ELSEVIER SAUNDERS

FACIAL PLASTIC SURGERY CLINICS OF NORTH AMERICA

Facial Plast Surg Clin N Am 15 (2007) 471–476

# The Corner of the Mouth Lift and Management of the Oral Commissure Grooves

Stephen W. Perkins, MD[a,b,*]



One of the many features that contribute to the aging appearance of the perioral region is the downward turn to the oral commissures [1]. This downward turn, which often extends to a significant oral commissure groove and "marionette" appearance, gives a sad, tired, almost angry look in some patients. This senility can be extreme and causes lateral oral commissure drooling and angular cheilitis in some patients.

The downward turn to the corner of the mouth can be the single remaining aging factor that "spoils" an otherwise excellent rejuvenative surgical effort (Fig. 1). In fact, in many cases, this is the area patients are most bothered by and wish that their facelift had corrected. In preoperative evaluation and consultation, one must show patients the improvements in the marionette groove by lifting the jowl tissues, but specifically point out that the corner of the mouth does not lift and that the downward turn and groove persist. Alternatively, one can also show that, if you pull the skin tissues taut enough to lift the corner of the mouth, the face then has an unnatural, pulled, operated appearance. In addition, one must point out that with standard rhytidectomy techniques, the fold of tissues at the modiolus, just lateral to the oral commissure, is minimally effaced.

Therefore, physicians must offer consultative, prospective patients adjunctive procedures to correct the downward turn and help efface the deep oral commissure grooves. Augmentation filling of this area is the mainstay for correcting and maintaining ongoing improvement (Fig. 2). Fat has been used with variable success to fill this area and is readily available from submental liposuction. The problem with fat in this area of motion is that it usually absorbs eventually. Otherwise, a lump of fat occasionally remains or even enlarges, creating a visual lumpy deformity.

Injectable fillers are the best and most commonly used treatment for filling and effacing the oral commissure groove [2]. With proper techniques, one can achieve an actual lift to the oral commissure, even though temporary. The most commonly used fillers that are effective for 6 to 12 months are hyaluronic acid or calcium hydroxyapatite. The latter has more of a tendency to clump and form lumps or become visible because it is white in that area. Using small amounts of Botox (botulinum toxin)—two to three units on each side—to

[a] Meridian Plastic Surgeons, 170 West 106th Street, Indianapolis, IN 46290, USA
[b] Department of Otolaryngology-Head and Neck Surgery, Indiana University School of Medicine, Indianapolis, IN, USA
* Correspondence. Meridian Plastic Surgery Center, 170 West 106th Street, Indianapolis, IN 46290.
*E-mail address:* sperkski@aol.com

1064-7406/07/$ – see front matter 
doi:10.1016/j.fsc.2007.08.005
facialplastic.theclinics.com

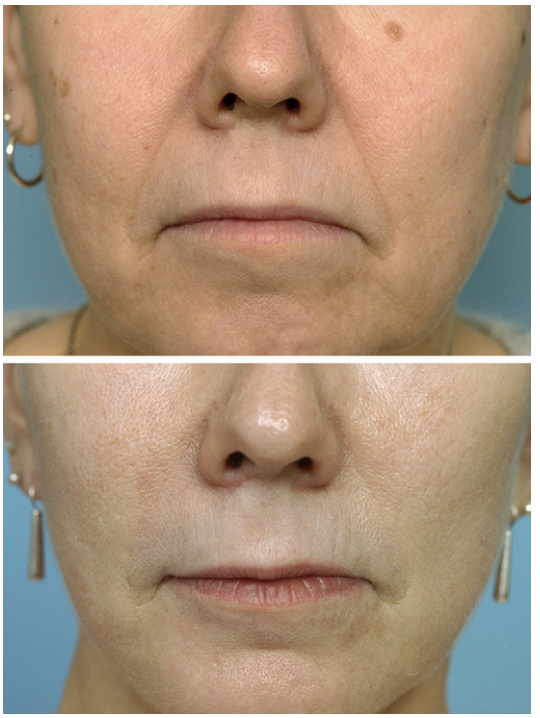

*Fig. 1.* (*Top*) Preoperative view of patient who has downward turn to oral commissure. (*Bottom*) Postoperative view with persistence of downward turn to oral commissure despite facelift.

