly do not replace those in cosmetic surgery, patients frequently request rejuvenation that is minimally invasive and requires little or no downtime. This demand has steadily increased over the last decade and has been the driving force in the evolution of aesthetic medicine into a discipline practiced by surgeons and physicians alike. Indeed, many of the techniques described in this book, such as facial volumizing and skin resurfacing, are ideal adjuncts to a plan of surgical facial rejuvenation.

The pace of growth in aesthetic medicine, coupled with the explosion in the number of new devices and treatment modalities for rejuvenation, precludes any exhaustive text on the subject. However, we have endeavored to include topics of interest for the beginning and advanced practitioner in aesthetic medicine, including advanced applications of the most common procedures such as botulinum toxins and fillers. Separate chapters detail the latest techniques in suture face lifts, stem cell-enriched fat transfer, mesotherapy, carboxytherapy, thermolysis, Vaser lipoplasty, and treatments for cellulite, varicose veins, and telangiectasias.

This book is intended as a manual. The emphasis is on protocols, parameters, instruments, materials, and descriptions of techniques. Our aim is not only to facilitate an understanding of the principles of aesthetic medicine, but also to allow the reader to incorporate the various techniques described into their practice. The book will also serve as a valuable resource for physicians and surgeons of any specialty undergoing formal instructional courses or workshops in aesthetic medicine. The contributors, all international authorities in their fields, share their advice, tips, and experience using clear explanations, illustrations, and step-by-step photographs. We hope that, by describing and showing the techniques in detail, the reader will both appreciate the artistic element of aesthetic medicine and gain a practical knowledge for immediate application.

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Part I

Aesthetic Medicine

Peter M. Prendergast

1.1 Introduction

Aesthetic medicine is an art and a science. It is an emerging branch of medicine that relies on procedures and techniques to improve and enhance the appearance, texture, and contours of the skin, face, and body. Although some degree of overlap exists between aesthetic medicine and aesthetic surgery, for the most part, aesthetic medicine employs techniques and technologies that are either noninvasive or minimally invasive and performed without general anesthesia. Invasive surgical procedures that require significant tissue undermining, dissection, or skin excision, such as rhytidectomy, brachioplasty, and abdominoplasty remain the exclusive domain of aesthetic surgery, and are mostly performed in the hospital setting under general anesthesia. Typically, “invasive” procedures in aesthetic medicine require only dermal or subcutaneous injections, punctures, or small incisions. These include botulinum toxins, temporary fillers, fat transfer, suture lifts, and various forms of lipoplasty. These topics are covered in detail in this book.

The rapid growth in aesthetic medicine internationally is partly due to an increased patient demand for rejuvenating procedures that do not involve surgery. Patients request procedures not because they are unwell but because they want to look and feel better. This patient profile is unique to aesthetic medicine and surgery, in contrast to most other medical specialties where the focus is on the diagnosis and treatment of

pathologies and illnesses. With the advent of botulinum toxins, hyaluronic acid fillers, and other nonsurgical procedures, patients can look and feel better quickly and discretely, with virtually no downtime. There is a natural enthusiasm for therapies that are quick, relatively painless, offer natural-looking but measurable results and cause little interruption to normal activities. Although aesthetic medicine has been embraced for this reason, it does not serve to replace aesthetic surgery. The relationship between the two disciplines is synergistic. Occasionally, less invasive techniques can be used in place of surgery for similar indications in patients who request them or where it is considered more appropriate (Table 1.1).

1.2 Origins of Aesthetic Medicine

Aesthetic medicine as it is practiced today has evolved from the pioneering efforts, inventions, and discoveries of individuals from a variety of medical and surgical specialties. Jean Carruthers, an ophthalmologist, discovered the remarkable aesthetic application of botulinum toxin [1]. Chemodenervation with botulinum toxins is the most commonly performed procedure in aesthetic medicine [2]. Jeffrey Klein, a dermatologist, developed tumescent anesthesia, making lipoplasty a safe and effective possibility in the office-based setting without sedation or general anesthesia [3]. Fischer, Ilouz, and Fournier, with backgrounds in gynecology, plastic and general surgery, pioneered liposuction techniques in the 1980s [4]. Although fillers have been used for decades, the development and approval of safe, cross-linked hyaluronic acid fillers has revolutionized the practice of soft tissue augmentation for the

