ABSTRACT BOOK AND DISCLOSURES

AAFPRS Annual Meeting
October 26-28, 2017
Phoenix, AZ

Meeting Director: Phillip R. Langsdon, MD
Program Co-chairs: Louis M. DeJoseph, MD and Jaimie DeRosa, MD

Educational and Research Foundation for the American Academy of Facial Plastic and Reconstructive Surgery
ACCREDITATION AND CREDIT DESIGNATION
The Educational and Research Foundation for the American Academy of Facial Plastic and Reconstructive Surgery is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The AAFPRS Foundation designates this live activity for 25.5 AMA PRA Category One Credits™. Physicians should claim credit commensurate with the extent of their participation in the activity.

EVALUATION AND CME CREDITS
The AAFPRS Foundation’s LEARN (Lifelong Educational and Research Network) allows you to capture meeting evaluation responses and award CME credits on line at www.aafprs-learn.org.

Please note that in order to access your personal LEARN account, you will need to know your AAFPRS log on ID and password. If you do not know your current AAFPRS ID and password, please see Karen Sloat at the registration area and she will provide you with the necessary information to complete your evaluation and claim your CME credits. Knowing this information ahead of time will avoid delay in obtaining your credits on-site.

LEARNING OBJECTIVES
At the conclusion of the general sessions, participants should be able to:
1. Compare and contrast surgical techniques and approaches across the national and international spectrum of facial plastic and reconstructive surgery.
2. Review and apply state of the art decision making tools when addressing surgical and non surgical dilemmas in patient care.
3. Assess new techniques and technologies that could advance the surgical and non-surgical care of your patients.
4. Develop or improve management plan for your new or existing practice that enhances both patient care and practice productivity.
5. Consider new research questions and/or collaborations.
6. Identify, avoid and treat complications, when necessary.

TARGET AUDIENCE
The meeting is offered for continuing medical education of medical students, residents, fellows, and practicing physicians (MDs and DOs) in the field of facial plastic and reconstructive surgery. The program is for physicians with all levels of experience and covers aesthetic, reconstructive, and congenital issues relevant to this specialty.

The AAFPRS Foundation would like to thank the following companies for their educational support to the 2017 AAFPRS Annual Meeting:
Galderma Laboratories
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Thermi Aesthetics
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The AAFPRS Foundation would like to thank the following companies for their in-kind support to the 2017 AAFPRS Annual Meeting:
Galderma Laboratories - disposable products
Merz Aesthetics - disposable products
Allergan - disposable products
Thermi Aesthetics - disposable products
Anthony Products/GioPelle - durable equipment

CONTACT
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Disclaimer
Registrants for this course understand that medical and scientific knowledge is constantly evolving and that the views and techniques of the instructors are their own and may reflect innovations and opinions not universally shared. The views and techniques of the instructors are not necessarily those of the Academy or its Foundation but are presented in this forum to advance scientific and medical education. Registrants waive any claim against the Academy or its Foundation arising out of information presented in this course. Registrants also understand that operating rooms and health-care facilities present inherent dangers. Registrants waive any claim against the Academy or Foundation for injury or other damage resulting in any way from course participation. This educational program is not designed for certification purposes. Neither the AAFPRS nor its Foundation provides certification of proficiency for those attending.
Unless noted as off-site, all committee and Board meetings, educational sessions, exhibitions, and social events will be held at the Sheraton Grand Phoenix Hotel (the rooms are noted herein). All session rooms are on the second level of the hotel; registration and the Exhibit Hall are on the third level.

WEDNESDAY, OCTOBER 25, 2017
6:30am-2:30pm Committee Meetings (Ahwatukee A/B; Laveen A/B; and South Mountain; see Committee List for specific time and location)
8:55am-5:45pm Young Physicians Forum (Camelback)
3:00pm-7:00pm Registration (Phoenix Ballroom Foyer)
3:00pm-9:30pm Board Meetings (South Mountain)

THURSDAY, OCTOBER 26, 2017
6:00am-6:00pm Registration (Phoenix Ballroom Foyer)
6:30am-7:30am Satellite Breakfast Symposium (Encanto A)
7:20am-12:45pm Rhinoplasty Main Session
10:30am O Message to the Membership
10:40am O Outgoing President’s Address
10:50am O John Conley Lectureship (Valley of the Sun Ballroom)
8:00am-12:00pm OFPSA Program (Deer Valley)
9:30am-4:30pm Exhibit Hall Open (Phoenix Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:30pm-1:30pm Fellowship Directors Lunch (Ahwatukee)
1:45pm-5:30pm Rhinoplasty Main Session (Valley of the Sun Ballroom)
1:45pm-5:30pm Aging Face Breakout (Encanto A)
1:45pm-5:30pm Facial Reconstruction Breakout (Encanto B)
1:45pm-6:30pm Practice Management Breakout (Deer Valley)
1:45pm-6:30pm Interesting Panels, Presentations, and Abstracts Breakout (Camelback)
8:00am-12:30pm OFPSA (Deer Valley)
9:30am-4:30pm Exhibit Hall Open (Phoenix Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:05pm O Gene Tardy Scholar (Valley of the Sun Ballroom)
8:00am-12:30pm OFPSA Program (Deer Valley)
9:30am-4:30pm Exhibit Hall Open (Phoenix Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:05pm O Gene Tardy Scholar (Valley of the Sun Ballroom)

FRIDAY, OCTOBER 27, 2017
6:30am-6:00pm Registration (Phoenix Ballroom Foyer)
6:30am-7:30am Satellite Breakfast Symposium (Encanto A)
7:20am-12:45pm Aging Face Main Session
10:30am O ABFPRS Awards
10:45am O Jack Anderson Lectureship (Valley of the Sun Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:30pm-1:30pm Women in Facial Plastic Surgery Luncheon (Ahwatukee)
1:45pm-6:30pm Board Meetings (South Mountain)
1:45pm-6:30pm Practice Management Breakout (Ahwatukee)
1:45pm-6:30pm Facial Reconstruction Breakout (Encanto A)
1:45pm-6:30pm Rhinoplasty Breakout (Encanto B)
1:45pm-6:30pm O Incoming President’s Address
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:05pm O Gene Tardy Scholar (Valley of the Sun Ballroom)
8:00am-12:30pm OFPSA Program (Deer Valley)
9:30am-4:30pm Exhibit Hall Open (Phoenix Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:05pm O Gene Tardy Scholar (Valley of the Sun Ballroom)
8:00am-12:30pm OFPSA Program (Deer Valley)
9:30am-4:30pm Exhibit Hall Open (Phoenix Ballroom)
12:45pm-1:45pm Lunch in the Exhibit Hall (Phoenix Ballroom)
12:05pm O Gene Tardy Scholar (Valley of the Sun Ballroom)

SATURDAY, OCTOBER 28, 2017
6:30am-6:00pm Registration (Phoenix Ballroom Foyer)
6:30am-7:30am Satellite Breakfast Symposium (Encanto A)
7:30am-12:45pm Minimally Invasive and Emerging Trends & Technology Main Session
11:35am O Research and Awards Presentations
6:45pm-8:45pm Young Physicians Event (Paradise Valley)
7:00pm-10:00pm Founders Club Dinner (Off-site)
The Farm at South Mountain
1887 Luncheon (Ahwatukee)
5:30pm-6:45pm Welcome Reception (Phoenix Ballroom)
6:45pm-8:45pm CME Event: Live Injection Course (Paradise Valley)
7:30pm-10:00pm Past Presidents Dinner (Valley Overlook, Fourth Level)
1:45pm-5:30pm Microvascular Workshop Breakout (Camelback)
1:30pm-5:45pm Practice Management Breakout (Deer Valley)
1:30pm-5:45pm Minimally Invasive and Emerging Trends & Technology Breakout (Valley of the Sun)
6:30pm Meeting Adjourned
Manoj Abraham, MD, New York Medical College, Poughkeepsie, NY*

Peter A. Adamson, OOnt, MD, FRCSC, Professor and Head, Division of Facial Plastic and Reconstructive Surgery, Department of Otolaryngology-Head and Neck Surgery, University of Toronto, Ontario, Canada (Provides financial support for my humanitarian foundation, Face the Future Charitable donation: Allergan Canada)

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Roger Allcroft, MD, Northampton, MA*

Kaete Archer, MD, Archer Facial Plastic Surgery, Private Practice, Melbourne, FL*

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Demetri Arnaoutakis, MD, University of Texas Southwestern Medical Center, Dallas, TX*

Jamil Asaria, MD, University of Toronto, ON Canada (Consultant, Speaker's Bureau, Honorarium: Allergan Inc.; Consultant, Speaker's Bureau, Honorarium: Galderma Inc.; Consultant, Speaker's Bureau, Honorarium: Merz GmbH & Co.)

Babak Azizzadeh, MD, Beverly Hills, CA (Editorial Advisory: Medscape; Royalty: Elsevier; Stock Purchase, Stock options: Myoscience; Stock Ownership: Revance; Grant, Research Grant: Ulthera, Inc.; Grant, Research Grant: Checkpoint, Inc.)