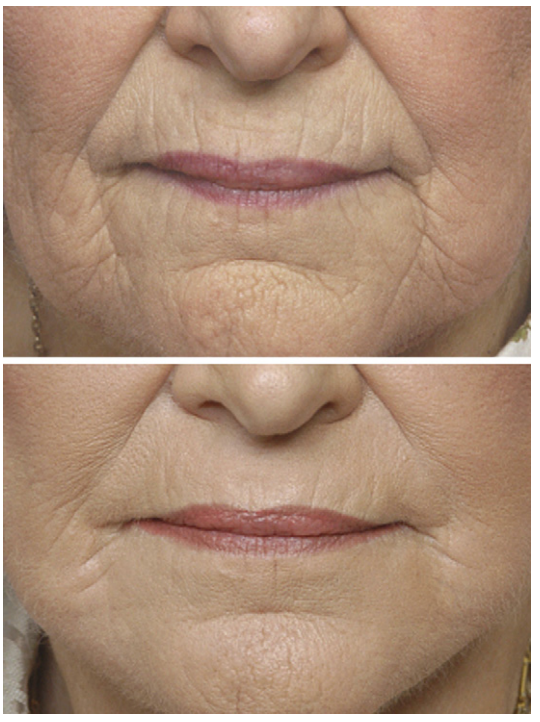

*Fig. 2.* Patient showing improvement in oral commissure groove with injectable filler (hyaluronic acid).

prevent the depressor anguli oris (DAO) muscle from pulling down the corner of the mouth can, in fact, add to the temporary improvement [3]. Dr. J. William Little of Washington, DC, advocates direct transsection of the DAO at facelifting surgery to "lift" the corner of the mouth.

These are the most common ways to treat the downward turn of the corner of the mouth because they are the least invasive and do not leave an external scar. They are definitely the initial treatment recommendations that the author offers a new prospective patient. However, some patients either have such severe and often asymmetrical downward turn to the corner of the mouth or dislike this aspect so much that they desire a more direct surgical definitive and lasting solution (Fig. 3). The corner of the mouth lift then becomes a reasonable alternative preferred procedure [4]. It has advantages and disadvantages and is usually not the primary procedure offered to a patient because of the resulting scar that is a natural consequence of the operation. It is a definitively designed surgical procedure that directly lifts the corner of the mouth and partially corrects the oral commissure, marionette groove, and even some of the redundancy of the modiolus.

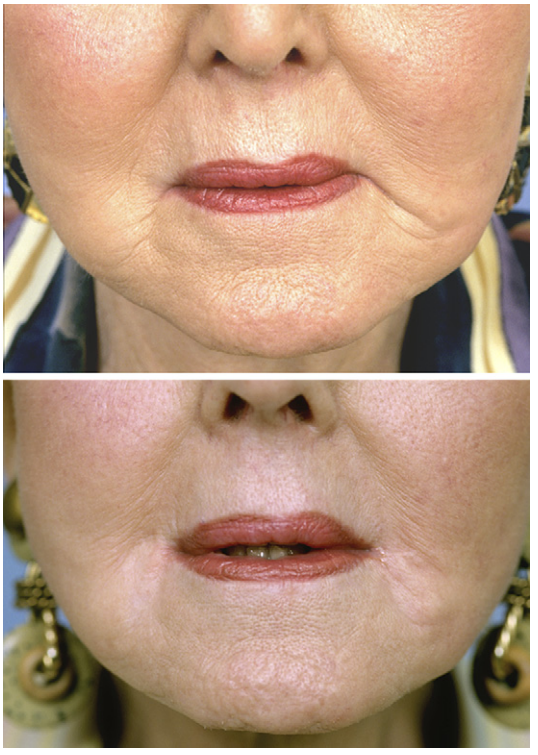

*Fig. 3.* Patient who has severe downward turn to oral commissure and fold of skin at modiolus corrected with corner of mouth lift.