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Table 1.1 A comparison of options in aesthetic surgery and aesthetic medicine

Indication	Aesthetic surgery	Aesthetic medicine
Face lift	Rhytidectomy, MACS lift	Suture lift
Neck lift	Neck lift, platysmaplasty	Suture lift, tissue tightening, chemodeneration of platysma bands
Brow lift	Foreheadplasty, endoscopic brow lift	Botulinum toxin, suture brow lift
Lip enhancement	Surgical, mucosal advancement	Hyaluronic acid fillers
Gummy smile	Surgical lip lengthening	Botulinum toxin
Cheek or chin enhancement	Surgical implants	Augmentation with injectable fillers
Nose reshaping	Rhinoplasty	Injectable fillers
Skin laxity	Resection, e.g., abdominoplasty	Tissue tightening, e.g., radiofrequency
Breast augmentation	Silicone/saline implants	Injectable hyaluronic acid or fat

MACS minimal access cranial suspension

treatment of wrinkles, as well as contouring the face and body. Laser medicine and dermatology developed following the original description of selective photothermolysis by Anderson and Parrish in 1983 [5]. Carbon dioxide laser skin resurfacing became popular in the early 1990s but has largely been replaced by safer, nonablative, or fractional resurfacing devices. Dermatologists, such as Goldberg, have made significant contributions to the dissemination of knowledge on the aesthetic applications of lasers and lights. Shiffman, a general, cosmetic, and oncologic surgeon, has further defined aesthetic medicine by writing and editing numerous books on topics such as liposuction, facial rejuvenation, and body contouring. Aesthetic medicine is therefore characterized by an eclectic collection of techniques, developed or derived from several disciplines, including dermatology, plastic and reconstructive surgery, laser medicine, and various other surgical subspecialties.

1.3 Procedures

Procedures in aesthetic medicine address most aging signs including abnormal skin pigmentation, skin laxity, ptosis, rhytids, fat loss, and contour irregularities such as the tear trough deformity. In addition, contouring of the face and body using fillers or lipoplasty is achieved to improve facial and lip volume, define the cheekbones, or remove unwanted fat. A summary of the most common procedures in aesthetic medicine is provided in Table 1.2.

1.4 Training

Many of the procedures in aesthetic medicine have been performed for decades, including mesotherapy, lipoplasty, and chemodeneration with botulinum toxins. More recently, aesthetic medicine has emerged as a discipline that integrates established techniques with newer ones such as hyaluronic acid fillers, skin tightening, fractional resurfacing, third generation ultrasound-assisted lipoplasty, and advanced skin imaging. Implementing techniques in aesthetic medicine safely requires appropriate theoretical and practical training in anatomy, aging, patient assessment and selection, anesthesia, technique, potential side effects, and complications and their management. In addition, a thorough knowledge of the materials, products, and devices used in aesthetic medicine should be attained. These include botulinum toxins, temporary, long-lasting, and permanent fillers, volume stimulators, lasers, lights, radiofrequency systems, peeling agents, suture devices, and cosmeceuticals. Several accredited training programs in aesthetic medicine are available worldwide that offer instruction and hands-on training for physicians and surgeons with varying levels of experience [6].

1.5 Future Directions

The most defining landmark in the evolution of modern aesthetic medicine was the aesthetic application of botulinum toxin type A. Its use for the treatment of hyperdynamic lines remains the most widely performed cosmetic procedure [2]. Aesthetic applications have