Prof. Sameerali Bafaqeeh, MD, King Saud University, Riyadh, Kingdom of Saudi Arabia*

Katya Bailor, MD, Vero Beach, FL*

Caroline A. Banks, Massachusetts Eye & Ear Infirmary, Boston, MA*

Anthony Bared, MD, Miami, FL, MD*

José E Barrera, MD, Clinical Professor, Uniformed services university, Washington DC, San Antonio, TX (Speaker’s Bureau, Research Support, Consulting Fees, Research Grant: Spirox , LLC)

Rami K. Batniji, MD, Newport Beach, CA (Consulting Fees, Honorarium, Consultant, Speaker’s Bureau: Allergan)+

Robert Baxter, Miami, FL (Owner: Surgeon’s Advisor; Owner: Aesthetic Reviews)#

Mark M. Beaty, MD, Atlanta, GA (Speaker’s Bureau, Consultant, Honorarium, Materials: Syneron/Candela; Consultant, Honorarium, Materials: Zeltiq; Speaker’s Bureau, Materials: Drip Fusion LLC; Aesthetics, Research Support, Honorarium: Rohrer)

Stuart H. Bentkover, MD, Associate in Otolaryngology, UMass Medical School, Worcester, MA*

Prof. Dr. Alexander Berghaus, MD, Ludwig-Maximillian-University, Munich, Germany (Consultant, Dividends/Fees: Karl Storz Germany; Consultant, Dividends/Fees: Spiggle & Theis Germany)

Prabhat Bhma MD, MPH, Honolulu, HI (Owner: PBhama Photography, LLC; Member, Materials: Nikon Professional Services)

Jason D. Bloom, MD, University of Pennsylvania, Philadelphia, PA (Speaker’s Bureau, Research Support, Consultant, Trainer, Consulting Fees, Honorarium: Allergan; Speaker’s Bureau, Research Support, Consultant, Trainer, Consulting Fees, Honorarium: Galderma; Research Support, Consultant, Speaker’s Bureau Consulting Fees, Honorarium: Medz; Consultant, Speaker’s Bureau, Consulting Fees, Honorarium: ThermiAesthetics; Consultant, Stock Purchase, Consulting Fees, Stock options: Cearna, Speaker’s Bureau, Consultant, Consulting Fees, Honorarium: InMode)

Kofi Boahene, MD, Johns Hopkins, Baltimore, MD*

Tara E. Brennan, MD, Assistant Professor, Oto-HNS, FPRS, University of New Mexico, Albuquerque, NM*

Edward D. Buckingham, MD, Austin, TX*

Jordan Cain, MD, Frisco, TX**

Andrew C. Campbell, MD, Mequon, WI (Speaker’s Bureau, Honorarium: Allergan; Speaker’s Bureau, Honorarium: Sciton; Research Support, Research Grant: Ulthera; Research Support, Research Grant: Revance)

Ronald J. Caniglia, MD, Scottsdale, AZ*

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Paul J. Carniol, MD, Clinical Professor, Department of Otolaryngology, Rutgers New Jersey Medical School, Summit, NJ (Material: Carniol Investments)

Mike Carron, MD, Wayne State University, Detroit, MI (Speaker: Paradigm Medical; Speaker: Cosmetic Bootcamp; Taught Course: Micro Air)

Rich Castellano, MD, Tampa, FL (Owner, Salary: ImageLift.com; Owner, Salary: PracticeProfitabilityMD.com; Speaker’s Bureau, Consultant, Consulting Fees, Honorarium: Suneva Medical; Consultant, Consulting Fees: Ideal Image; Owner, Salary: NonVerbal Pro LLC)

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Roxana Cobo, MD, Private Practice, Cali, Columbia*

Jody Comstock, MD, Owner/Founder Skin Spectrum, Tucson, AZ (Speaker's Bureau, Consultant, Consulting Fees, Honorarium: Allergan; Consultant, Speaker's Bureau, Consulting Fees, Honorarium: Galderma; Consultant, Consulting Fees: SkinBetter Science; Consultant, Stock Purchase, Stock options: ThermiRF; Speaker's Bureau, Consulting Fees: Eclipse Medical)

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Thomas Couture, Founder & Executive Director of Business Development, Crystal Clear Digital Marketing, Orlando, FL (Employee: Crystal Clear Digital Marketing)#

Candace Crowe, Founder & CEO, Candace Crowe Design, Orlando, FL (Salary, Owner: Candace Crowe Design)#

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Miriam P. Cummings, MD, Creighton University and Mayo Clinic Scottsdale, Phoenix, AZ*

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Louis M. DeJoseph, MD, Premier Image Cosmetic and Laser Surgery, Atlanta, GA (Speaker's Bureau, Honorarium: Allergan; Speaker's Bureau, Honorarium: Merz; Speaker's Bureau, Honorarium: Galderma)+

Jaimie DeRosa, MD, Boston, MA*+

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Alexander S. Donath, MD, Cincinnati, OH (Speaker's Bureau, Honorarium: Galderma; Honorarium, Speaker's Bureau: Allergan)

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Geoffrey R. Ferril, MD, University of Colorado School of Medicine, Aurora, CO (My wife is an employee, My wife is on salary: Stryker)

Drew Fine, MBA, Trophy Club, TX (Employee: Galderma)#

Inessa Fishman, MD, Atlanta, GA*#

Dana Fox, University of Washington, Seattle, WA (Consultant, Consulting Fees: Your Strategic Edge; Consultant, Consulting Fees: Sciton Lasers)#

M. Sean Freeman, MD, Charlotte, NC*

Oren Friedman, MD, University of Pennsylvania, Philadelphia, PA*

Michael A. Fritz, MD, Cleveland Clinic, Cleveland, Ohio*

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Brian Gawley, MD, Private Practice, Scottsdale Arizona (Speaker's Bureau, Honorarium: Allergan)

Frank G. Garritano, MD, Permanente Medical Group, San Leandro, CA*#

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SPEAKERS AND DISCLOSURES

Sciences Center, New Orleans, LA*

Neil A. Gordon, MD, Yale University, New Haven, CT*

Timothy M. Greco, MD, University of Pennsylvania, Bala Cynwyd, PA (Consultant, Speaker’s Bureau, Honorarium: Allergan; Consultant, Speaker’s Bureau, Honorarium: Merz; Consultant, Speaker’s Bureau, Honorarium: Galderma)

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Yael Halaas, MD, Albert Einstein College of Medicine, Bronx, NY (Speaker’s Bureau, Stock options, Honorarium: Thermi; Consultant, Honorarium: Allergan; Speaker’s Bureau, Honorarium: SmartGraft)

Mark Hamilton, MD, Indiana University, Indianapolis, IN (Honorarium, Speaker’s Bureau: Allergan)

Grant S. Hamilton, III, MD, Mayo Clinic, Rochester, MN (Consulting Fees, Consultant: SPIROX)

Matthew Hanasono, MD, University of Texas, MD Anderson Cancer Center, Houston, TX*

Ron Hartley, CAC, University of Alberta, Salt Lake City, Utah (Salary, Employee: Solutionreach)#

Richard Hayden, MD, Mayo Clinic, Arizona, Phoenix, AZ*

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Laura Hetzler, MD, Associate Professor and Program Director, Louisiana State University Health Sciences Center, New Orleans, LA*

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Jamie Hilliard, Sr., Allergan Practice Consultant, Scottsdale, AZ (Stock Purchase, Salary, Material: Allergan)#

Todd Christopher Hobgood, MD, Scottsdale, AZ, (Speaker’s Bureau, Honorarium, Materials: Allergan)+

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Rick Jaggi, MD, FRCSC, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*

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Freedom Johnson, MD, Assistant Professor, Case Western Reserve University, Cleveland, OH*

Nathan D. Johnson MD, Meridian Plastic Surgeons, Indianapolis, IN*

Lamont R. Jones, MD, MBA, Henry Ford Health System, Detroit, MI (Honorarium, Speaker’s Bureau: AO CMF)
SPEAKERS AND DISCLOSURES

J. Randall Jordan, MD, University of Mississippi Medical Center, Jackson, MS (Consultant: Matrix Surgical)

John H. Joseph, MD, Director Clinical Testing of Beverly Hills, Beverly Hills, CA (Research Support, Research Grant, Honorarium: Merz; Research Support, Consultant, Research Grant: Endo Pharmaceuticals; Research Support, Research Grant: Allergan; Research Support, Research Grant: Alpheon; Research Support, Consultant, Honorarium, Research Grant: Revance; Research Support, Consultant, Speaker’s Bureau, Honorarium, Research Grant: Galderma)

Jeffrey J. Joseph, MD, Clinical Assistant Professor, Louisiana State University Health Science Center, Lafayette, LA (Salary, Wife is Representative: Astra Zeneca Pharmaceuticals)

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Steve Jurich, CEO, AAFPRS and AAFPRS Foundation, Alexandria, VA*+

Russel Kahmke, MD, Duke University, Durham, NC*

Roush Kalebjian, NP, Palo Alto, CA*#

Jonathan Kaplan, MD, San Francisco, CA (Stock options, Founder/CEO: KP Innovations)#

Kian Karimi MD, Los Angeles, CA (Consultant: CosmoFrance, Inc.; Consultant: NovaThreads, Inc.)