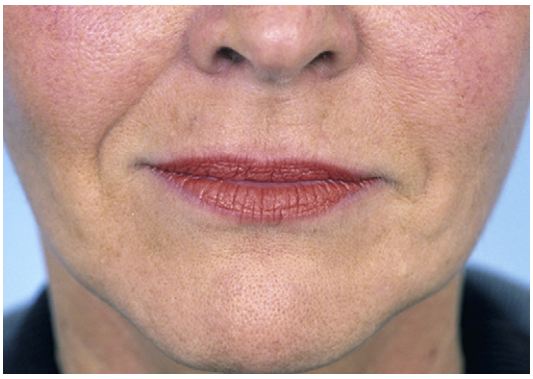

*Fig. 4.* Younger patient showing hereditary downward turn to oral commissure.

## Indications for corner of the mouth lift

Indications for the corner of the mouth procedure are the existence of the downward turn to the oral commissure or corner of the mouth (Fig. 4). This feature can result in a frowning look of the mouth that must be corrected. This procedure is indicated when these are persistent oral commissure grooves, despite the patient having undergone facelift, possibly mid-facelift, or augmentation with fat or other injectable fillers. In severe cases involving drooling, the corner of the mouth lift can be a therapeutic option to treat not only the drooling but also angular cheilitis (Fig. 5).

## Advantages of the corner of the mouth lift

The corner of the mouth lift is an immediate cosmetic correction of the problem. Essentially no residual downward turn to the corner of the mouth is present at the end of the operation. The improvement in the oral commissure chin–cheek groove ("marionette line") is immediately apparent and improves the overall rejuvenative efforts of all other aging face procedures performed on the patient (Fig. 6).

## Planning and design technique for corner of the mouth lift

Incisions for the corner of the mouth lift should be marked while the patient is in the sitting or semirecumbent position. A dot is placed at the oral commissure, precisely at the junction of the skin with the vermilion. A triangle of skin is marked just

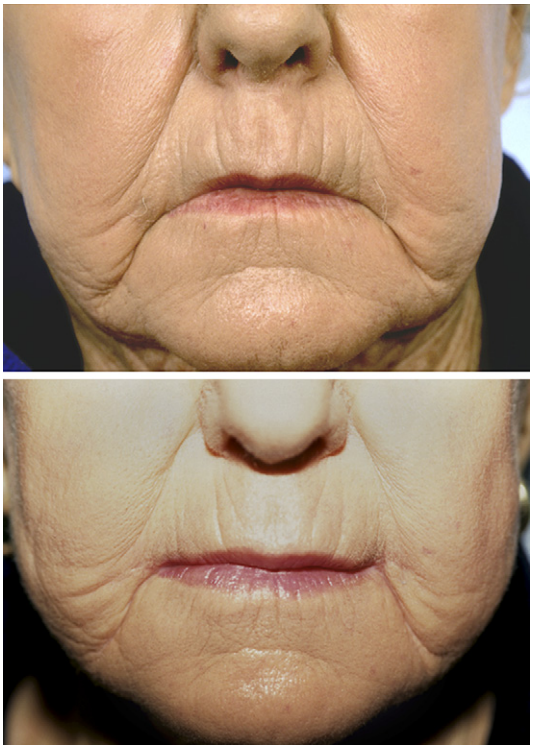

*Fig. 5.* Elderly patient who has symptomatic drooling and angular cheilitis improved with corner of mouth lift.

