3. Agarwal S, Agarwal S, Neumayer L, Agarwal JP. Therapeutic nipple-sparing mastectomy: trends based on a national cancer database. American journal of surgery. 2014;208(1):93–8.
4. McLaughlin SA. Surgical management of the breast: breast conservation therapy and mastectomy. The Surgical clinics of North America. 2013;93(2):411–28.
5. 114th United States Congress. Breast Cancer Patient Education Act of 2015 USA [cited 2016 06/22/2016]. Available from: https://www.congress.gov/bill/114th-congress/senate-bill/1192/text.

RESEARCH & TECHNOLOGY SESSION 3

Cervical Neck Injury Among Plastic Surgeons

Chad Teven, MD; Patrick Reavey, MD, MS; David H. Song, MD, MBA, FACS

INTRODUCTION: Physician health can impact both patient safety and physician quality of life. Many surgeons complain of neck pain and injury; however, there is little research formally addressing this topic. The purpose of this study is to estimate the prevalence of cervical neck injuries among plastic surgeons and to determine their functional impact.

MATERIALS AND METHODS: A 25-question self-assessment tool was administered to plastic surgeons at our institution via email in the pilot phase of the study. Questionnaires were developed using SurveyMonkey (surveymonkey.com). Data were analyzed to quantify injuries and identify associated factors.

RESULTS: Eleven of thirteen (85%) plastic surgeons responded to the survey. Nine (82%) respondents were male. 45% were between the ages of 35–44, 27% between 45–54, 18% between 55–64, and 9% between 65–74. Ten (91%) of eleven respondents reported significant neck pain or injury as a result of their occupation. Specific injuries included strain of neck musculature (n=7), cervical root or disc pain (n=3), disc herniation (n=2), radiculopathy (n=2), and neck spasm (n=1). Cervical neck injury was commonplace despite variation in workplace factors in the pilot phase of the study (e.g., years in practice, time spent in the operating room, time spent using surgical loupes, operating posture). A significant number of respondents reported that injuries had a moderate to severe impact on performance in the operating room (37.5%), overall job satisfaction (50%), and home life satisfaction (37.5%). Of note, greater than 60% of respondents reported at least daily pain related to their neck injury. The majority of injured surgeons (62.5%) were unaware of institutional resources to support their recovery.

CONCLUSION: This pilot survey clearly demonstrates a significant problem with occupational neck injuries among plastic surgeons and that these injuries significantly impact performance in the operating room as well as home and work life. The next phase of this study, currently in progress, is to survey members of the American Society of Plastic Surgeons to better understand the impact of neck injuries in our field and to identify prevention strategies. We believe that with a larger number of respondents, specific workplace factors (e.g., loupe usage, cervical neck exercise/stretching) will prove harmful or protective with respect to cervical neck injury within our specialty.

DISCLOSURE/FINANCIAL SUPPORT: The authors have no commercial associations or financial disclosures that might pose or create a conflict of interest with information presented in this synopsis.

REFERENCES:
1. Rohrich RJ. Why I hate the headlight…and other ways to protect your cervical spine. Plast Reconstr Surg. 2001;107:1037–8.

Impact of Observer Cultural Background On the Visual Processing of Cleft Lip and Other Forms of Facial Difference Facial Deformities

Thanapoom Boonipat, BS; Tiffany Brazile, BA; Oliver Darwish; Philip Montana, BA; Kevin Fleming, PhD; Mitchell Stotland, MD

INTRODUCTION: Facial difference affects quality of life, and evidence suggests that social bias and stigmatization often persist even after the provision of appropriate facial reconstruction. In order to investigate the impact of observer cultural background on the visual processing of cleft lip and other facial deformities, we employed eye-tracking technology.

PURPOSE: To measure the impact of culture on observer eye-tracking patterns of faces with cleft lip and other deformities. This information may better inform surgeons’ conversations with their patients by improving understanding of
how faces are reflexively interpreted by others. This knowledge may also help focus surgical reconstructive priorities.