Greg Keller, MD, University of California, Los Angeles, Los Angeles, CA (Ownership Share, Partial Ownership in LLC: Progenitor Biologics; Material, Research Support, Research Grant, Materials: Zimmer; Material, Research Support, Consultant; InMode; Material, Consultant, Research Support, Stock Options: Thermi; Material, Consultant: EndyMed)

Robert M. Kellman, MD, SUNY Upstate Medical University, Syracuse, NY*

Matthew A. Kienstra, MD, Mercy Hospital and Clinics, Springfield University of Missouri, Springfield, MO *

David W. Kim, MD, UCSF, San Francisco, CA*

Haena Kim MD, Walnut Creek, CA**#

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Kun Z. Kim, MD, Atlanta, GA*

Leslie Kim, MD, The Ohio State University Wexner Medical Center, Columbus, Ohio

Sang W. Kim, MD, Private Practice, Syracuse, NY*

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Anita Konka, MD, MPH, Assistant Professor, Facial Plastic & Reconstructive Surgery, University of Pennsylvania, Philadelphia, PA*

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Linda N. Lee, MD, Harvard Otolaryngology-Head and Neck Surgery; Massachusetts Eye and Ear Infirmary, Boston, MA*

Tara Leifer, Internet Marketing Consultant, Ithaca College, New York City, NY (Consultant: ReachLocal)#

Ryan Lehrl, Jupiter, FL (Employee: Red Spot Interactive)#

Kevin Li, MD, Stanford University School of Medicine, Stanford, CA*

Ryan J. Li, MD, Assistant Professor, Head and Neck Surgery/Microvascular Reconstructive Surgery, Oregon Health and Science University, Portland, OR (Honorarium, Consultant: L.E.K. Consulting)

Robert Lindau, MD, Midwest Head and Neck Surgical Oncology, Omaha, NE*

Robin Lindsay, MD, Harvard, Boston, MA*

Garrett D. Locketz, MD, UPenn, Philadelphia, PA*

Sofia Lyford-Pike MD, University of Minnesota, Wayzata, MN*

Corey S. Maas, MD, San Francisco (Grant, Research Support, Consultant, Speaker’s Bureau: ALLERGAN; Grant, Research Support, Speaker’s Bureau: MERZ; Grant, Research Support, Consultant: SYNERON; Consultant: Galderma; Consultant: VALEANT)

Simon J. Madorsky, MD, University of California Irvine, Skin Cancer and Reconstructive Surgery Center, Orange, CA*

Denise Mann, MS, Modern Aesthetics, New York, NY**#

Benjamin C. Marcus, MD, University of Wisconsin, Madison, WI*
# SPEAKERS AND DISCLOSURES

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<th>Name</th>
<th>Affiliation</th>
<th>City, State</th>
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<tr>
<td>Jeff Markey, MD</td>
<td>Oregon Health and Science University, Portland, OR*</td>
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<td>Alireza Mesbahi, MD</td>
<td>MD, Shiraz, Iran*</td>
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<td>Brett A. Miles, DDS, MD</td>
<td>Icahn School of Medicine at Mount Sinai, New York, NY*</td>
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<td>Timothy R. Miller MD</td>
<td>MD, Aliso Viejo, CA*</td>
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<td>Ryan Miller, San Luis Obispo CA</td>
<td>(Consultant: Allergan, Inc.; Consultant: Merz)#</td>
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<td>Harry Mittelman, MD</td>
<td>MD, Mittelman Plastic Surgery, Los Altos, CA*</td>
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<td>Paul Mittermiller, MD</td>
<td>Stanford University, Stanford, CA*</td>
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<td>Amy Mladineo, OFPSA President</td>
<td>Stanford, Palo Alto, CA*#</td>
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<td>Sam P. Most, MD</td>
<td>Stanford University, Stanford, CA (Consultant: Spirox)</td>
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<td>Sami Moubayed, MD</td>
<td>University of Montreal, Montreal, QC*#</td>
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<td>Jeff Moyer, Michigan</td>
<td>Ann Arbor, MI*</td>
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<td>Alex W. Murphey, MD</td>
<td>Medical University of South Carolina, Charleston, SC*</td>
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<td>Nathan Nachlas, MD</td>
<td>Boca Raton, FL*</td>
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(1) An Analysis of Brow Position after Paramedian Forehead Flap
Sameer Alvi, MD, Resident Physician; Sreeya Yalamanchali, MD; Clint Humphrey, MD; and David Kriet, MD
Category: Reconstruction
Core Competencies: Medical Knowledge
Highest Level of Evidence: Level IV - Case series
Learning Objective(s): 1) To understand how paramedian forehead flap can alter brow position
Study Objective(s): The aim of this study was to determine the extent to which performing a paramedian forehead flap alters post-operative brow position.
Design: This was a retrospective cohort study of patients who underwent paramedian forehead flap at our institution from August 2005 to August 2015.
Method: 148 patients were identified as candidates for the study. 43 of these patients had both pre- and post-operative photos available for review. Their photos were analyzed and brow position was determined using a brow elevation ratio at multiple locations on the brow (medial canthus, medial limbus, lateral limbus, and lateral canthus). Patient demographics and operative details were reviewed.
Pre-operative and post-operative medial canthus height ratio (MCHR), medial limbus height ratio (MLHR), lateral limbus height ratio (LLHR) and lateral canthus height ratio (LCHR) were then compared utilizing Wilcoxon Signed Rank tests.
Results: A total of 43 patients were included with a mean age of 63.8 years (SD=13.9). Patients were followed up for an average of 5.8 months (SD=4.4). There was no statistical difference between pre- and post-MCHR (1.0 IQR 0.8–1.3 vs. 1.0 IQR =1.0-1.3, p=0.505) or pre- and post-MLHR (1.1 IQR=1.0-1.4 vs. 1.2 IQR=1.0-1.5, p=0.108). There was, however a statistically significant difference between pre- and post-LLHR (1.2 IQR=1.1-1.4 vs. 1.3 IQR=1.1-1.5, p=0.008) and pre-and post-LCHR (1.1 IQR=1.0-1.3 vs. 1.2 IQR=1.1-1.4, p=0.002). Patients requiring nasal dorsum reconstruction were more likely to have both a greater post-operative LLHR (p=0.023) and LCHR (p=0.011). In addition, patients requiring nasal sidewall reconstruction were also more likely to have a greater post-operative LCHR (p=0.033). No other nasal subunit was directly related to a change in brow position.
Conclusion: We conclude that patients may exhibit subtle changes in brow position after the paramedian forehead flap procedure. Brow changes are more noticeable at the peak and the lateral third of the brow, which can elevate after surgery. Flaps used for nasal dorsum and nasal sidewall reconstruction are more likely to alter brow position. These changes in brow position can be persistent. Patients undergoing the forehead flap procedure should be cautioned about potential changes in brow position.

(2) Artificial Hair Implantation: A Rat Model
Joshua K. Au, MD; Fernando Palma-Diaz, MD; Tara Aghaloo, DDS, MD, PhD & Maie A. St. John, MD, PhD
Category: Emerging Technology, Aging Face, Reconstruction
Core Competencies: Patient Care, Medical Knowledge, Practice-based Learning and Improvement
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): To learn about how artificial hair implantation may offer a promising adjunct for hair restoration.
Study Objective(s): To design and create porous high-density polyethylene (PHDPE) and expanded polytetrafluoroethylene (ePTFE) hair-bearing scaffolds and evaluate the biocompatibility of the scaffolds in a rat model.
Design: Randomized prospective rat animal model.
Method: PHDPE and ePTFE scaffolds with and without hair were implanted in three groups of eight Sprague-Dawley rats. These were randomly selected to be observed to 2, 12 and 24 week primary time periods. A fourth group of ten rats were implanted with all four implants. Four weeks after implantation, implants without hair were implanted percutaneously with two follicular units of artificial hair, observed and sacrificed after another 4 weeks. Sagittal sections of scaffold and skin were fixed in formalin and stained with hematoxylin and eosin and evaluated for degree of fibrovascular invasion and inflammation.
Results: Overall 94.5% (86/91) of the scaffolds were well healed at time of evaluation (2 week-100% (32/32); 12 week 96.3% (26/27); 24 week 87.5% (28/32)); while 85.6% of artificial hair follicular units were intact at time of evaluation (2 week – 93.8% (30/32); 12 week 86.7% (26/30); 24 week 75% (21/28)). Three PHDPE scaffolds from the 24 week primary group extruded during follow up. Two scaffolds (PHDPE with hair; ePTFE with hair) were partially extruded at follow up. Within the delayed implant group 100% (19/19) of the hair implanted scaffolds were well healed with 94.7% (36/38) of the follicular units intact; 100% of the delayed hair implants were well healed with 86.1% (36/38) of the follicular units intact. Upon histological analysis, overall scaffolds with hair were noted to have greater chronic inflammation (p=0.012), and PHDPE was noted to have significantly great fibrovascular integration (p=0.006) compared to ePTFE.
Conclusion: ePTFE and PHDPE hair-bearing scaffolds are well tolerated in a rat model. Progressive loss of artificial hair may be percutaneously enhanced without any significant increase in infection or extrusion.
(3) Comprehensive Analysis of the Safety of a New Range of Injectable Hyaluronic Acid Products for Aesthetic Indications

David Bank, MD; Derek Jones, MD & Cindy Wong, MD
Category: Aging Face
Core Competencies: Medical Knowledge, Patient Care
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these

Learning Objective(s): Evaluate and assess the safety of hyaluronic acid (HA) dermal fillers formulated through XpresHAn TechnologyTM based upon the current evidence. Study Objective(s): It is known that less common adverse events may not be detected in clinical studies because of the number of subjects studied. For injectable hyaluronic acid soft tissue fillers, while the safety and effect are studied in pre-approval registration studies; certain less common adverse events such as late onset nodules have been reported for some products only after the products have been put on the market. Therefore, post-market safety experience from a larger patient population may provide important new information. The new hyaluronic acid (HA-Xpres) range of products consists of five hyaluronic acid (HA) soft tissue fillers formulated through a unique process called XpresHAn TechnologyTM - known as Optimal Balance TechnologyTM (OBT) outside the US. These products have an HA concentration of 20 mg/mL and their distinctive physical properties are obtained by varying the cross-linking degree and particle size. The HA-Xpres injectable gel products are intended for facial tissue augmentation and to add volume to the tissue. They have been available for use in Europe since 2010. An analysis of the post market experience is intended to provide further insight into the safety of these products.

