CONCLUSION: At age 13, the most common anomaly was a missing tooth, most likely the 3rd molar (38%), though this is also the most commonly missing tooth in the general population. Other teeth, such as other molars and premolars, were also commonly missing. Molars were also observed to be impacted, ectopic, dysplastic, or ankylosic.

Prophylactic Use of Buccal Fat Flaps to Improve Oral Mucosal Healing Following Furlow Palatoplasty

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BACKGROUND: Furlow palatoplasty (FP) is increasingly used both for primary palatoplasty and secondary correction of VPI. While FP offers the advantage of lengthening the palate, the most tenuous component of the oral mucosal repair is anterior transposition of the oral mucosal z-plasty flap. When a secondary FP was done to correct VPI following primary FP, the senior author found oral mucosal separation in 53% of cases. To mitigate this problem, we prophylactically placed pedicled buccal fat pad flaps to provide an additional vascular layer to promote healing of the overlying oral mucosal z-plasty flap.

METHODS: A retrospective chart review identified patients who underwent pedicled buccal fat pad flaps with FP performed by the senior author (A.G.). Cleft palate diagnosis, Veau classification, primary and secondary palate repair surgeries, surgical technique and post-operative complications were extracted. The need for buccal fat flap augmentation was determined if the oral mucosal z-plasty flap showed duskiness during transposition or was under tension at the time of closure. Unilateral versus bilateral buccal fat flaps were chosen based on expected areas of tension in the final repair. On the buccal mucosa, a longitudinal incision just lateral to the most posterior aspect of the alveolar ridge was made, from which buccal fat was gently teased out. This was tunneled submucosally to the palatal repair site, where it was secured just posterior to the hard palate and anterior to the transposed levator veli palatine muscle. The oral side of the Furlow palatoplasty was then brought together over these pedicled buccal fat flaps.

RESULTS: We identified six patients who underwent FP with buccal fat flap augmentation. Two patients (33%) were primary FP while four patients (67%) were secondary FP. Three patients had unilateral cleft lip and palate, two had submucosal cleft palate and one had cleft palate only. The youngest patient was 11 months old, and the oldest was 7 years and 9 months. Half of the procedures used bilateral buccal fat pad flaps while the remainder were unilateral. All patients were seen at two weeks postoperatively and followed up regularly, with average follow-up time of 21 months (range 8–41 months). Post-operatively, one patient demonstrated a 1 cm area of mucosal dehiscence at the tip of the posterior triangular flap, which healed uneventfully. There were no other post-operative complications observed, including donor-site complications, complications relating to the buccal fat pad flap. No patient developed an oronasal fistula.

DISCUSSION: Our experience suggests that the buccal fat pad flap may minimize vascular compromise and dehiscence of the oral mucosal z-plasty following FP. This separation rate decreased from 8/15 (53%) patients in our prior series of secondary FP procedures to 1/4 (25%) patients undergoing secondary FP with buccal fat flaps. Cleft palate surgeons should consider adding this low-risk technique to their repertoire, as it provides an additional vascular layer beneath the most tenuous part of the oral mucosal closure in a FP, and may improve vascularity to the overlying oral mucosa so as to minimize dehiscence at this closure.