Table 1.2 Procedures in aesthetic medicine

Indication	Treatment modality	Example products/devices
Hyperdynamic rhytids	Chemodenervation	Botox, Dysport, Xeomin
Lower face rhytids	STA with fillers	Restylane, Teosyal global action, Juvederm
Facial contouring	STA with fillers, fat	SubQ, Teosyal ultimate, Radiesse
Photoaging	Skin resurfacing	Fractional CO ₂ lasers, chemical peels
Acne scarring	Micro-needling	Genuine dermaroller
Textural irregularities	Microdermabrasion	SilkPeel
Dyschromias	Selective photothermolysis	Intense pulsed light
Telangiectasias, varicose veins	Sclerotherapy	Fibro-vein, sclerofoam
Ptosis jowls, brow, cheeks, neck	Suture lifting techniques	Silhouette sutures, Anchorage sutures
Skin laxity	Radiofrequency, infrared	KonturMD, titan
Breast augmentation	STA with fillers	Macrolane VRF 20/30
Lipoplasty	Ultrasound-assisted lipoplasty	VASER
Striae	Carboxytherapy	Carboxypen, RioBlush

STA soft tissue augmentation

been expanded to include use in the lower face and neck, as well as hands, axillae, and feet for hyperhidrosis. The future of botulinum toxins will include the addition of new brands, and further refinement in techniques to enhance results. Similarly, novel filler agents will be brought to market with the hope of competing with the main hyaluronic acid brands. The concept of volume restoration with fillers and stimulating agents for facial rejuvenation will continue to play a central role in aesthetic medicine and compliment procedures in aesthetic surgery. Cell-assisted lipotransfer (CAL) and stem cell-enriched fat transfer are novel approaches to autologous fat transfer that promise to improve graft cell survival after grafting to the face or breasts [7, 8]. The role of sutures for facial rejuvenation continues to interest the world of aesthetic medicine. The goal is to improve further upon current suture designs and techniques to enhance results and increase the longevity of visible benefits. It is certain that lasers, ultrasound, and radiofrequency technologies will play a prominent role in the future of aesthetic medicine. Emerging technologies include fractional lasers, focused ultrasound devices, and multipolar radiofrequency technology for fat reduction and skin tightening [9].

For the same reasons that aesthetic medicine has become widely practiced, antiaging medicine has become one of the fastest growing medical fields today. Put simply, more and more people want to feel good and look good. It behooves the aesthetic physician and surgeon to pay attention to the world of antiaging, preventive, and regenerative medicine as it relates to his own

practice and the patients they treat. Optimizing skin health with nutritional supplements, hormone replacement, or phytotherapy exemplify the synergy between aesthetics and antiaging.

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Urban Wiesing

2.1 Introduction

When physicians concern themselves with the aesthetic aspects of their patients, public opinion varies on the topic. On the one hand, certain measures are required in order to improve the aesthetic appearance of a person. They are a normal part of the medical profession. For example, to reconstruct the deformed face of a car-accident victim or to give a patient with a serious skin disease the most “normal” appearance possible undoubtedly belongs to the art of medicine. On the other hand, there are several medical procedures that are concerned with the aesthetics of their patients being criticized. For example, one could mention television programs in which physicians help participants to look more like celebrities (“I want a famous face,” MTV). Furthermore, there are cases in which physicians performed aesthetic operations obviously too frequently and with harm to the patient or did not do so in accordance with safety standards [1]. Here the question arose whether physicians’ participation is ethically acceptable. The doubts were supported by the fact that medicine is expanding with the growing number of aesthetic measures to a field that frequently does not have anything to do with the treatment of illness anymore and goes beyond the traditional core of medicine.

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At this point, it should be addressed whether and – if so – under what conditions physicians should perform aesthetic interventions on their patients.

This question cannot be answered without reference to the medical profession and its characteristics. Furthermore, one must systematize the various medical efforts for the aesthetics of the patient. Only then, it can be clarified to what extent certain measures are in accordance with the ethos of the medical profession and what responsibility physicians have. Aesthetic operations on children and adolescents as a special case should be examined as well.

At this point, the question concerning the participation of the medical profession in certain measures should be discussed. It should not be asked whether a person should have an aesthetic operation or not, but whether physicians should perform it.

2.2 Preliminary Remarks

1. The only measures to be addressed here are those that exclusively serve aesthetic purposes. If measures are carried out for medically functional reasons, then there are usually enough reasons to consider them medically necessary and ethically acceptable (the patient’s consent as a requirement). Furthermore, if medically functional measures happen to be aesthetically beneficial as well, like frequently in dentistry, then this additional characteristic does not provide a reason to doubt its ethical acceptability.
2. Actions for the sake of one’s own aesthetic improvement belong to the basic behavior of human beings. To consciously form the body beyond pure

naturalness under aesthetic aspects distinguishes human beings from the animal world. They do this in many ways, be it clothes, cosmetics, care, or sport. It would therefore not be the activity itself, but the measures – the medical, especially surgical intervention – which give rise to a special investigation.