Design: The authors will present a comprehensive assessment on the available data on the safety of these products obtained after product launch, based on a review of published literature and analysis of post-market adverse events reported to the manufacturer since launch. The manufacturer of HA-Xpres has made available the post-market experience is intended to provide further insight into the safety of these products.

Method: Data collection: The safety dataset was compiled from post-market surveillance (PMS) reports of adverse events (AEs) received since the products were launched in 2011, including any cases reported in the literature. A total of 302 PMS case reports were included in the analysis. Available safety data obtained from sponsored clinical studies were also collected and reviewed.

Data analysis: Reporting frequencies for PMS reports were calculated based on the number of units of product sold and on the assumption that 1 unit was used per treatment. AEs classified as related to treatment or as unassessable were considered to be potentially related AEs and were included in the analysis. Potentially related adverse events with similar or associated preferred terms were grouped.

Results: Published and unpublished post market studies on over 2000 patients did not identify any safety concerns. The post-market reporting frequency for potentially related cases was estimated to be 0.033% and cases of nodules were reported at 0.004%. The majority of the cases of nodules had onset within 3 months of treatment and there were very few cases reported with onset after 6 months.

Conclusion: Based on this comprehensive review, it can be concluded that products produced by XpresHAn TechnologyTM have a good and accepted safety profile.

(4) Utilization of Optical Spectroscopy for Detection of Cutaneous Cancer: Pilot Study

David J. Carpenter, B.A.; Mirabelle B. Sajisevi, MD; Nikita Chapurin, M.H.S.; Tracy Cheng, B.S.; Clifford S. Brown, MD; Greg M. Palmer, MD; Russell P. Hall, MD & Charles P. Woodard, MD
Category: Emerging Technology
Core Competencies: Medical Knowledge, Patient Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies

Learning Objectives(s): 1. Test the utility of optical spectroscopy in identification of benign and malignant cutaneous cancers. 2. Provide effect size estimates of optical parameters across benign and malignant cutaneous lesions to guide prospective studies of optical technology.

Study Objective(s): Optical spectroscopy presents a noninvasive alternative to biopsy as a first-line screening tool for suspicious skin lesions. This study examines several optical parameters across malignant and benign tissue types.

Method: This is a prospective single center pilot study

Design: Prospective single center pilot study

Method: This is a prospective pilot trial utilizing the Zenalux IM2 optical spectroscopy device. 21 cutaneous lesions were analyzed from 13 patients (age >18) enrolled from otolaryngology and dermatology clinics. Pre-biopsy probabilities of malignancy were available in 19 patients.

Spectroscopy measurements were recorded for each lesion: 2 at the lesion site, 2 at an adjacent site (internal control), and 1 at the central medial upper extremity. Variables of interest included absolute oxygenated hemoglobin (Hb), Hb saturation, total Hb concentration, and Eumelanin concentration. For each lesion, internal control averages were subtracted from lesion averages to provide delta parameter values, and lesion averages were divided by internal control averages to provide ratio parameter values. All variables were analyzed with respect to the biopsy histology.

Results: Cutaneous lesions obtained included basal cell carcinoma (n=6), squamous cell carcinoma (n=4), actinic keratosis (n=2), benign tissue (n=4), neurofibroma (n=1), and nevus (n=2). Disagreement between pre-biopsy probability of malignancy and histology averaged 29%. Mean values for basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and benign (BN) varied most between
absolute oxygenated Hg delta (BCC: 7.92±22.64; SCC: 2.64±12.89; BN: 17.86±20.30), Hg saturation delta (BCC: -9.15±23.97; SCC: 4.56±28.85; BN: -10.89±32.47), total Hg concentration delta (BCC: 19.73±34.04; SCC: 2.67±18.48; BN: 25.10±37.11). Absolute oxygenated Hb ratios were (BCC: 1.84±1.26; SCC: 2.36±3.32; BN: 4.44±5.07), and total Hg concentration (BCC: 0.61±0.28; SCC: 1.32±0.82; BN: 0.95±0.71).

Conclusion: This is the first pilot trial utilizing optical spectroscopy as a noninvasive method for detection cutaneous lesions. The effect sizes observed across optical parameters for benign and malignant tissue types will guide larger prospective studies of this emerging technology.

(5) A multicenter, open-label, prospective study of cannula injection of small particle hyaluronic acid plus lidocaine for lip augmentation

Raj Chopra, MD; Miles Graivier, MD; Sabrina Fabi, MD; Mark Nestor, MD, PhD; Patricia Meuse, PhD & Jay Mashburn, PhD

Category: Aging Face
Core Competencies: Medical Knowledge, Evidence-based Health Care, Patient Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies

Learning Objective(s): Evaluate clinical research that examines the use a small particle hyaluronic acid gel plus lidocaine in conjunction with a small blunt-tipped cannula for lip augmentation and optimal correction of perioral rhytids.

Study Objective(s): This study was conducted to assess adverse experiences identified with the use of Restylane® Silk (Q-Med AB, Uppsala, Sweden), a small particle, hyaluronic acid gel plus lidocaine (SPHAL), in conjunction with a small blunt-tipped cannula (range 25G-30G) for lip augmentation and optional correction of perioral rhytids.

Design: An open-label, non-comparative 12 week prospective study conducted in 4 U.S. centers evaluated the safety and effectiveness of SPHAL in conjunction with a blunt-tipped cannula. Subjects reported pre-defined, expected post-treatment injection site reactions during first the 2 weeks post-treatment via diary. Secondary assessments at 4 and 12 weeks post-treatment included treating investigator- and subject-reported Global Aesthetic Improvement Scale (GAIS) and treating investigator-reported Medicis Lip Fullness Scale (MLFS).

Results: Sixty subjects aged >23 years (93% women; 88% Caucasian; mean age, 46.5 years), were enrolled. Mean (SD) total volume injected (ie, both lips and optional perioral rhytids) was 2.2 (0.6) mL. Of the 27 treatment emergent adverse events (TEAEs) reported, 21 were assessed as related to the product and/or injection procedure - injection site swelling (13.3%), injection site bruising (6.7%), and injection site pain (1.7%). Related events were typically mild and transient in nature (median duration - 5 days). No serious AEs (SAEs) were reported. Following treatment, clinically significant improvement using the GAIS and MLFS was demonstrated in a vast majority of subjects through study end (GAIS improvement at week 12: investigator-reported, 98%; subject-reported, 84%; MLFS improvement at week 12: investigator-reported, 96%).

Conclusion: SPHAL was well tolerated and effective following injection with a blunt-tipped microcannula. No new safety concerns were identified in the study population.

(6) Incisional biopsy of lacrimal gland during functional blepharoplasty: a case series and literature review

Patrick Cleveland, MD & Sarah Saxon, MD
Category: Aging Face, Blephroplasty
Core Competencies: Patient Care, Medical Knowledge
Highest Level of Evidence: Level IV - Case series

Learning Objectives: Evaluation of the lacrimal gland preoperatively should be part of standard care in patients receiving functional blepharoplasty as upper eyelid fullness and visual field deficit is a common presenting symptom for lacrimal gland masses. To our knowledge, no literature is available to guide indications for incisional biopsy of the lacrimal gland during functional blepharoplasty.

Understanding the differential diagnosis of lacrimal gland masses will aid surgeons in obtaining a relevant history and preoperative workup.

Study Objective: To report two cases where physical exam and intraoperative biopsy were used to identify and diagnose underlying lacrimal gland pathology during blepharoplasty and discuss indications for incisional biopsy of the lacrimal gland.

Design: This is a case series of 2 patients undergoing functional blepharoplasty where pre-operative evaluation revealed lacrimal gland masses biopsied intraoperatively and literature review.

Method: Two patients presented for functional blepharoplasty. Both patients had symptoms of dry eye and upper eyelid fullness. It was determined preoperatively to explore the lacrimal fossa and perform an incisional biopsy if needed. In both cases, the lacrimal gland was enlarged, firm, and discolored; therefore, a biopsy was obtained. The first case was found to have chronic dacryoadenitis related to Sjögren’s syndrome, and the second case was positive for MALT lymphoma in both lacrimal glands.

Results: A review of the literature for "lacrimal gland masses" revealed 135 papers, 19 of which were focused on lacrimal gland pathology. Presenting symptoms included palpable lacrimal fossa fullness, periorbital edema, pain, mechanical blepharoptosis, conjunctival injection, globe dystopia, vision change, lacrimation, decreased extraocular movements, dry eye. The differential diagnosis for lacrimal
masses includes inflammatory disease (27-54%), lymphoproliferative disease (16-20%), benign solid tumors (0-23%), malignant solid tumors (0-21%), Dacryops (5-10%), Normal Tissue (5-10%), and other (1-6%).

Conclusion: Lacrimal gland masses are rare but important pathologic entities that facial plastic surgeons need to be aware of given their proximity to the upper eyelid and the cosmetic deformities they can cause. Palpating for lacrimal gland fullness and taking a thorough history that considers the differential diagnosis of lacrimal masses should be part of the standard work up for blepharoplasty so that underlying pathology is recognized and can be biopsied and treated when appropriate.

