

# A Comparison of Face Lift Techniques in Eight Consecutive Sets of Identical Twins

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**Background:** Selecting the “correct” face lift technique has always been a difficult decision for the plastic surgeon. A technique that provides optimal aesthetics for one patient may not provide the same result for another. The complexity of comparing these different results on patients with different facial features further confounds one’s ability to decide on a given technique. Even identical twins are often treated more appropriately with a different technique from one twin to the other because the character and severity of facial aging may differ between them. By comparing different superficial musculoaponeurotic system techniques on “less different” people (identical twins), perhaps the ideal technique may be determined.

**Methods:** Between November of 1997 and April of 1999, eight sets of twins underwent face lift surgery by the senior author (D.E.A.), using one of four techniques. The charts and photographs of the eight consecutive pairs of twins (16 patients) were reviewed retrospectively.

**Results:** No one face lift technique performed in this study produced a superior result as compared with another when performed on the appropriate patient.

**Conclusion:** There exists no face lift technique suitable for every patient. As the current literature suggests, there is no one “best” face lift technique of those studied. (*Plast. Reconstr. Surg.* 120: 1667, 2007.)

The question “Which face lift technique is best?” is nearly as old as the operation itself. This question becomes more difficult to answer than ever before, given the vast array of techniques for facialplasty, and the variable effect of gravity and other environmental effects on the skin and the deeper structures of the face. A more effective comparison of these techniques may be obtained by decreasing the number of variables between the patients. By using identical twins as the subjects and one surgeon to perform his choice of one of four techniques most commonly used in his practice, a more controlled comparison is offered. Although many other excellent techniques for facialplasty are currently in wide use today, this study compares the four techniques most commonly used by the senior author (D.E.A.) during the time period in which the procedures were performed.

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## PATIENTS AND METHODS

Between November of 1997 and April of 1999, eight consecutive pairs of identical twins (16 patients) underwent facialplasty in an office surgery setting. Preoperative genetic analysis<sup>1</sup> was performed to ensure that the twins were monozygotic (identical) rather than dizygotic (fraternal) twins. Seven sets of twins were female and one set was male. The twins were operated on the same day and in the order of their birth sequence. The patients ranged in age from 48 to 77 years, with a mean age of 60 years.

The choice of facialplasty technique was based on the patient’s anatomical findings at consultation and at surgery. Because of these differences, in some cases a different technique was used on one twin than on the other. The facialplasty techniques used in this study were as follows: no superficial musculoaponeurotic system (SMAS) or skin only (four patients), conventional SMAS flap (dissection carried just anterior to the parotid gland) (two patients), SMASectomy as described by Baker,<sup>2</sup> (six patients), and SMAS plication (four patients). Adjuvant procedures, when performed, were performed on both twins. Interestingly, twins usually decide to have the same adjuvant procedures to retain their similar ap-

pearance. These procedures include one or more of the following: brow lift, blepharoplasty, and buccal fat pad excision.<sup>3</sup>

Follow-up photographs (of the same hemiface view from twin to twin) were obtained 13 to 60 months after surgery (mean, 23 months). The preoperative and postoperative results were evaluated by four plastic surgeons blinded to the type of face lift and to the nature of the ancillary procedures. The face was divided into three anatomical areas for evaluation: the cervicomental angle, the jawline, and the nasolabial fold. Each anatomical area was scored separately and graded as follows: 1, no improvement (poor); 2, mild improvement (fair); 3, moderate improvement (good); 4, marked improvement (excellent); and 5, perfect result. The average score by the evaluators for each anatomical region was added to achieve the total score (range, 3 to 15: 3, no improvement (poor); 4 to 6, mild improvement (fair); 7 to 10, moderate improvement (good); 11 to 14, marked improvement (excellent); and 15, perfect result). Complications were noted and analyzed.

