SPECIAL TOPIC

Aesthetic Plastic Surgery Training at the Jalisco Plastic and Reconstructive Surgery Institute: A 20-Year Review

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Background: Teaching aesthetic surgery within the different training programs worldwide sometimes presents significant challenges. The main difficulty lies in providing resident physicians with sufficient exposure to all of the conditions that they will likely encounter once their training ends. In many places, exposure to a totally comprehensive array of operations is almost nonexistent.

Methods: To analyze the work that residents perform in aesthetic surgery at the Instituto Jalisciense de Cirugía Reconstructiva "José Guerrerosantos" (Jalisco Plastic and Reconstructive Surgery Institute), a hospital affiliated with the University of Guadalajara in Jalisco, Mexico, the surgical records of 30 residents who finished their plastic surgery training between 1990 and 2009 were chosen at random and reviewed retrospectively. Only surgical procedures performed in operating rooms, in which residents acted as the primary surgeon or first assistant, were analyzed.

Results: Each resident performed an average of 309 aesthetic surgical procedures: 167 as surgeon and 142 as first assistant. The surgical procedures were divided into three general categories: body contouring procedures, breast procedures, and facial procedures. The numbers of procedures performed by residents as surgeons or first assistants according to each category were 55 and 37 (body contouring), 34 and 31 (breast), and 78 and 74 (facial).

Conclusions: The experience is gratifying. At the Jalisco Plastic and Reconstructive Surgery Institute, all residents have an opportunity to perform a comparable number of aesthetic procedures of the most varied nature and complexity under the supervision of experienced plastic surgeons. It is therefore possible to teach aesthetic surgery to residents. (*Plast. Reconstr. Surg.* 127: 1346, 2011.)

he teaching of plastic surgery entails some aspects that have long been the subject of controversy. One of these has to do with the most adequate way to teach aesthetic surgery in the resident surgery programs. There are problems convincing surgical centers worldwide to provide their residents with sufficient opportunities to perform aesthetic surgery. This is because, in most centers, it is thought that aesthetic surgery is not so important and that learning reconstructive surgery is paramount. In these centers, learning the "easy" part, that is, aesthetic surgery, is left until the end. This is usually achieved by watching expert surgeons operate and attending courses, conferences, fellowships, or special clinics open for

this purpose.¹ There is another school of thought, however, that believes that these operations should be learned in residency.²⁻⁵ This article describes the teaching model for aesthetic surgery at the Instituto Jalisciense de Cirugía Reconstructiva (Jalisco Plastic and Reconstructive Surgery Institute), a hospital affiliated with the University of Guadalajara, Jalisco, Mexico.

METHODS

The surgical records of 30 residents who finished their plastic surgical training were reviewed retrospectively for a period of 20 years. During this 20-year period, there were 177 residents that finished their training. From this pool of residents,

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data from 30 of them were selected using probabilistic, simple random sampling. The 3-year training period at Jalisco Plastic and Reconstructive Surgery Institute was included in the analysis. Only surgical procedures that were performed in an operating room were included in the analysis and only when the residents acted as surgeon or first assistant. The resident was classified as surgeon in cases where he or she attended and operated on the patient and was in charge of the patient. If it was a bilateral procedure, the surgeon was the one that was in charge of the patient. The first assistant was the doctor that helped another doctor with an operation.

RESULTS

A total of 15,215 surgical procedures were performed by the 30 residents over the 20-year period. This averaged 309 aesthetic and 199 reconstructive procedures per resident, which corresponds to 61 percent and 39 percent, respectively. Of the 309 aesthetic procedures performed, the resident acted as surgeon in 167 cases (54 percent) and as first assistant in 142 cases (46 percent). For reconstructive procedures, participation as surgeon totaled 114 cases (57 percent) and first assistant accounted for 85 cases (43 percent). The remainder consisted of minor surgical procedures, which are not included in the categories of body contouring procedures (i.e., abdominoplasty, liposuction, lipoinjection, brachioplasty, thigh lifting, buttock implants, and calf implants), mammary aesthetic procedures (i.e., breast augmentation, breast lifting, and breast reduction), and facial aesthetic procedures (i.e., rhinoplasty, forehead lifting, face lift, blepharoplasty, eyebrow lifting, otoplasty, dermabrasion, mentoplasty, hair implant, and Bichat fat pad resection) (Tables 1 and 2).