(7) Under-appreciated Utility of the Purse String Suture in Head and Neck Skin Cancer Defect Reconstruction
Tolbin Collett, MD; Yuan F. Liu MD; Benjamin Bradford MD; Jin Yang BA; Andrea Smith MD; Farhad Ardeshirpour MD & Jared C. Inman MD
Category: Reconstruction
Core Competencies: Practice-based Learning and Improvement, Patient Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): 1. At the completion of this activity, the participant will appreciate the purse string suture as a simple and reversible maneuver that can dramatically reduce defect size. 2. At the completion of this activity, the participant should know how to implement the purse string suture in the reconstruction of head and neck skin cancer defects and recognize its utility as an adjunct to the reconstructive ladder.
Study Objective(s): To evaluate the utility of the purse string suture as an adjunct to the reconstructive ladder when reconstructing skin cancer defects of the head and neck.
Design: Prospective non-randomized cohort study in a single tertiary academic medical center from January 2016 - June 2016.
Method: This prospective non-randomized cohort included 109 consecutive adult patients with head and neck defects resulting from skin cancer resection. Patients were eligible if they were older than 18 years and able to give informed consent. Patients were excluded if defects required significant repair of deep tissue layers including muscle or bone. The purse string suture was placed in every patient following skin cancer resection. Patients were evaluated before and after suture placement and potential reconstructive methods were recorded.
Results: The purse string suture resulted in a mean defect area reduction of 77.1% (p<0.001) in all patients, and was used in the final reconstruction in 79 (72.5%) patients. The vertex scalp was the only subsite with significantly less reduction in mean surface area (38.4%, p<0.001). After the purse string suture was placed, secondary intention healing and primary closure were used in 63% of patients compared to 30% based on pre-purse string suture assessment. The number of patients requiring adjacent tissue transfer, regional tissue transfer, or free tissue transfer was decreased by 70.6%. Procedures in the operating room would have been relegated to the clinic in 44.0% of patients.
Conclusion: The purse string suture is a reversible maneuver that can dramatically reduce defect size. By initially placing the purse string suture, the surgeon may visualize simpler reconstructive options and potentially change the surgical setting from the operating room to the clinic.

(8) Patient-reported outcomes for paralytic ectropion treated with a single-stage stage tarsal strip canthoplasty and modified tarsoconjunctival flap
Raj Dedhia, MD, UC Davis Medical Center Resident Physician; Travis T. Tollefson MD, MPH; Tsung-yen Hsieh, MD, Resident Physician & Oliver Chin, MD, Resident Physician
Category: Practice Management, Reconstruction, Facial Paralysis, Ectropion
Core Competencies: Patient Care, Medical Knowledge
Highest Level of Evidence: Level IV - Case series
Learning Objective(s): 1. To describe outcomes of patients with paralytic lower-lid ectropion undergoing a novel lower eyelid ectropion treatment with a single-stage tarsal strip canthoplasty and modified Hughes tarsoconjunctival flap. 2. To identify risk factors that are associated with persistent postoperative symptoms after paralytic ectropion repair using this technique.
Study Objective(s): To describe patient-reported symptoms and objective photographic outcomes of patients undergoing single-stage stage tarsal strip canthoplasty and modified tarsoconjunctival flap for paralytic lower-lid ectropion / retraction.
Design: Retrospective descriptive case series at an academic tertiary care center.
Method: After IRB approval, charts were abstracted for patients meeting inclusion criteria, which included: 1) adults undergoing single-stage stage tarsal strip canthoplasty and modified tarsoconjunctival flap for paralytic lower-lid ectropion / retraction.
Results: Fourteen patients (8 M, 6 F) were identified between January 2014 and Dec 2016. The majority of patients had paralysis from facial nerve sacrifice during cancer ablation (93%). The mean time between paralysis and surgical repair of ectropion was 22.3 months. Mean follow-up was 8.7 months (range 3-30 months).
Participants reported symptoms included lagophthalmos (71%), tear lake (28%),
conjunctival injection (21%), scleral show (90%) and punctal eversion (14%). After surgery, patients reported epiphora (36%), dry eyes (7%) and irritation (7%). Photographic and video analysis demonstrated lagophthalmos (14%), tear lake (14%), conjunctival injection (7%), scleral show (0%) and punctal eversion (7%). Preoperative radiation therapy and age over 65 were identified as risk factors for poor symptom response (4/6 of these patients demonstrated no improvement).

Conclusion: Patients treated with a combined tarsal strip canthoplasty and modified tarsoconjunctival flap for paralytic lower-lid ectropion overall demonstrate improvement in their primary ocular symptoms and eyelid appearance. Advanced age and preoperative radiation therapy were identified as risk factors for persistent ocular symptoms.

(9) Orbital and Lid Reconstruction using a Temporoparietal Fascia Flap: A Case Report and Review of the Literature
Dominick Gadaleta, MD; Ryan Heffelfinger, MD & Jacqueline Carrasco, MD
Category: Reconstruction
Core Competencies: Medical Knowledge, Patient Care
Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example
Learning Objective(s): 1) To understand the challenges associated with orbital reconstruction and review the current literature. 2) To describe the successful implementation of a temporoparietal fascia flap for orbital reconstruction.
Study Objective(s): This is a case report that discusses the successful implementation of a temporoparietal fascia flap in a revision orbital reconstruction case.
Design: Case report
Method: Case report and literature review. The patient’s pertinent history, clinical findings, and surgical operation are examined.
Results: The case is of a 54 year old female who presented to a tertiary medical center’s outpatient facial plastics and reconstruction department seeking surgical consultation regarding her right-sided orbital deformity. Patient had a history of retinoblastoma treated with enucleation in 1964. Since that time, she has used an orbital implant. Over the past two years, the patient started having difficulties associated with volume loss and orbital contraction. Multiple dermal fat grafts were attempted without success. On exam, patient is status post right-sided enucleation with evidence of severe contraction of the orbit with foreshortened superior and inferior fornices. At the time of her visit, surgical plans were discussed and she agreed to proceed with reconstruction. She was taken to the operating room by both a facial reconstructive surgeon and an oculoplastic surgeon, and underwent a right-sided temporoparietal fascia flap based off the superficial temporal artery and vein. The flap was tunneled subcutaneously into the right orbit, which was then used for volume augmentation. Buccal mucosa was harvested and grafted to complete her lid reconstruction. She has been seen in the clinic postoperatively and reports satisfaction, both from a function and cosmetic standpoint. Conclusion: Orbital reconstruction remains a challenge for even the most gifted head and neck surgeons. In this article, we describe the challenges associated with such a reconstruction, as well as the successful implementation of a temporoparietal fascia flap to reconstruct an orbital and lid defect.

(10) Investigation of the Optimal Osteotomy Techniques Using a Fibula Free Flap in Mandibular Reconstruction
Hashemi, Sean; Onoue, Ketia; Basa, Krystyne; Rubin, Samuel; Oda, Massafumi; Gould, Ryan; Sakai, Osamu; Salama, Andrew; & Ezzat, Waleed
Category: Reconstruction
Core Competencies: Practice-based Learning and Improvement, Patient Care, Medical Knowledge
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): The osteocutaneous fibula free flap is the workhorse for reconstruction of the mandible. The study hypothesis is that there is a maximum allowable gap distance between osteotomies that enables appropriate bone formation between graft and native mandible. To date, there is no study within the literature that addresses this question. This information will be used to establish guidelines for current and future methods of reconstruction.
Study Objective(s): Establish a gap size that allows for osseous union at osteotomy sites in fibula free flap for mandibular reconstruction.
Design: This is a retrospective chart review of patient data and CT imaging of subjects who underwent fibula free flap reconstruction of the mandible at Boston Medical Center (tertiary academic hospital).
Method: Post-operative computer tomography (CT) scans were evaluated at <90 days post-op and a second scan at >6 months postop to evaluate for gap size and osseous union at free flap osteotomy sites. Image slices are analyzed with natively developed software to assess gap size and healing along the osteotomy sites.
Results: 16 subjects were included in this study. Measurable changes in gap distance are evident on second postoperative scans and osseous healing is radiographically evident at the osteotomy sites. Conclusion: CT imaging can be used to measure gap size and healing at fibula osteotomy sites. The size of the gap can affect the degree of osseous union in fibula free flap reconstruction in the head and neck.
(11) Migration and Liquefaction Necrosis of an Abdominal Dermal Fat Graft Following Parotidectomy: A Delayed Complication

Nikolaus Hjelm, MD, Resident; Akshay Sanan MD & Howard Krein, MD, PHD

Category: Practice Management, Reconstruction
Core Competencies: Medical Knowledge, Practice-based Learning and Improvement
Highest Level of Evidence: Level IV - Case series
Learning Objective(s): At the end of this presentation, participants should be aware of possible long term complications of parotid reconstruction with abdominal dermal fat grafts.

Study Objective(s): To review a case of a migrated abdominal dermal fat graft two years postoperatively.

Design: Case report and literature review.
Method: The case of a 62 year old female who presented with a neck mass two years post operatively from parotid reconstruction with a dermal fat graft. The patient’s pertinent history, clinical findings and radiologic studies are examined.