2.3 Moral Construction of the Medical Profession

Why should one ask the question whether physicians are allowed to take part in this genuinely human action with all their knowledge and capability? There are people who wish for better looks and physicians who can make this wish come true. What should be problematic about it – it could be asked. In other professions, expansion does not usually raise critical questions. So, why in the medical profession?

The medical profession is a unique profession, and whoever doubts it, can take a look in the “Declaration of Geneva of the World Medical Association”. There, the medical profession is committed to one particular goal, namely to the health of the patients: “The health of my patient will be my first consideration” [2]. This goal shapes physicians’ behavior, and for this reason, the medical profession is a profession and not a business. What does this mean? What makes the medical profession so unique?

Professions have established themselves in all developed industrial nations and possess the following traits [3]: They primarily aim for a worthwhile goal and not – like a business – primarily for the realization of profit. (That, of course, does not exclude that the members of certain professions earn their livelihood through their job.) However, professions are primarily committed to a socially deemed and important task. The task of medicine is clear: It is supposed to maintain and re-establish health, ease suffering and help sick people. The professions are geared toward the interests of their clients or – in medicine – their patients. For this, a high ethos is expected from the members, an ethos that puts the patient in the center of the considerations and actions. Or, as the World Medical Association International Code of Medical Ethics describes it: “A physician shall be dedicated to providing competent medical service in full professional and moral independence, with compassion and respect for human dignity” [2]. In professions, the services frequently have to be locally based and be personally delivered. They cannot be delegated,

with the exception of assistant physicians. Advertising is only allowed within limits – at least in numerous countries – as to not induce demand.

Why is this orientation so important for physicians, why is a high ethos from the members of the medical profession demanded, why do they have to work in a patient-oriented fashion? If one puts oneself in the situation of a patient, then an answer can be found: people experience various difficulties in the course of their lives such as health problems, and it proved to be beneficial as an answer to these contingencies for sick people that the members of certain professions (in this case the medical profession) dedicate themselves to the patients’ problems, are competent and act patient-oriented. Sick people must expect that the members of the medical profession know exactly what they are doing, have a command of their duties and simultaneously use these abilities to the benefit of the patient. Patients must trust that physicians possess a certain ethos, a work-related, humane disposition. Physicians cannot guarantee the success of a medical measure, but they can guarantee that they possess abilities and take a certain moral stance.

Since the patients cannot verify the stance of each and every member of the profession in advance, they have to rely on the fact that just because someone is a member of the profession, certain capabilities and moral stances can be expected. It is in the sense of professionalism, of a binding professional ethos, because it makes the so-called system of anticipatory trust possible [4]. A working party on “Doctors and Society Medical professionalism in a changing world” of the Royal College of Physicians defined in 2005 medical professionalism “as a set of values, behaviours, and relationships that underpin the trust the public has in doctors” [5]. The patient can expect certain behavior simply because of the membership in the medical profession. The system of medicine entitles one to the expectation. This confidence is certainly not to be understood as a nostalgically glorifying adjunct to a service relationship, but is essential in the doctor–patient relationship. With that, the profession agrees to a contract with society. “Professionalism is the basis of medicine’s contract with society. It demands placing the interests of patients above those of the physician, setting and maintaining standard of competence and integrity” [6].

This should also be considered if one wants to answer the question to what extent physicians should

be devoted to the aesthetics of their patients. Then, one should study the measures taken to change the aesthetics of a person to determine whether they threaten the constitutive element of medicine, namely the “system of anticipatory trust.”

2.4 Classification of Aesthetic Interventions

First, the undisputed cases are discussed that were already mentioned above: there is no doubt that several aesthetic interventions are compatible with the medical ethos. As a profession, physicians are committed to health. When they treat the ill, thereby correcting the aesthetic drawbacks of a disease, there is no contradiction with the medical ethos.