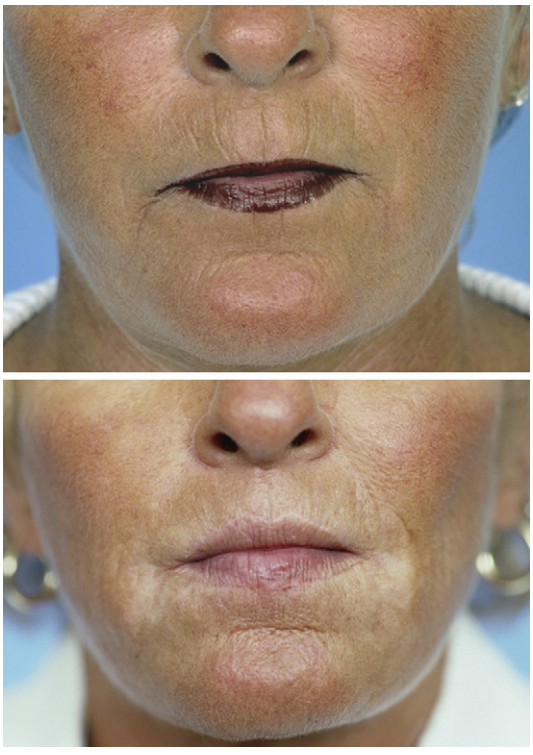

*Fig. 6.* Nice postoperative improvement from corner of mouth lift.

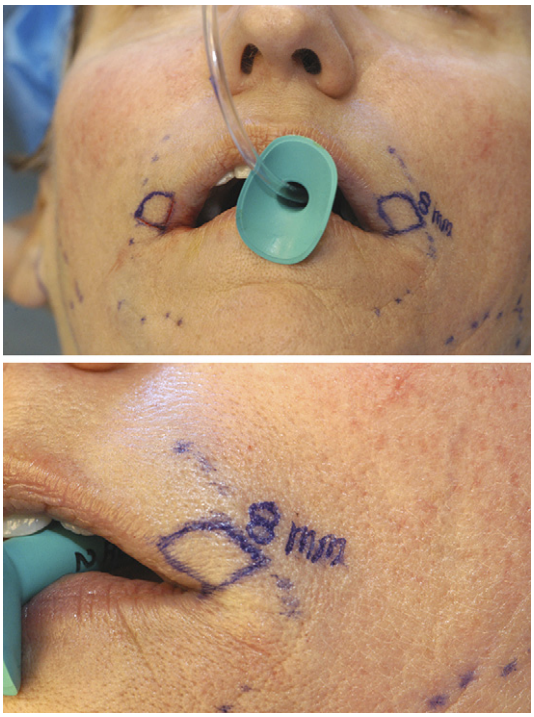


*Fig. 7.* Drawing of corner of mouth lift during preoperative planning.

above each oral commissure by extending the line medially from the dot in a line directly diagonal to the superior aspect of the tragus, ending at approximately 1 cm or no more than 1.5 cm in length, but definitively never past the natural cheek-lip groove or crease. The lateral aspect of this incision is limited by where that crease folds around the lateral oral commissure area. A second line is then drawn along the vermilion border an equal length to the diagonal that was already drawn superiorly along the upper lip vermilion border. Then, in a curvilinear fashion, the two diagonals are connected forming a convex top to a triangular amount of tissue to be excised (Fig. 7). The height of this curve from the oral commissure to the highest part of the arch of the curve is usually 7 mm and no more than 9 mm maximally [5,6]. This shape can be adjusted asymmetrically depending on which side of the corner of the mouth is more severely depressed. This triangle of full thickness skin tissue is then excised down to the orbicularis oris muscle but not including muscle fibers (Fig. 8). Appropriate hemostasis is obtained and no undermining is required. The wound is closed initially from the oral commissure to the mid portion of the superior arch with a 5-0 Dexon buried subcutaneous suture. Then, the remainder of the wound is carefully approximated and everted with 6-0 Dexon sutures, taking care not to leave a dog-ear and to compensate for uneven lengths of both sides of the skin and vermilion tissues. The skin edges are then closed with a running 7-0 blue Prolene suture in a simple fashion (Fig. 9). Sutures remain in place 5 to 7 days, preferably removed at approximately 5 days.

Within 8 days, the pink scar can be camouflaged with makeup and tends to fade over 2- to 3-months. Rarely, a light dermabrasion or small scar revision is indicated if one portion of the scar indents and is more noticeable than the natural rhytid of the area.

