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NASALITY AND NASAL AIR ESCAPE AFTER PALATOPLASTY AT TWO DIFFERENT AGES WITH FURLOW OR VONLANGENBECK PROCEDURES

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Background: One of the goals of primary palatoplasty for children with cleft palate is to establish velopharyngeal mechanism able to support oral resonance. Nasality and nasal air escape (NAE) during oral speech production have been used as outcome measures after palatal repair.

Objective: The objective of this study was to compare nasality and NAE for 197 children with unilateral cleft lip and palate assigned to two different palatal techniques at two different ages for primary palatoplasty.

Methods: The children studied were operated by 4 surgeons at two ages with 94 children operated between 9-12m and 103 children operated between 15-18m. While 103 children received the VonLangenbeck (VL) procedure, 94 received the Furlow (F) procedure. Resonance 4-point-scales and cul-de-sac test were used for measures of nasality, a mirror test was used for measures of NAE. All children presented with no hyponasality and used no atypical articulatory place of production when rated between 36-95 months of age (Mean: 52m, SD:13).

Results: A total of 179 (91%) children were rated with normal resonance, 90% received VL and 91% received F. Five were found with moderate hypernasality (1F, 4VL) and 13 with mild hypernasality (7F, 6VL). Logistic regression revealed no significant difference for surgeon, palatal technique or timing. 95% agreement was found between the 4-point-scale and cul-de-sac test with kappa statistic of 0.76. Kappa statistic of 0.40 was found between 4-point-scale and mirror test and 0.46 between cul-de-sac and mirror.

Discussion: Implications of findings for treatment will be discussed.

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IDENTIFICATION OF PASSAVANT'S PAD WITH AND WITHOUT THE SPEECH BULB

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Introduction: Lack of movement of velopharyngeal structures during speech is known as hypodynamic-velopharynx and is found in individuals with velopharyngeal dysfunction (VPD). Use of speech bulb has been proposed as a tool for stimulating movement of the velopharynx, particularly the pharyngeal walls. When elicited together, the movement of the posterior and lateral walls resembles a ring known as Passavant's Pad (PP).

Objective: The objective of this study was to verify presence of PP with and without the speech bulb for 62 patients referred for prosthetic treatment to correct VPD.

Methods: Nasoendoscopic images of the velopharynx from 29 males and 33 females with VPD were analyzed with and without a speech bulb. Images were obtained during a single session of nasoendoscopic evaluation when patients were fitted with speech bulbs for correction of VPD. Three speech-language pathologists (SLP) identified PP reviewing images of the velopharynx with and without speech bulb.

Results: In the condition without bulb 24 patients (37.5%) presented with PP. After insertion of the speech bulb, 17 of these 24 subjects maintained the PP, which was inhibited for 7 patients after insertion of the bulb. For the 40 patients (62.5%) who presented no PP without the bulb, the pad was elicited for 6 patients after fitting the bulb. Ratings were considered after the SLPs reached 100% agreement.

Discussion: Elicitation and inhibition of PP were observed after fitting speech bulbs in patients with VPD. Implications of findings for prosthetic and behavioral management of VPD will be discussed.

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LONGITUDINAL SPEECH ANALYSES IN PATIENTS WITH CLEFT PALATE WITH LATE PRESENTATION

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Introduction: In this study we aimed to develop a clinical methodology to assess speech and hearing impairment after the primary cleft palate repair in patients with late presentation. Additionally, we described an articulation and speech symptoms related to velopharyngeal insufficiency (VPI) in old children with unrepaired cleft palate.

Method: Speech of thirteen children (from 4 to 6; from 7 to 10; from 11 to 14; from 23 to 25 years) with cleft palate (CP) who underwent to a late palatoplasty using an Intravelar –veloplasty technique was assessed. Two experienced listeners performed a blinded perceptual speech evaluation preoperatively and for consecutive three weeks postoperatively. A perceptual evaluation was audio- and video-recorded in the following time points after surgery: 0 to 3 months, 4 to 6 months, 7 to 9 months, 10 to 12 months, 13 to 15 months. The degree of hypernasality, hyponasality and weak pressure consonant, audible nasal escape, velopharyngeal friction sound, glottal stops, pharyngeal friction and articulation retraction were analyzed on a five point scale.

Results: The longitudinal speech analyses showed better speech articulation and resonance balance at 4th month after surgery. Older patients showed more difficulty to recognize misarticulatory and to correct these errors on the spontaneous speech.

Conclusion: In our series, palatoplasty performed at late age improved the speech, however old patients may have remaining articulatory errors, owing to a persistent bad speech habits. Intense speech therapy is required in order to achieve a satisfactory speech. Additional procedure to treat VPI is eventually necessary in this population.

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PALATE RE-REPAIR WITH LEVATOR VELI PALATINE RADICAL REPOSITIONING: LONGITUDINAL SPEECH ASSESSMENT.

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Introduction: Old techniques of palate repair may lead to a high rate of Velopharyngeal Insufficiency (VPI), due to the absence of posterior sling of the levator palatini muscle. The aim of this study was to evaluate speech after re-repair of the palate using radical levator dissection and muscle repositioning, forming a posterior muscle sling.

Methods: Sixteen children (4 to 6y; 8 to 11y; 14 to 21y and 28 to 42 y) with cleft lip and palate underwent to a re-repair of the palate using a radical levator muscle dissection and repositioning. Perceptual evaluation using audio- and video-recorded were done before and after surgery in the following time points: 0 to 3 m, 4 to 6 m, 7 to 9m, 10 to 12m, 13 to 15m. Two experienced speech therapists performed a blinded perceptual speech evaluation for three consecutive weeks analyzing some variables. The degree of hypernasality, hyponasality and weak consonant pressure, audible nasal escape, velopharyngeal friction sounds, glottal stops, pharyngeal friction and articulation retraction were analyzed on a five point scale.

Results: The longitudinal assessment of speech showed better speech articulation and resonance balance at 4th months after surgery, however patients with large pharyngeal gap may require an additional procedure to treat VPI. Older patients showed more difficulty to recognize misarticulatory and to correct these errors on the spontaneous speech. **Conclusions:** Patients with small and medium gap strongly benefited with palate re-repair technique with complete posterior mobilization of levator muscle. Intense speech therapy is necessary for correction of the articulatory errors.