## RESULTS

Table 1 summarizes the face lift results. At follow-up, seven of the patients (44 percent) were found to have an excellent result, four (25 percent) had a good result, and five (31 percent) were found to have a fair result. No patients had an outcome with a poor result or a perfect result.

One of two patients (50 percent) who had a conventional SMAS flap operation had an excellent result. In the SMASectomy group ( $n = 6$ ), two (33 percent) had excellent results, one (17 percent) had a good result, and three (50 percent) had a fair result. In the plication group ( $n = 4$ ), two (50 percent) had excellent results, one (25 percent) had a good result, and one (25 percent) had a fair result. In the skin-only group ( $n = 4$ ), two (50 percent) had an excellent result, one (25 percent) had a good result, and one (25 percent) had a fair result. The patient with the lowest average score (4.25) had a skin-only lift that was evaluated at 18 months postoperatively. Clinical examples of excellent, good, and fair results are shown in Figures 1 through 6.

The anatomical region that showed the best long-term improvement was the cervicomental angle (average, 3.42). The anatomical region that showed the least long-term improvement was the nasolabial fold (average, 2.45), similar to the findings by Hamra.<sup>4</sup>

Two patients (4a and 6a) (13 percent) had a small neck hematoma that was percutaneously evacuated on the seventh and eighth postoperative days, respectively. Neither patient suffered long-term problems from the hematoma. There were no patients who suffered a skin slough or facial nerve weakness in this study.

## DISCUSSION

In 2005, over 150,000 face lifts were performed in the United States. This represents an increase

**Table 1. Face Lift Results**

Twin Set	Type of Face Lift	Adjuvant Procedures	Average Score by Evaluators per Anatomical Region			Total Score (range, 3–15)	Result
			Neck	Jawline	Nasolabial Fold		
1a	SMAS flap	None	2.75	3.25	3	9	Good
1b	SMAS flap	None	4	4	3.5	11.5	Excellent
2a	SMASectomy	Blepharoplasty	4	4	3.5	11.5	Excellent
2b	Skin only	Blepharoplasty	3.5	3	2	8.5	Good
3a	SMAS plication	Blepharoplasty	4	2.25	2	8.25	Good
3b	SMASectomy	Blepharoplasty	4	2.25	1.75	8	Fair
4a	SMASectomy	Coronal brow lift	2	1.5	1	4.5	Fair
4b	Skin only	Coronal brow lift	2	1.25	1	4.25	Fair
5a	Skin only	Blepharoplasty	4	4	3.25	11.25	Excellent
5b	SMASectomy	Blepharoplasty	4	4	3.5	11.5	Excellent
6a	SMASectomy	Blepharoplasty	3.75	2.5	2.25	8.5	Good
6b	Skin only	Blepharoplasty	4	4	4	12	Excellent
7a	SMAS plication	None	4	4	3	11	Excellent
7b	SMAS plication	None	4	4	3.25	11.25	Excellent
8a	SMAS plication	Blepharoplasty, BFE	2	1.75	1.25	5	Fair
8b	SMASectomy	Blepharoplasty, BFE	2.75	1.5	1	5.25	Fair
		Average anatomical score by region (range, 1–5)	3.42	2.95	2.45		

BFE, buccal fat excision.



Fig. 1. Patient 5a (left) preoperatively and (right) 22 months postoperatively.



Fig. 2. (Left) Preoperative view of patient 5b, a 59-year-old woman with a long history of sun exposure. Note the advanced signs of aging as compared with her twin, shown in Figure 1. (Right) Postoperative view at 22 months.

of 52 percent of the number of face lifts performed in the year 1997.<sup>5</sup> Along with the increase in the number of procedures, there is also an increase in the number of the type of facialplasty techniques. Since the original work of Mitz and Peyronie<sup>6</sup> on the SMAS, many excellent tech-

niques in managing the SMAS have been described. Today, many of these techniques are commonly used. In a recent study by Matarasso et al.,<sup>7</sup> of 570 plastic surgeons surveyed, 18 percent dissected the SMAS over the parotid, 23 percent imbricated the SMAS, 15 percent performed a



Fig. 3. Patient 8a (*left*) preoperatively and (*right*) 18 months postoperatively.



