

Advantages and Complications Using a Modified Vestibuloplasty Technique for Flexible Repeated Repair of Cleft Lip and Palate That Does Not Necessitate Alveolar Bone Graft

Purpose: The purpose of this paper is to describe Modified Vestibuloplasty - a flexible modified technique for repair of cleft lip and palate that employs healthy viable vascularized tissue, to present the number and types of cases this technique was used in, and level of complications realized in using this application over a period of 5 years. **Surgical Method:** The Modified V-plasty technique consists of: (1) deepening of the anterior vestibule with rotation advancement of the local mucosal flaps, (2) dissection of the upper lip vestibule allowing elevation of the inferiorly based mucosal flap in the anterior maxilla, and (3) advancing an upper lip rotation flap and intermediate C-flap while still attached to the columella. **Data Collection Method:** The following data were collected: type of repair required; age of patient; nature of complication. **Results:** Vestibuloplasty and Modified V-Plasty technique were applied to 328 patients ranging in age from 6 months to 3 years with a 3% complication rate. **Conclusion:** The Modified V-Plasty surgical technique presents a tremendous amount of benefit and utility for clinicians and their patients when repairing cleft lip. Modified V-Plasty results in fewer complications with greater function of the lip following the release of tension, and a more pleasing aesthetic appearance overall.

INTRODUCTION

Many variables play an essential role in necessitating further revision of a previously corrected cleft lip. Issues include: wound dehiscence, upper lip adhesions, and scar contracture leading to increased tightening of the upper lip. Patients whose lips appear normal until asked or prompted to smile, blow, whistle or pucker, resulting in little lip motion, are good candidates for revision. The goal of this technique of course is a more natural looking lip, where things are nice and loose, and with a vestibular area large enough to support easy brushing, and braces if needed.

A technique that supports repeated cleft lip modification, such as vestibuloplasty without the absolute need of an alveolar bone graft is useful. This modified technique has not previously been well described, even though patients who have undergone this modified procedure realizing benefits not available when using standard vestibuloplasty.

SURGICAL METHOD

The following is a description of the modified vestibuloplasty technique, as performed on a patient who had undergone XXXX with XXX. This procedure began naturally with the upper lip vestibule incision, allowing for elevation of inferiorly based mucosal flap in the anterior maxilla. The incision was then extended laterally on both sides where a back cut was completed distal to the parotid duct opening. Mucosal flaps were elevated from the underlying muscle and submucosal plane. All abnormal attachments of the orbicularis oris muscle were completely freed from the anterior maxillas towards the anterior nasal spine. However, the periosteum was left attached to this area.

Orbicularis Oris Muscle Repair

The periosteum was incised in the left nasal area to evaluate the take of bonegraft from previous surgeries and also to allow elevation of the depressed left nasal ala sill. At this time, the orbicularis oris muscle was repaired within the upper lip using 5-0 *Monocryl* interrupted horizontal mattress sutures. The inferiorly attached mucosal flap was then elevated superiorly and attached to the anterior nasal spine mucoperiosteum using 5-0 *Monocryl* interrupted simple and horizontal mattress sutures. Multiple sutures were placed to prevent prolapse of the mucosal flap, which when advanced from lateral to medial on both sides and repaired to the gingival using 5-0 *Monocryl* interrupted simple and horizontal mattress sutures.

A modified V- plasty was completed within the anterior vestibule and satisfactory closure was achieved. Incisions were then extended with the upper lip, creating an increased rotation flap, advancement flap, and intermediate C-flap, which was left attached to the columella. The rotation flap was freed from the underlying muscle for several millimeters, and the muscle was similarly freed from the nasal floor and anterior nasal area. Additionally the advancement flap was also freed from the underlying muscle using a15C blade. All the abnormal attachments of the orbicularis oris muscle were completely freed at this time. Once the muscle was freed, it was repaired using 5-0 Monocryl interrupted simple and horizontal mattress sutures.

DATA COLLECTION METHOD

The modified and vestibuloplasty techniques were implemented in a total of 328 patients, ranging in age from 6 months to 2 years, over a 5 year period of time. Symptomatic categories were tracked by age and included repair categories of: unilateral and bilateral cleft; unilateral and bilateral cleft and palate deficiency; tight upper lip; unilateral and bilateral cleft, lip and palate and alveolus; complex facial cleft; mandible and maxillary fractures; recurrent pyogenic granuloma; persistent lip hemangioma. Additionally, data describing complications were noted.

CONCLUSION

Modified V-plasty technique can be used for closure with success and fewer complications than standard V-Plasty technique. Previously made flaps are useful for transposition within the anterior vestibule and repaired using 6-0 Monocryl interrupted sutures.