However, with that the whole area of aesthetic interventions is not covered for the following two reasons:

1. The concept of disease is fuzzy around the edges; it also has changed historically. For many symptoms, it can be difficult to say whether they should be regarded as a disease or not. The best-known examples are the symptoms of aging: Are they diseases or the physiological course of events?
2. Certain aesthetic interventions to correct conditions are beyond what – despite all the uncertainty – is widely seen as a disease. How should physicians face up to that?

In order to assess these aesthetic interventions ethically, a subdivision is proposed here that is oriented to the attention of events. Medical interventions for the purpose of altering the aesthetic appearance can

1. diminish undesired, excluding or negatively perceived attention from other people,
2. increase positively perceived attention from other people.

We must realistically concede that this distinction is not clear-cut for all cases. There could be cases in which both aspects are touched upon. However, this distinction proves to be helpful for the issue discussed here.

2.5 Medical Ethos and Aesthetic Activities

The first group: This includes, for example, medical treatment of disfigurements or of characteristics that act stigmatizing and often but not always have a disease reference, which often but not always differs widely

from the average. The treatments are reconstructive in many cases, inasmuch as they want to restore a “normal” state as much as possible. With these treatments, people should get the chance to lead a life free of excessive, unwanted negatively perceived attention, a life free of stigmas. Basically, one wants to help them get to that “normal” level of attention as much as possible and avoid stigmatization and exclusion. These measures can be justified by considerations of justice: It’s about giving people chances for a good life, or, as the “Central Ethics Commission at the German Medical Association” recently formulated it, as a maxim for allocating resources in health care, making it possible for humans to “participate in social life” [7]. There is no doubt that measures to prevent stigmatization – within the scope of good medical treatment – are compatible with the medical ethos and do not compromise the medical profession in any way, provided that they are carried out *lege artis*. This is also true when it is a matter of aesthetic, not functional corrections.

The other group of aesthetic measures, including operations, however, intends to increase desired, positively perceived attention from others through physical changes. In addition, the changed appearance is supposed to contribute to the attractiveness in comparison with others. Frequently, these operations are supposed to correct the symptoms of old age or effects of excess weight. There is usually no sign of disease and no “medical” indication. The patient’s desire and money decide on the measure.

What happens in the relationship between physician and patient in this case? There is no medical indication and therefore the physician is not responsible for an indication. The physician is only responsible for proposing a method by which the patient’s goal should be achieved and for proper performance. Therefore, the physician’s responsibility has changed dramatically. Since it has nothing to do with the health of a patient, the physician is not obligated to perform such measures. But are physicians not allowed to perform for this reason? And if they do it, if physicians offer purely cosmetic measures, even operations, will the medical profession be compromised?

Simply because of the lacking reference to illness, trust in the medical profession is not necessarily compromised when it comes to purely aesthetic measures. For example, physicians are already working in areas beyond illness, whether it be abortion, contraception, improvement of performance through training in

sports, etc. However, what needs to be guaranteed to ensure that the “system of anticipatory trust” is not compromised?

1. Measures that the patient wants but cannot really help the patient in any way should not be performed. For example, if the patient’s desire for a change in appearance is caused by a serious mental disorder, a medically obtained change in appearance will probably not relieve the suffering of the patient. Here, it is the physician’s duty to recognize this and suggest other helpful measures such as further discussions or psychotherapy. The International Code of Medical Ethics of the WMA states: “A physician shall act in the patient’s best interest when providing medical care” [2].
2. The consultation must also be geared toward the goal of assisting the patient and searching for an appropriate approach for him or her. The consultation shall not serve the purpose of “selling” a particular measure. “Placing the interests of patients above those of the physician” [6] is one of the fundamental principles of professionalism.
3. The patients also have to be thoroughly informed that there is no medical indication to be found. They have to be informed in detail about the measure and must give their free informed consent.
4. The high standards of avoiding harm must be maintained. Medical measures generally bear risks, but the avoidable ones should be avoided, especially those that come with voluntary operations. Otherwise, it would go against the basic principle of “setting and maintaining a standard of competence of professionalism” [6].
5. Advertising should be limited to factual information as not to induce demand.