The surgical procedure record included 20 different aesthetic operations, with a broad array of procedures, all of which are listed in Table 3. With the resident as principal surgeon, the six most common were rhinoplasty, abdominoplasty, liposuction, augmentation mammaplasty, bleph-

Table 1. Number of Aesthetic and Reconstructive Procedures Performed during Residency at the Jalisco Plastic and Reconstructive Surgery Institute

	Aesthetic (%)	Reconstructive (%)	Total (%)
Surgeon	167 (54)	114 (57)	281 (55)
First assistant	142 (46)	85 (43)	227 (45)
Total	309 (61)	199 (39)	508

Table 2. Aesthetic Procedures with Residents as Primary Surgeons or First Assistants

Category	Primary Surgeon (No. of Procedures)	First Assistant (No. of Procedures)
Aesthetic facial	78	74
Aesthetic breast	34	31
Body contouring	55	37
Totál	167	142

Table 3. Aesthetic Procedures Performed by Resident Physicians at the Jalisco Plastic and Reconstructive Surgery Institute

	No. of Procedures per Resident		
	Surgeon (%)	First Assistant (%)	
Body contouring			
operations			
Abdominoplasty	32.9(19.7)	21.7(15.2)	
Liposuction	16.1 (9.6)	11.8 (8.3)	
Lipoinjection	4.4(2.6)	2.9 (2.0)	
Brachioplasty	1.5(0.8)	0.3(0.2)	
Thigh lifting	0.3(0.1)	0.2(0.1)	
Buttock implants	0.3(0.1)	0.3(0.2)	
Calf augmentation	0.1(0.05)	0.1(0.07)	
Mammary aesthetic	, ,	, ,	
procedures	196 (111)	15.0 (10.5)	
Breast augmentation Breast reduction	18.6 (11.1)	15.0 (10.5)	
	8.6 (5.1)	10.5 (7.3)	
Breast lift	7.0(4.1)	5.4 (3.8)	
Facial aesthetic			
procedures	49 5 (95 4)	49.9 (90.4)	
Rhinoplasty	42.5 (25.4)	43.3 (30.4)	
Forehead lifting	3.2 (1.9)	3.1 (2.1)	
Face lift	8.2 (4.9)	8.4 (5.9)	
Blepharoplasty	12.2 (7.3)	10.2 (7.1)	
Otoplasty	4,7(2.8)	2,6 (1.8)	
Eyebrow lifting	1.3(0.7)	1(0.7)	
Dermabrasion	1.9(1.1)	0.6(0.4)	
Mentoplasty	1.3(0.7)	1.7(1.1)	
Hair implant	1.2(0.7)	$1.1\ (0.7)$	
Bichat fat pad			
resection	1.1(0.6)	0.7(0.2)	
Total	167.4 (100)	141.74 (100)	

aroplasty, and reduction mammaplasty. Acting as first assistant, the six most common operations performed were rhinoplasty, abdominoplasty, liposuction, augmentation mammaplasty, reduction mammaplasty, and blepharoplasty. In Mexico, almost all reduction mammaplasties are considered to be aesthetic procedures, so these operations were categorized as such.

DISCUSSION

The Jalisco Plastic and Reconstructive Surgery Institute was founded in 1976 and has since maintained an active postgraduate program in plastic surgery. Each year, both domestic and foreign surgeons elect to start the process of obtaining a position at the Jalisco Plastic and Reconstructive Surgery Institute, an institution affiliated with the University of Guadalajara. They do this to begin their specialization in plastic surgery. All the admitted surgeons must have finished their training in general surgery. The residence program in plastic surgery takes 3 additional years. Candidates must have a significant amount of knowledge, especially in general surgery, so that his or her performance will be better. This process also helps provide a greater safety net for patients.^{6,7}

The resident program at the Jalisco Plastic and Reconstructive Surgery Institute admits new residents each year. Approximately 40 percent of them are from Mexico and the remainder are from other countries. The surgical training differs for each of the 3 years of residency. During the first year, the resident attends emergencies and serves as the first or second assistant in operations. They also serve as surgeons in some minor surgery cases. During the second year, they primarily participate in reconstructive operations and small aesthetic operations, but the main activity is acting as first assistant. During the third year, the resident acts as surgeon in almost all operations, whether reconstructive or aesthetic in nature.

The most complex health care centers affiliated with the Health Department of Mexico include the different institutes of health such a those focused on nutrition, pediatrics, neurology, oncology, cardiology, and others. The only institute of plastic surgery in Mexico is the Jalisco Plastic and Reconstructive Surgery Institute.

