

## **Modified Furlow Palatoplasty Using Small Double-Opposing Z-Plasty for Patients with Cleft Lip and/or Palate**

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### **Abstract Text:**

**Background:** Since Furlow's palatoplasty was first published, it has gained a high degree of popularity among cleft lip and palate surgeons, making the double-opposing Z-plasty one of the most commonly used techniques for primary palatoplasty.<sup>1</sup> In our modification of the Furlow procedure we have used a smaller double-opposing Z-plasty in the soft palate than previously reported, and various lateral relaxing incisions in the hard palate selected according to the intraoperatively detected tension for midline wound closure. The purpose of this study is to assess the surgical outcome and the longitudinal speech function in the postoperative course using our modified procedure.<sup>2</sup>

**Methods:** The surgical technique included mucoperiosteal flap elevation in the hard palate, complete pedicle dissection and release, double-opposing Z-plasty using 5-mm limbs and muscle dissection in the soft palate, and the buccal fat pad covering lateral relaxing wounds. Retrospective chart review was conducted for 231 consecutive non-syndromic patients undergoing the modified palatoplasty from May 2007 to December 2014. The demographic, postoperative, and follow-up data were collected. Statistical analyses were performed.

**Results:** Average age at palatoplasty was 8.3 months. Overall oronasal fistula rate was 0.4%, which occurred only in one case with bilateral cleft. Other complications included postoperative bleeding in 2 cases (0.8%), postoperative airway obstruction in 1 case (0.4%), obstructive sleep apnea in 1 case (0.4%), stitch abscess in 1 case (0.4%), and distal uvula dehiscence in 2 cases (0.8%). 127 patients had full speech evaluation. 110 (86.6%) patients were assessed as having adequate function, 10 (7.8%) had marginal velopharyngeal function, and 7 were diagnosed with inadequate function with performed or recommended velopharyngeal insufficiency (VPI) surgery (5.5%). There was no significant relationship between speech function or VPI surgery rate and the type of cleft palate (chi-square,  $p = 0.32$  and  $p = 0.41$  respectively).

**Conclusion:** This modified palatoplasty using a small double-opposing Z-plasty provided adequate cleft palate closure with low fistula rate and satisfactory speech outcome.

## Reference

1. **Furlow LT, Jr.** Cleft palate repair by double opposing Z-plasty. *Plast Reconstr Surg.* 1986;78(6):724-738.
2. **Yamaguchi K, Lonic D, Lo LJ.** Modified Furlow palatoplasty using small double-opposing Z-plasty: Surgical technique and outcome. *Plast Reconstr Surg.* In press.