These conditions must be met in order to exclude that a measure, which is most likely not helpful, is implemented, that the patient is forced to do it, is not sufficiently informed and that preventable damage occurs. All this would jeopardize the “system of anticipatory trust” in the medical profession. But, if this is largely excluded, then the answer to the central question of how aesthetic actions jeopardize the medical profession is: This is not the case, provided that the orientation towards the patient and the high quality of consultation and implementation are guaranteed.

Cosmetic medicine and particularly cosmetic surgery expand what medicine has to offer, but they do not demonstrate any unknown, new dimension of

medical practice. It would certainly give cause for concern if physicians displayed in their traditional area (the treatment of diseases) even some of the attitude from aesthetic medicine, namely that only the will and financial power of the customer can make something happen. However, provided that this is not the case for the main medical duty – the prevention, treatment or alleviation of disease – the medical profession would with certain cases of cosmetic interventions, in particular of purely cosmetic surgery, only expand their services. If the medical profession makes this expansion recognizable, and a high standard of quality in aesthetic medicine and patient orientation is guaranteed, there is no reason for a threat to the “system of anticipatory trust” and the medical profession to be seen.

2.6 Aesthetic Measures for Children and Adolescents?

The suggested distinction between “reducing undesired attention” and “increasing desired attention” is also supportive for assessing the situation of children and adolescents. Of course, a clear-cut line cannot always be found even in these cases. Nevertheless, one can divide the interventions according to the previously noted distinction concerning attention to events into two groups: How should aesthetic medical interventions, even operations on children and adolescents be assessed, that are supposed to reduce undesired, exclusionary, negatively perceived attention from other people and those intended to increase positively perceived attention?

In the first group, for example, could be operations on injuries that caused disfigurement or characteristics that can have a stigmatizing effect. A good example would be bat ears. Their correction carried out on children and adolescents can be justified insofar as one would like to provide the child or adolescent with the chance of an unencumbered childhood or adolescence without frequent, undesired, negatively perceived attention, without a stigma. Exclusion and teasing should be prevented. At this particular period in life, social contacts and confidence are extremely important because they facilitate opportunities for a further good life. Orientations on a concept of illness in the process are not helpful and are not even mentioned, for example, at the surgery on bat ears.

The assessment looks completely different for operations or measures that only serve the purpose of drawing desired, positively perceived attention from others onto oneself through physical change. With such operations or measures, children or adolescents enter a contest for additional attention. The contest is present anyway and is largely unavoidable, especially in youth. However, this raises the question as to whether this contest should be exacerbated by the possibilities of medicine. There are convincing reasons to speak against it, especially when it comes to aesthetic operations.

First, the medical risks should be mentioned: In addition to the usual medical risks, the results of operations during childhood or adolescence are more difficult to be predicted because of their growth. The possibility of an unwanted result is increased in case of some surgical procedures. Furthermore, cosmetic operations and other medical measures confirm and strengthen the competition for desired, positively perceived attention through physical appearance just by being yet another available tool. The pursuit of altering the aesthetic appearance (that does not stop at surgery) is problematic in two senses: It suggests that we must be beautiful on the one hand and must be willing to have cosmetic surgery for beauty on the other. This could induce increased suffering, while simultaneously offering services for the reduction of suffering. It would be more desirable to not dictate new standards and suggest new measures for rule compliance, but to provide an unencumbered childhood and adolescence without additional aesthetic pressures. These arguments speak for a restriction of aesthetic measures and operations on children and adolescents that only serve the purpose of increasing the desired attention. Nevertheless, there are convincing arguments for the avoidance of stigmatization of children and adolescents through medical interventions.

2.7 Conclusions

Medical interventions that are only supposed to increase the desired, positively perceived attention from others are not necessary according to medical ethos. However, they do not go against them, provided that high quality requirements are guaranteed. The measures have to be deemed beneficial to the patient in advance, a patient must be informed and the avoidance of harm must be guaranteed. Aesthetic measures, especially operations, which only serve the purpose of increasing desired, positively perceived attention, should not be performed on children and adolescents. Nevertheless, there are convincing arguments for an avoidance of stigmatization of children and adolescents, even through medically aesthetic measures.