Results: The patient underwent a right parotidectomy in 2010 for basal adenocarcinoma of the right parotid gland. In February of 2014, the patient was found to have recurrent basal adenocarcinoma of the right parotid gland. The patient then underwent a right radical parotidectomy, right neck dissection, mastoidectomy, and lateral facial nerve decompression. The resulting defect was then reconstructed with an abdominal dermal-fat graft as well as an adjacent tissue rearrangement of the right neck. The patient subsequently underwent adjuvant radiotherapy. In February of 2016, the patient was seen in clinic and her neck exam revealed a right sided soft and ballotable mass that was separate and inferior to the patient’s jaw line. MRI was completed and findings were consistent with migration of the patient’s dermal fat graft from 2014. Needle biopsy of the mass revealed cystic contents with active inflammation. The patient subsequently went to the operating room for removal of the neck mass. Pathology was consistent with fibroadipose tissue.

Conclusion: This is the first report of a delayed migration with liquefacton necrosis of an abdominal dermal fat graft following parotidectomy. Prior studies have reported short term complications such as hematoma, infection, adipocyte resorption. Abdominal dermal fat grafts allow for improvement of concave deformities following parotidectomy, however surgeons should be aware of rare but possible delayed complications.

(12) Prevalence of Work-related Musculoskeletal Symptoms among Facial Plastic Surgeons: A National Survey

Thuy-Van Tina Ho, MD, Resident; Shannon Kraft, MD & Kevin Sykes, PhD

Category: Practice Management, Non-Surgical
Core Competencies: Practice-based Learning and Improvement, Systems-based Practice
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): At the conclusion of this presentation, the participants should be able to understand the prevalence and variance of work-related musculoskeletal symptoms as well as awareness of surgical ergonomics principles among facial plastic surgeons.

Study Objective(s): To assess the prevalence of musculoskeletal symptoms and to quantify knowledge of ergonomic principles amongst facial plastic surgeons

Design: Cross-sectional study
Method: Members of the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) were invited to complete an online survey investigating work-related musculoskeletal symptoms and knowledge of ergonomics principles in surgery.

Results: Two hundred and fourteen of 2400 invited AAFPRS members have participated in the survey to date (8.92%). Among the respondents, 72.4% were male (n=155) with a mean age of 41 years old. Forty-two percent of the participants were residents (n=90), whereas 47.7% were fellowship-trained (n=102). Within the cohort, 23 surgeons indicated they routinely performed microvascular reconstruction. Ten of these surgeons endorsed associated musculoskeletal symptoms, with 50% of them experiencing symptoms as early as residency and fellowship (n=5) and the majority of the symptoms occurring half of the time or during most surgery cases (n=6). The neck and shoulders were the most commonly affected muscle groups. Eighty-two participants responded that they performed other non-specific surgical procedures; the majority indicated they experienced musculoskeletal symptoms (n=51), with 18 surgeons symptomatic as early as during residency and fellowship. The neck, shoulder, and back were the most frequently affected muscle groups. Among symptomatic respondents, 58.0% sought therapy (13 respondents required surgery) for their symptoms. Sixty-six percent of participants (n=41) reported no training in ergonomics principles in residency or fellowship, whereas only 24.3% have sought out specific information regarding ergonomic principles in surgery (n=52). This data comes from a larger study that surveyed otolaryngologists across all subspecialties and was presented for another national otolaryngologic organization at the 2017 Combined Otolaryngology Spring Meeting. However, the survey responses from facial plastic surgeons have never been previously analyzed and presented separately.

Conclusion: Awareness of surgical ergonomics principles
among facial plastic surgeons is limited. Although musculoskeletal issues appear to be common, few surgeons seek treatment or information about ergonomics. Further knowledge of the ergonomic burden of the subspecialty profession is beneficial and will yield insight on how to both relieve the physical stress and improve the career span of a facial plastic surgeon.

(13) Hearing and Mortality Outcomes Following Temporal Bone Fractures
Adam Honeybrook, M.B.,B.S.; Aniruddha Patki, M.D; Nikita Chapurin, B.S. & Charles Woodard, M.D
Category: Trauma
Core Competencies: Systems-based Practice, Patient Care
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): To further understand hearing and mortality outcomes following temporal bone fractures. To appreciate audiological follow-up rates in this patient population is low and is an aspect of long-term care that could be improved in the future.
Study Objective(s): To determine hearing and mortality outcomes following temporal bone fractures.
Design: Retrospective analysis
Method: Retrospective chart review was performed of 152 patients diagnosed with a temporal bone fracture presenting to the emergency room at a tertiary care referral center over a 10 year period. Utilizing subjects' previously obtained temporal bone CT scans and audiograms, fractures were classified according to several classification schemes. Correlations between fracture patterns, mortality, and hearing outcomes were analyzed using ÷2 test.
Results: Ossicular chain disruption was seen in 11.8% of patients, and otic capsule violation was seen in 5.9%. 22.7% of patients presented for audiologic follow up. Seventeen patients with conductive hearing loss had air bone gaps of 26±7.5 dB (500 Hz), 27±6.8 dB (1000 Hz), 18±6.2 dB (2000 Hz), and 32±7.7 dB (4000 Hz). Two cases of profound sensorineural hearing loss were associated with otic-capsule violation. No fracture classification scheme was predictive of hearing loss although longitudinal fractures were statistically associated with ossicular chain disruption (p<0.01). Temporal bone fractures in patients over 60 years carried a relative risk of death of 3.15 compared to those under 60 years.
Conclusion: The average magnitude of conductive hearing loss resulting from temporal bone fracture ranged from 18 to 32 dB in this cohort. Classification of fracture type was not predictive of hearing loss, despite the statistical association between ossicular chain disruption and longitudinal fractures. This finding may be due to the low follow-up rates of this patient population. Physicians should make a concerted effort to ensure that audiological monitoring is executed to prevent and manage long-term hearing impairment.

(14) 3D Printing in Facial Plastic and Reconstructive Surgery: A Systematic Review
Tsung-yen Hsieh, MD; Raj Dedhia, MD; Edward B. Strong, MD & Travis Tollefson, MD, MPH,
Category: Emerging Technology
Core Competencies: Practice-based Learning and Improvement, Patient Care, Evidence-based Health Care, Medical Knowledge
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): 1. To evaluate the current literature on the use of 3D printing in facial plastic and reconstructive surgery including its application in surgical training, surgical planning, and biomedical research. 2. To describe the limitations and future implications of 3D printing in facial plastic and reconstructive surgery
Study Objective(s): To systematically review the use of 3D printing in facial plastic and reconstructive surgery, with emphasis on current uses, clinical outcomes, financial analysis, and recent innovations.
Design: Articles were identified from Cochrane library, OvidMedline, PubMed, Embase following PRISMA guidelines.
Method: A systematic review using the PRISMA guidelines of the major databases was conducted by two independent reviewers. Search terms used for this review included 3D printing, 3 dimensional printing, additive manufacturing, rapid prototyping, craniofacial, maxillofacial, mandibular, reconstruction, otolaryngology, plastic surgery, and facial plastic surgery. Additional articles were identified through source citations.
Results: Of the 175 initial studies, the systematic review yielded 76 English articles on 3D printing use in facial plastic and reconstructive surgery. Most articles are proof of concept, case reports or case series. Studies reviewed demonstrated 3D printing applications in surgical planning including accurate anatomic biomodels, surgical cutting guides in reconstruction, and patient specific implants fabrication. 3D printing technology also offers access to safe, reproducible, and high fidelity/patient specific models for surgical training. Emerging research in 3D biomaterial printing have led to the development of biocompatible scaffolds with potential for tissue regeneration in reconstruction cases involving significant tissue absence or loss. Major limitations of utilizing 3D printing technology include time and cost, which may be offset by decreased operating times and collaboration between departments to diffuse in-house printing costs. The current state of the literature shows promising results, but have not yet been validated by large studies or randomized controlled trials. Ultimately, further research and advancements in 3D printing technology should be supported as there is potential to improve resident training, patient care, and surgical outcomes.
Conclusion: As 3D printing technology improves, its use in facial plastic and reconstructive surgery expands as well.
Our systematic review shows the potential to improve trainee education, surgical outcomes, and medical innovation. Time and costs, which had been prohibitive, are decreasing and potential applications are expanding. While qualitative improvements from the technology are described, large prospective outcomes studies and cost-benefit analysis are limited in the literature and need to be further investigated.

(15) Use of Ultrasound Gel in Pork Muscle as an Effective Learning Tool for Neurotoxin Injection
Greg Jefferson C. Ilagan, MD & Joseph Amado C. Galvez, MD
Category: Emerging Technology
Core Competencies: Medical Knowledge, Practice-based Learning and Improvement
Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example
Learning Objective(s): To identify the correct plane in injecting neurotoxins. To use ultrasound gel as an inexpensive learning tool for simulation of neurotoxin injection
Study Objective(s): To clearly identify pork belly muscular plane using ultrasound gel. To determine what appropriate color to use in determining pork muscular plane
Design: Surgical Innovation
Method: Four 5ml syringes with Ultrasound gel has been mixed with commercially available food coloring (McCormick Red, Blue, Green, Yellow). Each syringe was introduced to pieces of pork belly and was injected up to the level of the muscle. Diffusion of colored ultrasound gel was observed.
Results: The muscle was better appreciated with the injected green Ultrasound Gel. There was good uptake and the muscle could be clearly delineated. The red colored ultrasound gel had the least impression on the muscle, as it tends to blend in to its natural color while the yellow colored ultrasound gel gives a weak delineation of the muscular plane. The blue color has a crude impression as it has a smudging effect on the muscular and surrounding planes.
Conclusion: Ultrasound gel has good diffusion in muscle. Ample visualization of the muscle using green ultrasound gel will provide better knowledge as to where the correct plane for neurotoxin injection is. The limitation of this study is that colors were limited to the primary ones. It is encouraged that further investigation of mixture of colors as well as documented trials in cadavers should be done.