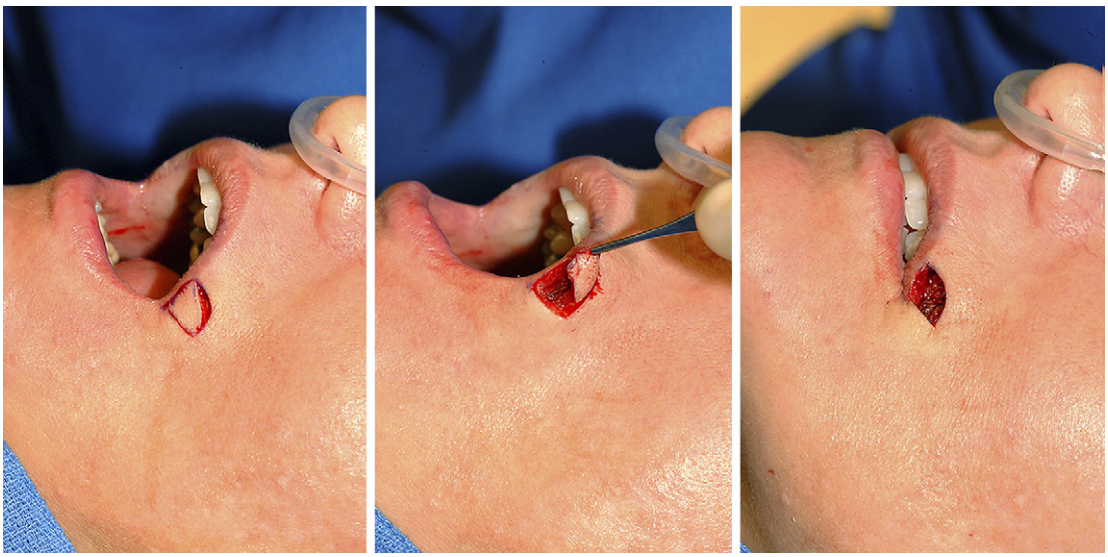

*Fig. 8.* Surgical technique for corner of mouth lift.

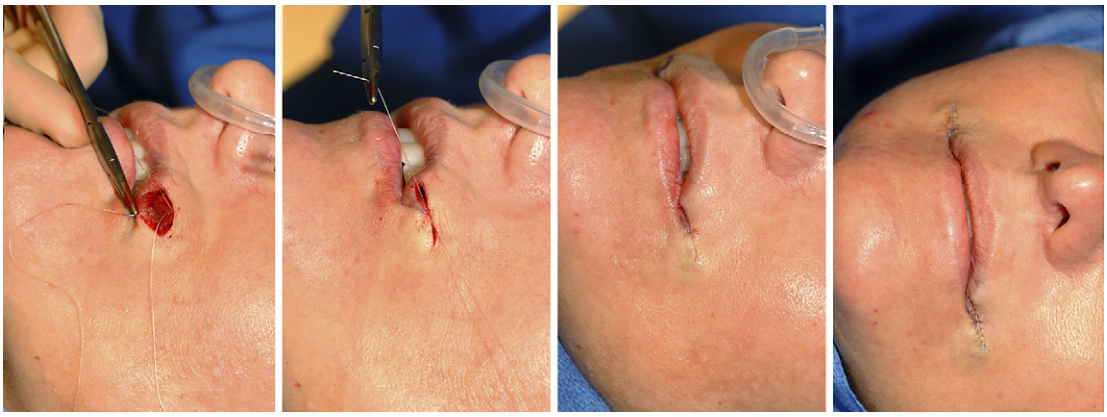

*Fig. 9.* Suture technique for corner of mouth lift.

## Disadvantage of the corner of the mouth lift

One disadvantage of the corner of the mouth lift to be weighed against its advantages is the visible scar that is permanent and extends approximately 1.0 to 1.5 cm lateral in the oral commissure (Fig. 10). The scar is usually minimally noticeable and can be easily camouflaged, but is the reason this procedure is often not offered as a first-choice procedure. Initially, a slightly overcorrected appearance to the oral commissure can occur and, if overdone, can almost give an unnatural "joker's" smile appearance (Fig. 11). The deep oral commissure chin–cheek groove is only partially corrected, but it is improved.