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Part II

Preoperative

Melvin A. Shiffman

3.1 Introduction

With any patient who is first seen by the physician, a proper history should be obtained. Not only the patient complaints but a proper complete medical history should be taken. In aesthetic medicine, as with many medical specialties, there is a tendency to shortcut the history with the idea that it is not important to learn everything about the patient. In medical malpractice litigation, the medical record is the best defense.

3.2 Content of the History

3.2.1 Format of a Proper Medical History

Some of the worst and consistent problems this author has encountered in examining records for medical legal problems are the lack of enough information to make a diagnosis and decide on treatment and the extraordinary lack of readable handwriting. If the record cannot be read by another person, it is useless. The physician with poor hand writing must understand that the record must then be printed or typed out, whatever the cost.

The record should contain the present complaints, list of allergies, past medical history, prior surgical

procedures, family history, and review of systems. This is taught in medical school and should be followed consistently. Many of these aspects of the history can be filled out by the patient if there is a standard form.

3.2.2 Present Complaints

The first aspect of a proper history is to find out what the patient is complaining about. Have the patient explain what he/she is concerned about, why he/she is bothered by the perceived deficit, and what he/she wishes to have done. Cover all the possible aesthetic problems with the patient. Have the patient point out the exact areas of the face or body to be sure what is being complained about.

3.2.3 Allergies

A standard form (Table 3.1) with a request to list allergies may not be enough. Some injectable fillers with a known propensity for allergies should be listed, such as collagen, porcine products, and hyaluronic acid. Charriere et al. [1] reported a positive skin test in 3.8% of patients and adverse reactions in 2.3% of patients with negative skin testing. Allergic reaction to hyaluronic acid complications has occurred [2].

Lidocaine is in some injectable fillers and should be specifically listed since allergy can be present. There should be a question as to whether the patient has had any reaction, especially allergic, to any subdermal filler.

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Table 3.1 Allergies

1. Please list any allergies especially to foods and medications

2. Have you ever had a reaction to (please circle):

- Iodine
- Seafood
- Collagen injections
- Porcine (pig) products
- Hyaluronic acid injections
- Any dermal fillers
- Any local anesthetic including lidocaine

Table 3.2 Present medications

Please list all medications you are presently taking:

Are you taking any medications with aspirin?

Are you taking any nonsteroidal anti-inflammatory drugs?

Are you taking any medications for or are you on a diet for diabetes? _____

Do you take any herbal medications? _____

For safety purposes, the list of allergies should be placed on the front of the patient's chart.

3.2.4 Present Medications

A list of all present medications should be obtained (Table 3.2). A standard form requesting the information can be used. Present medications may give an indication of disorders being treated that were not recalled by the patient. Ask if the patient has had steroids within the prior 6 months.

3.2.5 Past Medical History

The past medical history can be a questionnaire filled out by the patient (Table 3.3). Some specific questions should be asked about autoimmune diseases, including dermatomyositis, lupus erythematosus, or rheumatoid arthritis, since collagen should not be injected into such patients.

All prior medical aesthetic procedures should be in the questionnaire including the exact place of each area that was treated and with what method. If fillers have been used, then the exact kind of filler should be determined. If the patient does not know, a release for medical records should be signed and the records retrieved from the treating physician. Most of the time, it is best to send for the records since there may be more to the prior treatment than the patient remembers.

3.2.6 Past Surgical History

The past surgical history can be in the form of a questionnaire (Table 3.4). The past surgical history may not seem important for an aesthetic medicine physician, but any surgical procedure that had been performed in the area you intend to treat may portend problems if not known about. Be especially aware of prior cancer having been treated surgically. The area of treatment may have residual or recurrent cancer or there may be metastatic disease. Sometimes it may be prudent to send for the surgical records from prior surgery.

3.2.7 Family History

The family history can be in a standard questionnaire form (Table 3.5). Ask specific questions of the important body systems that may be related to hereditary problems to be sure nothing is missed.

3.2.8 Review of Systems

Review of systems is usually in a standard questionnaire form including each system (Table 3.6). Be especially aware of heart and/or lung problems, if deep sedation or general anesthesia is contemplated.