(16) IgG4-related disease presenting as a nasolabial fold mass
Joanna Kam; Anna S. Wertz; Camille Brazzle & Lamont R. Jones, MD
Category: Evidence Based Medicine, Non-Surgical
Core Competencies: Medical Knowledge, Patient Care
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): 1. To discuss the presentation of cutaneous IgG4-related disease in the head and neck. 2. To review the clinical, laboratory and histopathologic criteria for IgG4-related disease
Study Objective(s): Our first objective is to review the cutaneous manifestations of IgG4-related disease. We then aim to review the clinical, laboratory and histopathologic criteria for IgG4-related disease.
Design: Systematic review and case report
Method: A systematic search of peer-reviewed articles regarding cutaneous IgG-related disease was performed. A case report of a 50 year old Middle Eastern female with IgG4-related skin disease is provided.
Results: Fifty cases of IgG4-related disease with cutaneous manifestations were identified. The head and neck was found to be the most common site for cutaneous involvement. Papules, plaques, and nodules were the most commonly described cutaneous lesions. On review of laboratory data, the ratio of IgG4 to IgG is greater than 40% and the number of IgG4+ plasma cells per high power field is greater than or equal to 10. On histopathology, fibrosis and lymphoplasmacytic infiltrates are described.
Conclusion: Given that the head and neck is the most common site for IgG4-related skin disease, it is important that otolaryngologists develop a familiarity with this cutaneous condition. We present the case of a 50 year old Middle Eastern female with IgG4-related skin disease who presented with a nasolabial fold mass. We reviewed other cutaneous manifestations of IgG4-related disease. We then reviewed the clinical, laboratory and histopathologic criteria for IgG4-related disease.

(17) Change in skin elasticity after combined radio frequency and electromagnetic treatment
Monica C.Q. Kieu, D.O. & David A.F. Ellis, MD
Category: Non-Surgical
Core Competencies: Medical Knowledge
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): 1. Determine the objective change in skin elasticity after treatment with a combined radio frequency and pulsed electromagnetic field (RF/PEMF) device. 2. Describe patients’ subjective improvement in skin appearance after treatment with RF/PEMF.
Study Objective(s): The primary objective is to measure the quantitative change in elasticity of cheek skin in patients
who have undergone treatment with combined RF and PEMF. Secondary objectives: To determine the improvement of skin appearance following treatment with combined RF and PEMF utilizing a blinded rater. Evaluate the subjective improvement in skin quality and appearance as reported by patients via questionnaires.

Design: Non-randomized, controlled clinical trial

Method: 45 healthy women age 25-80 were included in this study. Treatment of the face with an FDA-approved RF/PEMF device was performed on a weekly basis for a total of 8 weeks. Skin elasticity was measured using a Cutometer prior to start of the treatment protocol, again at week 8, and 12 weeks after the last treatment. Pre- and post-treatment protocol photographs were taken, and improvement in skin appearance was rated using the Fitzpatrick Wrinkle & Elastosis Scale (FWES) by a blinded facial plastic surgeon. Patient-reported outcomes were determined using a Global Aesthetic Improvement Scale (GAIS) and Subject Satisfaction Scale.

Results: There was no statistically significant difference in Cutometer measurements after treatment with the RF/PEMF device at 8 weeks and 20 weeks. However, there was a statistically significant improvement in FWES as determined by the blinded rater using pre- and post-treatment photographs. Patients also reported subjective improvement, and were generally satisfied with the treatment.

Conclusion: Although there was no numerical improvement in skin elasticity as measured by the Cutometer, RF/PEMF treatment can improve subjective skin appearance. Further study is needed to determine long term effects, however this regimen is a noninvasive alternative for patients interested in aesthetic improvement.

(18) Successful replantation of a near complete nasal amputation
Marissa Lafer, MD & Boris Paskhover, MD

Category: Trauma

Core Competencies: Practice-based Learning and Improvement, Medical Knowledge, Patient Care

Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example

Learning Objective(s): To discuss the results of a near complete nasal amputation replantation treated conservatively

Study Objective(s): To assess the effectiveness of a replantation of near complete nasal amputation

Design: Case report

Method: Near complete nasal amputation in a 26M at a university medical center was identified. He sustained partial avulsion of the right lateral nasal wall, complete avulsion of the nasal tip with a horizontal laceration through the tip, near complete avulsion of the right ala, partial avulsion of the left ala and partial amputation of the columella after he was hit in the face with a metal pole. The flap remained partially attached by the columellar pedicle, which itself sustained a superficial laceration. On presentation to the ER, the avulsed flap was noted to be hyperemic and bleeding at the skin edges and so we decided to preserve the flap. 1% lidocaine without epinephrine was used for analgesia, and he was given Unasyn and a tetanus vaccine. The columellar and nasal tip lacerations were repaired first to stabilize the flap’s blood supply. The flap was then reattached with 5-0 vicryl and 5-0 prolene. 5-0 chromic was used to repair the mucosal defects. After the repair was completed, venous congestion was noted, however, no intervention was performed since loosely approximated sutures were used for the mucosal closure to allow for outflow. Antibiotics were continued.

Results: On postoperative day 3 the flap was mildly hyperemic, but was noted to have good capillary refill. The sutures were removed on postoperative day 6. He had significant crusting but no wound breakdown. The replant survived with good cosmetic and functional result with the need for only minor revisions.

Conclusion: Timely repair for near complete nasal amputations should be attempted. The literature is replete with case examples of nasal tip amputations with high likelihood of failure. We found that near complete amputations with signs of venous congestion may not always require intervention, as long as there is a partial vascular pedicle.

(19) MOHS RECONSTRUCTION: IS TIMING A PRIORITY?
Matthew Q. Miller, MD, University of Virginia Resident; Stephen S. Park, MD & J. Jared Christophel, MD, MPH

Category: Evidence Based Medicine, Reconstruction

Core Competencies: Practice-based Learning and Improvement, Patient Care, Evidence-based Health Care

Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these

Learning Objective(s): At the conclusion of this presentation, participants will be able to describe potential predictors of complications in Mohs reconstructive surgery

Study Objective(s): The timing of Mohs reconstructive surgery is influenced by different factors including surgeon and patient schedules, complexity of defect, and operating room availability. Delayed reconstructive surgery can offer benefits such as improved surgical planning, patient counseling & contemplation, and increased blood supply to the cauterized wound bed. It can be unavoidable, especially when the ablative and reconstructive surgeries are performed by separate surgeons. However, recent work suggests that delaying reconstruction by more than two days may increase risk of post-operative complications. We performed this study to review the outcomes of Mohs Micrographic Surgery (MMS) reconstruction with respect to patient- and surgery-specific variables, especially timing of repair.

Design: This was a retrospective, single-institution cohort study from 8/1/2016 to 2/16/2017. No patients had to be excluded for inadequate follow up or incomplete medical records. All patients undergoing Mohs reconstructive
surgery at our institution sign an IRB-approved consent to participate in a research database.
Method: Primary outcome was post-operative complications including hematoma, infection, dehiscence, and partial or full graft or flap loss.
Results: A total of 113 cases were identified over the six-month period. Reconstructions occurred from <24 hours to 22 days after MMS, with 25% delayed greater than 48 hours. Patient-specific variables reviewed included comorbidities, age, smoking status, and use of anticoagulant or antiplatelet medications. Surgery-specific variables analyzed included location and size of defect, time interval between MMS and reconstruction, and method of reconstruction. We used logistic regression models to assess whether these variables were associated with postoperative complications. Defects larger than 3 cm² were associated with increased postoperative complications (OR 3.758, P = .015). This relationship was present in multivariate analysis as well. There were no other statistically significant predictors of postoperative complications.
Conclusion: This retrospective review demonstrates no association between timing of repair and complications, indicating that a delayed repair does NOT increase the risk of infection or flap failure. There was an increased risk of postoperative complication in Mohs reconstruction for defects larger than 3 cm², an association which has been noted before in the literature.

(20) The Role of the Caudal Septum in Nasal Airway Surgery
Mark Mims, MD, Resident member & Grant Gillman, MD
Category: Evidence Based Medicine
Core Competencies: Patient Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): 1. Examine the potential outcomes of endonasal caudal septal surgery. 2. Compare outcomes of endonasal caudal septal surgery to outcomes of patients undergoing endonasal septoplasty without manipulation of the caudal septum
Study Objective(s): Persistent deflections of the caudal septum are a frequent source of "failed" septoplasty and the need for revision surgery. Fear of disrupting or weakening support to the nasal tip and/or dorsum likely results in occasional neglect of the caudal septum in primary septoplasty. This study aims to examine outcomes and complications of septoplasty in patients requiring caudal septal manipulation as compared to those in whom no caudal septal correction was required.
Design: Prospective cohort
Method: Patients undergoing septoplasty with or without turbinate reduction completed a Nasal Obstruction Symptom Evaluation (NOSE) questionnaire and Likert-scale ratings at their pre-operative visit as well as at the 3-month and 6-month post-operative visits. Patients undergoing septoplasty involving manipulation of the caudal septum were compared to those who did not have caudal septum correction to evaluate for statistically significant differences.
Results: 135 patients were included of whom 28 required "minor" manipulation of the caudal septum, 56 required "major" manipulation of the caudal septum, and 51 required no caudal septal correction. Average pre-operative NOSE scores for no caudal septal intervention, minor intervention, and major intervention were 71.5, 71.8, and 72.4 respectively. 3 months post-operatively, the NOSE scores were reduced to 19.6, 17.3, and 14.7 respectively, with 6-month NOSE scores at 21.2, 11.7, and 12.3. Post-operative satisfaction Likert (scored 0-5) between groups were 4.3, 4.5, 4.7 at 3-months and 4.5, 4.4, and 4.7 at 6-months respectively. Complication rates were similar amongst all groups.
Conclusion: When deemed appropriate, and when properly addressed, endonasal correction of caudal septum deflections can be carried out with a high degree of patient satisfaction, success, and low complication rates.

