

Bone Regeneration of Hard Palate after Primary Alveolar Bone Grafting from Hard Palate at One Stage Repair of Unilateral Cleft Lip and Palate

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Abstract

Background: Enough bone formation of alveolar cleft is very important for the treatment of unilateral cleft lip and palate (UCLP). Today, secondary alveolar bone grafting (SABG) has become standard method for the purpose. We have been performing primary alveolar bone grafting (PABG) against the trend.(1)

Methods: At primary operation, cleft lip and palate are repaired simultaneously. Bone harvesting from hard palate is performed. Alveolar cleft is usually closed by gingivoperiosteoplasty(GPP) or gingivomucoperiosteal flap(GMPF). If presurgical orthopedics(PSO) does not work well for GPP / GMPF or the patient cannot afford to undergo PSO, corticotomy is performed so that some part of non-cleft alveolar bone can be mobilized toward cleft side.

Results : Between June 1998 and December 2011, a total 214 unilateral cleft lip and palate patients underwent simultaneous repair of cleft lip and palate including PABG from hard palate in our hospital. So far, only one case required SABG. Shown in (Figure 1) is CT images of a representative case of left UCLP. Shown in (Figure 2) is the intraoperative photo of right complete UCLP, who underwent SABG at the age of 7. Though not enough in quantity, some amount of bone formation can be observed in alveolar cleft. As bone regeneration of the donor site was good, we performed SABG from hard palate instead of iliac bone.

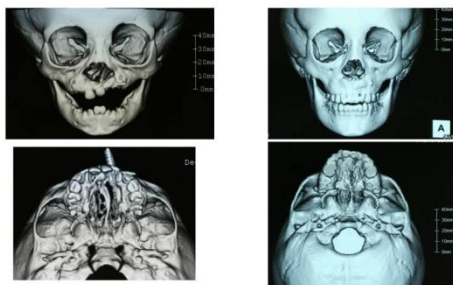


Figure 1.CT images of 2 weeks after operation(left) and 4 years old (right)

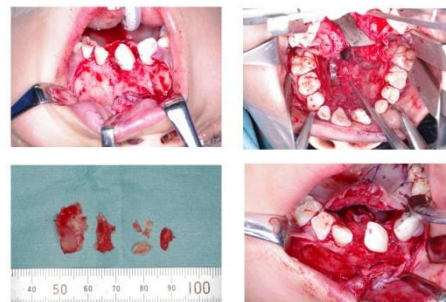


Figure 2.Intraoperative photos of SABG from hard palate of right complete UCLP

Conclusions: With the encouraging results, we conclude that PABG from hard palate is an effective method for the reconstruction of alveolar cleft. Even if SABG is required, bone augmentation of alveolar cleft may be attained by SABG from hard palate instead of iliac bone.

Reference:

1.Torikai K., Hirakawa T., Kijima T., et al. Primary alveolar bone grafting and gingivoperiosteoplasty or gingivomucoperiosteal flap at the time of 1-stage repair of unilateral cleft lip and palate. J Craniofac Surg. 20 suppl 2:1729-1732,2009.