METHODS: 59 experimental and 59 control facial images were obtained from the senior author’s practice. Experimental images included the following diagnoses (15 cleft lip, 15 facial aging, 12 ear deformity, 7 facial lesion, 6 HIV lipo- dystrophy, 3 facial asymmetry, 2 nasal deformity). Twenty standardized lookzone regions were mapped onto each facial image. 170 adult subject observers were recruited in two locations (107 in USA and 63 in Thailand) and asked to observe a slideshow of images while a digital infrared eye-tracking camera continuously recorded their eye movements.

OUTCOMES MEASURED: The total number of eye fixations within the different lookzone regions was recorded. Factorial ANOVA analysis was performed to determine significance of gaze pattern differences between groups.

RESULTS: The following observations were statistically significant at p<0.01 level. Compared to when looking at age-matched control images:

(i) subjects in both Thailand and the USA preferentially fixated on the periorbital regions of the face
(ii) Thai subjects fixated relatively more on lower facial regions while American subjects fixated preferentially on upper facial regions
(iii) Both Thai and the USA subjects paid significantly greater attention to the regions of the affected upper and lower lip of images with cleft deformity, and the auricular region of images with ear deformity.
(iv) Within this sample, statistically significant differences in gaze pattern were not detected for the other facial deformities considered.

CONCLUSIONS: Western and Southeast Asian populations preferentially inspect the periorbital region during early visual processing of a face, and are similarly drawn to regions of difference when observing cleft lip or ear deformity. Southeast Asians focus greater attention on the lower facial region while Westerners focus more on the upper/periorbital facial region.

DISCLOSURE/FINANCIAL SUPPORT: No financial support. None of the authors have any financial interest in any of the products, devices, or drugs mentioned in this manuscript.

REFERENCES:
1. Berger Z, Dalton L. Coping with a cleft: Psychosocial adjustment of adolescents with a cleft lip and palate and their parents. Cleft Palate Craniofacial J. 48:435–443 Dec 2009
2. Blais C, Jack RE, Scheepers C, Fiset D, Caldara R Culture Shapes How We Look at Faces. PLoS ONE 3(8): e3022 2008
3. Eyetellect GazeTracker™, Charlottesville, VA. EyeTech TM4 Digital System, Mesa, AZ.

The Influence of Age and Facial Image Attractiveness on Pupillary Response

Thanapoom Boonipat, BS; Tiffany Brazile, BA; Oliver Darwish; Philip Montana, BA, Kevin Fleming, PhD; Mitchell Stotland, MD

INTRODUCTION: Facial difference affects quality of life, and ample evidence suggests that social bias and stigmatization often persist even after the provision of high-quality facial reconstruction.1 Because emotional arousal is reflected in the magnitude of pupillary dilatation,2–4 we have investigated the influence of both facial image attractiveness and observer age on observer pupillary response. We have also secondarily examined the related effect of facial age (of image, including a subset of images of patients with cleft lip) and cultural background (observer) on attractiveness rating.

PURPOSE: Our aim is to study the visual markers that lead to differential perception of patients with congenital or acquired facial difference by examining the early stages of visual processing. Here we examine the influence of age and attractiveness on autonomic reaction as manifested by pupillary response. This information may better inform surgeons’ conversations with patients by improving their understanding of how faces are reflexively interpreted by others.

METHODS: 118 experimental and 79 control facial images were obtained from the senior author’s practice.

Experimental images included: 29 cleft lip, 22 facial aging, 18 facial lesion, 16 ear deformity, 14 HIV lipo- dystrophy, 11 nasal deformity, 6 dermatochalasis. 481 subjects rated the images for attractiveness (40 ratings/image). Twenty lookzone regions were mapped onto each facial image. A separate group of 265 subjects observed a randomly chosen subset of 40 images while an infrared eye-tracking camera recorded their pupillary response. Factorial ANOVA analysis was performed to determine significance of differences between groups.

OUTCOMES MEASURED: Image attractiveness was rated on a 1–7 Likert scale.