Fig. 4. Patient 8b (*left*) preoperatively and (*right*) 18 months postoperatively.

SMASectomy, and 15 percent performed a skin-only procedure. In addition, 8 percent performed a deep/composite dissection, 16 percent performed an extended SMAS flap dissection, and 5 percent performed a subperiosteal and/or an endoscopic lift. When considering the options, one must realize that facial rejuvenation requires a complete analysis of the topographic changes that

occur in the aging face. A careful selection of facialplasty technique and adjuvant procedures should be chosen to provide the patient with a harmonious result.

Using monozygotic twins as the subjects of study, major anatomical differences between patients are removed, allowing the comparison of SMAS techniques to be more accurate. It is im-





Fig. 5. Patient 3a (left) preoperatively and (right) 16 months postoperatively.



Fig. 6. Patient 3b (left) preoperatively and (right) 16 months postoperatively.

important to obtain genetic marker analysis to ensure that the twins are indeed monozygotic rather than dizygotic. Monozygotic twins typically maintain their similar features throughout life, as opposed to dizygotic twins, who can vary greatly in appearance. However, it is not to say that even monozygotic twins age in a similar fashion. Environmental factors including cigarette smoking, sun exposure, and undue stress can cause one twin to age more than the other<sup>8</sup> (Fig. 7).

Not only does the aging process differ between twins and nontwins, but it may also differ between the right and left sides of the face. One upper eyelid may have more excess skin than the other or one facial half may demonstrate more

soft-tissue ptosis and sun damage. These findings are evident on analysis of split-face preoperative photographs (Fig. 8). In our patients with these findings, the same face lift technique was used on both sides. However, one could argue to use a different technique on one side of the face than the other to ultimately provide a more symmetric face and a better overall result.

The results of our study essentially showed no difference between the face lift techniques on analysis of the postoperative results. Previous studies comparing superficial plane techniques have shown similar results.<sup>9-11</sup> Despite these findings, it is impossible to draw any firm con-



**Fig. 7.** (Left) Twin with a 30-pack-year history of cigarette smoking. Note the advanced signs of aging as compared with her nonsmoking twin (right).



**Fig. 8.** Patient 5b. (Left) Mirrored image of the right side of the face. (Right) Mirrored image of the left side of the face.

clusion for several reasons. The patients in this study were not randomized to one technique or another. The senior author carefully chose one technique over the other based on the subject's physical findings and his own experience. By choosing a technique based on the severity of aging, a selection bias is inherently present. In addition, no statistical analysis was performed because of the small number of patients enrolled in the study, and a type II error (not being able to show a difference when there actually is a difference) is possible given the small number of subjects. There are currently many twins that

have recently undergone facialplasty that have less than 1 year of follow-up that will be evaluated in the future. This increase in number will help—but not completely—eliminate a type II error. Finally, the subjective nature of evaluating cosmetic results allows for error.

The deep plane techniques were not evaluated in this study but certainly have been used with great success. In addition, specific maneuvers to improve the lid-cheek junction were not used. As we are all aware, there exists much debate over the superiority of superficial versus deep plane techniques.<sup>12,13</sup> Presently, both authors use both

superficial and deep plane techniques<sup>14,15</sup> and operations to improve the lid-cheek junction<sup>16</sup> but are careful not to use an aggressive procedure where a more conservative approach is warranted.

### CONCLUSIONS

The clinical results of four of the superficial plane face lift techniques are similar when performed on the routine patient presenting for facial rejuvenation. As newer techniques evolve, one should evaluate the results over the long term. Many techniques demonstrate improvement over the short term but provide little or no improvement compared with the proven techniques over time.

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### DISCLOSURE

*Neither of the authors has a financial interest in any of the products, devices, or drugs mentioned in this article.*

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