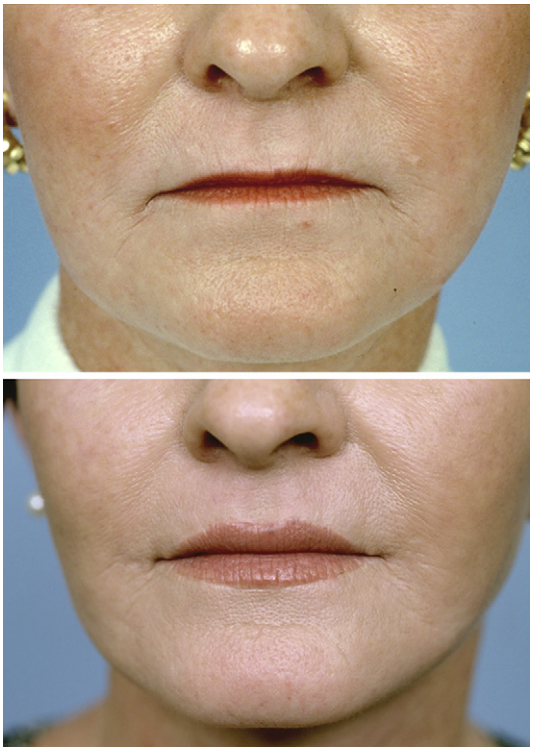

*Fig. 10.* Nice improvement with corner of mouth lift post-facelift but with persistent visible scar.

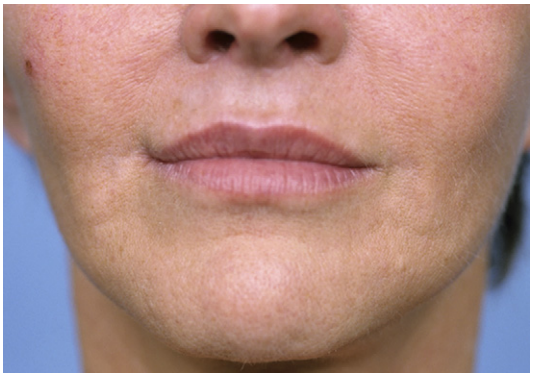

*Fig. 11.* Slightly overdone corner of mouth lift on right side.

## Summary

The downward turn to the oral commissure of the mouth is often a presenting complaint by many patients who note that it gives them a more aged, somewhat tired, angry appearance. It is very hereditary in nature and is not easily corrected, even with simple injectable materials. However, most patients are adequately treated, at least temporarily, with temporary filler materials. The downward turn of the oral commissure and marionette groove is aggravated by descending and aging facial soft tissues, which can be improved with cheek rhytidectomy lifting techniques. However, persistence of the oral commissure groove and downward turn to the corner of the mouth can necessitate a more definitive surgical direct approach. The corner of the mouth

lift offers this direct approach and can be a very satisfying operation in selected patients.

## References

[1] Ellis DAF, Bakala CD, Harlock JN. Analysis of the perioral complex. Facial Plast Surg Clin North Am 1997;5:1.
[2] Bosmiak S, Cantisano-Zilkha M, Glavas IP. Non-animal stabilized hyaluronic acid for lip augmentation and facial rhytid ablation. Arch Facial Plast Surg 6:379–83.
[3] Carruthers J, Fagien S, Matarasso S. Botox consensus Grp. Consensus recommendations on the use of botulinum toxin type A in facial aesthetics. Plast Reconstr Surg 114(Suppl 6).
[4] Cheng JT, Perkins SW, Hamilton MM. Perioral rejuvenation. Facial Plast Surg Clin North Am 2000; 8(Suppl 2).
[5] Austin HW. Chapter 144: perioral rejuvenation. In: Cohen M, editor. Mastery of plastic and reconstructive surgery. vol. III. Little, Brown & Co.
[6] Austin H, Weston GW. Rejuvenating the aging mouth. Perspect Plast Surg 1994;8(Suppl 1): 27–56.