

**Results Axonal viability:** after 8 weeks, axons had regenerated into the distal grafts in all lengths: mean myelinated axon counts ( $\pm$ SD): 7043 ( $\pm$ 790), 6066 ( $\pm$ 1838), 6491 ( $\pm$ 983) in 2cm,3cm,4cm grafts, with no differences between graft lengths ( $p=0.48$ ). One week after elevation and unfurling, the number of myelinated axons was significantly decreased in all groups ( $p<0.006$ ): 3821 ( $\pm$ 567), 2953 ( $\pm$ 1107), 2894 ( $\pm$ 1761) in 2cm,3cm,4cm grafts, with no differences between lengths ( $p=0.91$ ). **Ischemic injury:** immediately after elevating a PING, blood flow within the distal half of the graft fell to baseline levels (i.e. no blood flow). 3 days after elevation, blood flow throughout the graft was significantly above baseline ( $p\leq 0.04$ ) and matched/exceeded flow measured immediately prior to elevation. **Functional impact:** preliminary results suggest PINGs can deliver rapid functional recovery.

**Conclusions:** Axons remain present in *clinically relevant numbers* at the distal ends of PINGs after elevation and unfurling. A decrease in axon counts after elevation may relate to ischemia in the distal PING immediately after elevation. Preliminary functional results show PINGs are capable of delivering *early functional recovery*.

## QS2

### Outcomes Of Pediatric Dynamic Facial Reanimation After Two Decades

**Kevin J. Zuo, MD, MASc<sup>1</sup>, Martina Heinelt, BESC<sup>2</sup>, Emily Ho, PhD, OT Reg(Ont)<sup>1</sup>, Gregory Borschel, MD<sup>3</sup>, Ronald Zuker, MD<sup>1</sup>.**

<sup>1</sup>University of Toronto, Toronto, ON, Canada, <sup>2</sup>Queen's University, Kingston, ON, Canada, <sup>3</sup>Indiana University School of Medicine, Indianapolis, IN, USA.

**Purpose:** Pediatric facial paralysis has substantial functional consequences in a growing child including impaired quality of life. Microvascular facial reanimation is the gold standard for smile reconstruction; however, quantitative data are lacking regarding long-term outcomes, particularly beyond 10 years. The primary objective of this study was to evaluate the long-term surgical and patient-reported outcomes after dynamic reconstruction of unilateral facial paralysis in childhood.

**Methods:** A cross-sectional study was performed of patients in our institutional facial paralysis database (1978-2008) who underwent dynamic reconstruction of unilateral facial paralysis

20 or more years ago. All patients were treated as children with a staged cross face nerve graft and free functioning muscle transfer. Frontal facial photographs in repose and maximal smile prior to surgery, within 2 years post-surgery, and at long term follow-up were analyzed using the MEEI Face-Gram software for commissure excursion. Patient-reported outcomes were obtained using the FaCE Scale for subjective facial impairment and disability, as well as the FACE-Q Satisfaction with Outcome and FACE-Q Social Function scales. Results are reported as median [IQR] and non-parametric statistical analysis was performed with alpha of 0.05.

**Results:** Eleven patients were included with long term follow-up of 23.7 [5.6] years (6 females, 5 males; 5 congenital, 6 acquired; age at surgery 7.3 [6.3] years). For surgical quantitative measures, commissure excursion significantly improved from prior to surgery (-1.3 [7.4] mm) compared to follow up within 2 years post-surgery (7.0 [1.7] mm) ( $p<0.05$ ) and from prior to surgery compared to long term follow-up (8.3 [4.9] mm) ( $p<0.001$ ). There was no statistically significant difference in commissure excursion within 2 years post-surgery and at long term follow-up ( $p>0.05$ ). For patient-reported outcomes, median FaCE Scale scores showed good function for social function (81/100), oral function (88/100), facial comfort (92/100), and overall score (75/100). On the FACE-Q Satisfaction with Outcome scale, 10/11 respondents somewhat agreed or definitely agreed with the statement, "I am pleased with the result." On the FACE-Q Social Function scale, 10/11 respondents somewhat agreed or definitely agreed with the statements, "I make a good first impression" and "I feel confident when I participate in group situations."

**Conclusion:** Dynamic reconstruction of unilateral facial paralysis in young children improves commissure excursion that is maintained at long-term follow up. As adults, these patients report a high level of satisfaction and social functioning with their smile reconstruction.

## QS3

### The Ideal Match: Optimizing Partial Face Transplants In Terms Of Skin Tone Discrepancies

**Pooja S. Yesantharao, MS, Jordan Garcia, MD, Carisa M. Cooney, MPH, Damon Cooney, MD PhD**

**Johns Hopkins Medicine, Baltimore, MD, USA.**