In 2002, the Jalisco Heath Department changed the name of the Institute in honor of its founder and director. It is therefore known today as the Instituto Jalisciense de Cirugía Reconstructiva "Dr. José Guerrerosantos." The University of Guadalajara and the Institute work together with the Jalisco Health Department. In this way, the care that is provided is guaranteed to be of high quality. The costs that patients pay for aesthetic operations are evaluated through a socioeconomic study conducted by the social service of the Institute. These costs are much lower when compared with those in the private sector. This allows a large number of patients to have surgery each year, complying with the mandate of providing services and accessible care at any socioeconomic level. However, despite aesthetic surgery having been practiced as part of the teaching program for over 30 years, this has not always been so. In its beginnings, the Jalisco Health Department considered aesthetic surgery to be a superfluous luxury.

There are training centers where exposure to aesthetic surgery is practically nonexistent, and young surgeons have serious difficulty, once they have finished, starting a surgical practice with a significant amount of aesthetic operations under their belts. ^{8,9} In some countries, such as the United States or Canada, only chief residents have the privilege of attending and operating in aesthetic surgery clinics. We do not subscribe to this concept, so at the Jalisco Plastic and Reconstructive Surgery Institute, all last-year residents have the opportunity to perform a comparable number of operations (Table 3).

The way that different training programs instruct their residents in aesthetic surgery is complex and is not always done the same way. In the literature, we can see cases where aesthetic surgery services or clinics, once formed, have to resort to strategies aimed at the community to attract patients, such as lowering the cost of operations, and thus covering the education of their respective residents. 10,11 Linder et al., referring to the teaching of aesthetic surgery, states that the need existed to create aesthetic clinics for chief residents so that they could perform these types of operations for 6 months. 12 Freiberg et al. refer to the way in which an aesthetic surgery clinic was created so that residents could operate there under supervision. Over an 8-year period, it was determined that an average of 25 procedures were performed per year and per resident. Residents performed a total of 19 aesthetic operations in the first 4 years, rising to 31 procedures in the last 4 years of the report. 13 Schulman likewise reports a study in which four chief residents in two university programs completed 3-month rotations to perform supervised aesthetic operations, performing between 30 and 40 operations by the end of the rotation as surgeon and between 50 and 60 as first assistant.¹⁴

At the Jalisco Plastic and Reconstructive Surgery Institute, the total number of residents is approximately 30, with an average of 10 to 12 in their last year. This makes it the center that trains the most plastic surgery residents in Mexico. The number of cumulative operations performed by each resident by the end of training can vary because there are not always the same number of residents in the third year when most aesthetic procedures are performed. According to regulations, the operations performed by final-year residents are always supervised by an experienced plastic surgeon because the spectrum of aesthetic procedures is quite broad. The operations are performed in the six available operating rooms, which function in a double shift, morning and afternoon, from Monday through Saturday. Operations considered as minor are performed in the outpatient minor surgery area. In addition, for at least 6 months per year, a group of resident physicians and plastic surgeons from the Institute provide surgical care to neighboring populations in the state of Jalisco; in these trips, called *El Cirujano te Visita* [the surgeon visits you], some aesthetic operations are also performed.

With these policies, the number of aesthetic operations performed by residents at the Jalisco Plastic and Reconstructive Surgery Institute, or wherever they intervene as first assistant, is greater than what is published by other universities (Fig. 1). 15-18 This has to do, in part, with the fact that specialized studies in plastic and reconstructive surgery in Mexico last 3 years instead of the 2-year period commonly associated with centers in North America. It is important to note that most aesthetic operations are performed in this final and third year. Over time, and because of current study programs, the relationship between general surgery and plastic surgery may change, with study time decreasing in the former and increasing in the latter to as long as 4 or 5 years. 19-21 That is, it might well be planned to provide residents in their last 2 years with greater exposure to aesthetic surgery.

The skill of the plastic surgeon and positive patient outcomes depend on, among other factors, the number of operations that he or she performed during his or her education, and there seems to be clear evidence that the more one operates in a hospital specialty, the better the professional performance will be.²² It is desirable during residency to have not only external rotations

but also the opportunity to know and watch respected plastic surgeons from elsewhere operate, to positively reinforce knowledge. Therefore, each plastic surgery service should do everything possible to train their residents in this field.

It is mistaken to suggest that aesthetic surgery is concerned with only the vanity of our patients. This, in part, has resulted in aesthetic surgery not having all the necessary support. The advantages obtained after a patient has been successfully attended and operated on can be appreciated in several spheres of their lives, not only in physical appearance, but especially in their actions in society from the psychological point of view (selfesteem). As physicians first and then as plastic surgeons second, we should do everything possible to make our patients feel and appear better.^{23–25} Learning in this way allows us to consider aesthetic surgery as something natural and important in the postgraduate phase. Therefore, it is not common to see recent graduates look elsewhere for a fellowship in aesthetic surgery after residency at the Jalisco Plastic and Reconstructive Surgery Institute ends. This does occur in other centers, where resident graduates seek to complete at least a fellowship in aesthetic surgery.