Table 3.3 Past medical history

Please list all chronic or serious diseases that you have had treated:

Have you ever had (please circle):

1. Hypertension (high blood pressure), heart or lung disease
2. Diabetes
3. Kidney or urinary tract disease
4. Autoimmune disease such as lupus erythematosus, dermatomyositis, rheumatoid arthritis
5. Thrombosis or pulmonary embolism
6. Cancer
7. Liver disease
8. HIV or AIDS

Have you ever been hospitalized for any disorder? If yes, please explain

Have you had a recent infection (within the past 30 days)?

Table 3.5 Family history

Please circle any of the disorders below that have occurred in any of your family members including children, parents, aunts and uncles, and grandparents:

1. Cancer
2. Heart disease
3. Autoimmune disease such as lupus erythematosus, dermatomyositis, rheumatoid arthritis
4. Glaucoma

Table 3.6 Review of systems

Have you had within the past 6 months any disorders involving (please circle):

1. Eyes, ears, nose, or throat
2. Heart or lungs
3. Kidney or urinary tract
4. Sex organs
5. Joints or bones including the back
6. Muscles
7. Stomach or bowel
8. Skin

Table 3.4 Past surgical history

Please list all the cosmetic or aesthetic procedures that you have ever had including the dates if possible: [Please include injections of dermal or skin fillers and botulinum toxin]

Please list all surgeries that you have had (include the dates if possible):

3.3 Conclusions

A proper history is the essence of the practice of medicine. Even with limited medical aesthetic procedures to be proposed, there is a need to evaluate the patient properly and thoroughly. It is relatively simple for patients to fill out the necessary forms before being seen by the physician.

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Melvin A. Shiffman

4.1 Introduction

The purpose of classifying facial aging is to have a clinical method to determine the severity of the aging process in the face. This allows an estimate as to the types of procedures that the patient would need to have the best results.

Procedures that are presently used for facial rejuvenation include laser, chemical peels, suture lifts, fillers, neck lift, brow lift, blepharoplasty, rhinoplasty, otoplasty, suture facelift, modified facelift, and full facelift. All of these procedures have modifications and variations. The physician is already using his best judgment to determine which procedure would be best for any particular patient. This classification may help to refine these decisions.

4.2 Clinical Classification

The clinical classification utilizes different areas of the face that are affected by the aging process (Table 4.1). The appearance of a tear trough depression is one of the first manifestations of facial aging. This is followed by extension of the tear trough and

loss of cheek fat, prominence of the jowls, and then deepening of the various facial folds. The most prominent fold is the nasolabial fold followed in time by the marionette lines.

The use of neck manifestations such as loose skin, platysmal bands, and transverse folds is variable since a heavy neck would hide these changes (Fig. 4.1) and a thin neck may show the changes earlier. These bands and skin looseness may require neck lift and resection of the platysmal bands. Rhytids (wrinkles) generally are a result of heredity, skin aging from sun damage, overuse of facial expression muscles, sleep pressure, and skin laxity (Fig. 4.2). Rhytids can be treated with chemical peel or laser resurfacing. Laxity of eyelid skin and appearance of eyelid fat pads occur with aging but the skin laxity may be associated with heredity and sun damage. Treatment would consist of blepharoplasty. Ears can be prominent and distressing to the patient and this is corrected with otoplasty. The nose may have features that are noticeable and bothersome to the patient that would require some form of rhinoplasty.

4.3 Use of the Clinical Classification

The clinical classification for rapid evaluation of a patient concerns mainly the midface. The first change of aging from Stage 0 (no changes noted) to Stage 1 is the appearance of a deepening in the tear trough and a very

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Table 4.1 Clinical classification of facial aging [1]

Stage	Tear trough depth	Cheek fat loss	Nasolabial fold depth	Jowl prominence
0	None	No loss	None	None
1	Slight: to cheek fat	No loss	Slight	None
2	Mild: into cheek fat	Slight loss medially	Mild	Slight
3	Moderate	Moderate	Moderate	Moderate
4	Severe	Severe: flattening of cheek prominence	Severe	Severe



Fig. 4.1 Morbid obesity leaves the neck fat, hanging, and a challenge to treat