Aesthetic surgery is best learned by the resident as he or she operates. Using support materials such as books, journals, and videos, and observing world-class plastic surgeons operate and attending conferences or courses in the specialty, are all very important in their education. However, they will never replace a plastic surgeon's need to feel and see tissues in their hands and to work with them

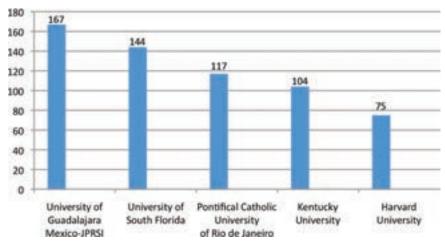


Fig. 1. Number of aesthetic procedures performed by residents as primary surgeon at the Jalisco Plastic and Reconstructive Surgery Institute (*IJCR*) compared with other universities.

based on the three-dimensional mental plan that all their surgical education has provided them.

For many departments, hospitals, and universities, the possibility of legal problems deriving from resident physicians attending patients is a reality. For this reason, they attempt to mitigate the risk by not letting residents operate. This, however, needs to change. 26-30 For these fears to practically disappear, the resident must be taught to operate. Morrison et al. list the requirements that the Residency Review Committee of the Accreditation Council for Graduate Medical Education establishes as the minimum number of operations that residents should perform during their education. They include 10 augmentation mammoplasties, seven rhytidoplasties, eight blepharoplasties, six rhinoplasties, five abdominoplasties, 10 liposuctions, and nine other types of aesthetic procedures. At the Jalisco Plastic and Reconstructive Surgery Institute, these requirements are fully met (Table 4). 31

Osguthorpe and Lomas reported that in 502 aesthetic facial procedures performed by residents and the surgeons who supervised them, there were no significant differences in complications or unsatisfactory results, except that the residents needed more time to perform the procedures.³² Patients who come to the Jalisco Plastic and Reconstructive Surgery Institute know that resident physicians with a solid surgical base will perform most of the operations. They are general surgeons at a teaching hospital, and this is almost never a cause for concern.33-37 Every day, an increasing number of physicians without proper training and experience invade the area of aesthetic surgery, resulting in regrettable outcomes. This affects all of us, so we should try to keep it from occurring, but how can it be done? The answer, obviously, is

Table 4. University of Guadalajara, Jalisco Plastic and Reconstructive Surgery Institute, and ACGME Requirements 2007

Operation	ACGME Requirements 2007	University of Guadalajara (IJCR)
Rhinoplasty	6	42.5
Face lift	7	11.4
Breast augmentation	10	18.6
Liposuction	10	16.1
Abdominoplasty	5	32
Breast ptosis-gynecomastia	NA	7
Blepharoplasty-brow lift	8	13.2
Other cosmetic		
procedures	9	25

IJCR, Jalisco Plastic and Reconstructive Surgery Institute; ACGME, Accreditation Council for Graduate Medical Education.

by starting with good training and always keeping it at the forefront of this type of surgical treatment.^{38–44} It is very important for residents to express their opinions to improve their respective surgical education programs.^{45–47} This experience is hands-on, that is, performing operations of varying degrees of complexity, always supported by a plastic surgeon with many years of experience.

During the study period, legal problems against residents or against the University or the Jalisco Plastic and Reconstructive Surgery Institute were minimal. The operations performed as primary surgeon were not limited only to resection of "small tumors" but were multiple and varied, similar to those that any plastic surgeon performs during his or her professional life.

CONCLUSIONS

Teaching plastic surgery by allowing the resident to perform aesthetic operations, in the same manner as reconstructive surgery, gives residents the actual opportunity to perform a considerable number of aesthetic operations that are often requested during the professional practice of a plastic surgeon. It is possible that few centers in the world can offer their residents all the facilities, both physical and human, for performing aesthetic surgery; therefore, it will always be important to properly decide where to conduct surgical training.⁸

Aesthetic surgery definitely can and should be taught to all residents in training within the different specialization programs in plastic surgery.⁵ Medical residency has a fundamental value in the professional development of all plastic surgeons.

The things we have to learn before we can do them, we learn by doing them.

—Aristotle (384 to 322 BC)

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