(21) Prevalence of Cosmetic Procedures among Facial Plastic Surgeons
Roxana Moayer, MD; Jordan Sand MD; Vishad Nabili MD & Gregory Keller MD
Category: Practice Management, Ethics, Social Sciences, Societal Trends
Core Competencies: Patient Care, Professionalism, Interpersonal Communications Skills
Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example
Learning Objective(s): To better understand the perception and consumption of cosmetic facial plastic procedures among Facial Plastic Surgeons. To facilitate optimal patient-physician rapport
Study Objective(s): Several studies have evaluated attitudes toward cosmetic plastic surgery among various populations. One population that has yet to be examined is the Facial Plastic Surgeons who perform these procedures. The aim of this study is to begin to characterize the use of cosmetic facial plastic procedures among Facial Plastic Surgeons.
Design: Survey data
Method: A 5-minute, computer survey was designed and sent to the Institutional Review Board at the University of California, Los Angeles. Once IRB approval was received, permission was requested to distribute the survey to the members of the American Academy of Facial Plastic and Reconstructive Surgery via organization listserv. The survey was sent to 1300 members of the AAFPRS in March of 2017. The survey was anonymous and results were recorded as an aggregate of responses, without identifying information.
Results: There were 110 respondents, yielding a response rate of 8.5%. One respondent did not indicate their gender. One respondent did not indicate their age. One respondent did not indicate their region of practice. Four...
respondents did not indicate whether they had any type of surgical cosmetic procedure. One respondent did not indicate whether they had any type of minimally invasive cosmetic procedure. 92% of the respondents were male. Thirty-two percent of respondents have had a surgical cosmetic procedure. Among those who responded that they had surgery, rhinoplasty was most common (29%) followed by liposuction (22%), and upper blepharoplasty (21%) respectively. Seventy-two percent of respondents said that they had a minimally invasive cosmetic procedure. The most common minimally invasive cosmetic procedure among Facial Plastic surgeons who responded affirmative to any type of procedure was neuromodulator injection (44.4%) followed by soft-tissue fillers (22%).

Conclusion: To our knowledge this is the first study to evaluate the prevalence of Facial Plastic Surgery among Board Certified Facial Plastic Surgeons. As Facial Plastic Surgeons we play a critical role in guiding our patient’s through surgical decision-making and perioperative experiences. We feel this study is an important first step in better understanding our own attitudes towards the operations we offer our patients.

(22) Juvéderm Vollure XC Is Safe and Effective for Correcting Nasolabial Folds: Results From a Randomized Controlled Study
Gary Monheit, MD/Dermatologist; Kenneth Beer, MD, FAAD; Pearl E. Grimes, MD, FAAD; Bhushan Hardas, MD, MBA; Vince Lin, PhD & Diane K. Murphy, MBA
Category: Aging Face
Core Competencies: Evidence-based Health Care
Highest Level of Evidence: Level I - High-quality, multi-centered or single-centered, randomized controlled trial
Learning Objective(s): Describe the safety and effectiveness of Juvéderm Vollure XC versus control for the correction of moderate to severe nasolabial folds.
Study Objective(s): To evaluate Juvéderm Vollure XC, a hyaluronic acid gel (17.5 mg/mL) based on the Vycross technology platform, for correction of moderate to severe nasolabial folds (NLFs).
Design: This was a prospective, within-subject–controlled, double-blind study.
Method: Adults (N=123) were randomized to initial/touch-up treatment with Vollure XC in 1 NLF and control (Restylane-L) in the contralateral NLF. Co-primary effectiveness endpoints at month 6 were difference in improvement in mean NLF Severity Scale (NLFSS) score for Vollure XC versus control and NLFSS responder rate (e"1-point improvement vs baseline) for Vollure XC. Other effectiveness endpoints for Vollure XC included subject-assessed Appraisal of Nasolabial Folds (FACE-Q) and investigator-assessed smoothness and natural look. Subjects reported injection site responses (ISRs).
Results: Co-primary effectiveness endpoints were met. Vollure XC was non-inferior to control (NLFSS scores improved by 1.4 with Vollure XC and 1.3 with control) and responder rates with Vollure XC were 93% at 1, 3, and 6 months. The median volume of initial/touch-up was 1.7 mL for both products. Mean FACE-Q score for Vollure XC was e"70 at months 3 and 6 versus 32 at baseline, indicating improvement. When one NLF was rated smoother than the other, the majority (71%) of smoother NLFs had been treated with Vollure XC. From day 3 to month 6, a difference in the natural look of each NLF region was reported in 77%–85% of subjects, with Vollure XC providing a more natural look in twice as many cases as control at all timepoints. Fewer severe ISRs were reported with Vollure XC vs control, particularly firmness (19%, 43%), swelling (17%, 43%), tenderness to touch (17%, 34%), and lumps/bumps (14%, 39%).
Conclusion: Vollure XC demonstrating effectiveness for correcting moderate to severe NLFs in 93% of subjects at the primary time point and was safe and well tolerated.

(23) The Pedicled Levator Labii superioris Alaquae Nasi (PLLAN) flap: a single-stage alternative to PMFF for full-thickness nasal defects
Kevin Moore II, MD; Richard W. Thompson, MD & Timothy Lian, MD, MBA
Category: Reconstruction
Core Competencies: Medical Knowledge
Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example
Learning Objective(s): 1. Define the anatomy of the Pedicled Levator Labii superioris Alaquae Nasi(PLLAN) flap as well as pertinent relationships with important facial structures. 2. Using clinical examples, discuss the utility and advantages of the PLLAN flap as an alternative to the paramedian forehead flap for reconstruction of full-thickness nasal defects.
Design: Anatomical cadaver study, review of literature, and demonstration of clinical examples of use of our flap.
Method: Anatomic dissections of fresh cadaveric specimens, search of PubMed and MeSh database using keywords nasal reconstruction, paramedian forehead flap, levator labii superioris alaquae nasi, and reconstruction of facial defects as well as clinical examples of patients in whom we have used our flap for reconstruction.
Results: From the anatomic dissections, we have determined average distances to the vascular pedicle from the nasal sill and ala. We also examine the typical anatomic relationship of the pedicle and muscle to the orbicularis oris muscle and origin of the pedicle from the superior labial artery and vein, all of which will assist surgeons in utilizing this flap for nasal reconstruction. We also provide a review of relevant literature in the area of reconstruction of facial defects as a background for our discussion.
Conclusion: The Pedicled Levator Labii superioris Alaquae Nasi flap is a highly versatile tool for reconstruction of...
nasal defects, including full-thickness defects. The flap is simple to harvest and can be created in a variety of sizes and shapes. The muscle itself is suitable for use as the internal lining of full-thickness nasal defects due to the fact that the muscle mucosizes over time, obviating the need for mucosal hinge flaps. It has significantly less physical and psychological morbidity than the paramedian forehead flap and serves as a single-stage option for reconstruction.

(24) The Lateral Antebrachial Cutaneous Neurosome Revisited: Maximal Capture for Sensory Flap Reconstruction

Arya W. Namin, MD & Mark A. Varvares, MD
Category: Reconstruction
Core Competencies: Medical Knowledge
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): 1. Understand how the neurosome of the lateral antebrachial cutaneous nerve impacts the harvest of a sensate radial forearm free flap.
Study Objective(s): The radial forearm free flap (RFFF) has become a frequently utilized option in the reconstruction of head and neck defects given its versatility and minimal morbidity. The neurovascular anatomy of the forearm led to the description of the sensate RFFF. The purpose of this article was to review the literature that has illustrated the neurosome of the lateral antebrachial cutaneous nerve (LACN).
Design: Systematic review.
Method: The terms radial forearm free flap, lateral antebrachial cutaneous nerve, neurosome, and sensate flap were searched on PubMed and Web of Science.
Results: Anatomic and physiologic studies have found the LACN to be distributed along the radial aspect of the forearm.
Conclusion: When the decision is made to harvest a sensate RFFF, centering the flap over the radial aspect of forearm will allow for greatest capture of the LACN neurosome.

(25) Intraoperative triamcinolone injection for the prevention of lower lid malposition after transcutaneous lower lid blepharoplasty with SOOF lift

Sarah Novis, MD, Farrior Facial Plastic Surgery, Fellow & Edward H. Farrior, M.D
Category: Aging Face
Core Competencies: Evidence-based Health Care, Medical Knowledge, Practice-based Learning and Improvement
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these
Learning Objective(s): 1. Understand common complications and limitations of transcutaneous lower lid blepharoplasty with SOOF lift. 2. Learn how intraoperative triamcinolone injection can be performed to reduce post-operative lower lid retraction

(26) Integra(TM) Wound Matrix in Nasal Reconstruction; A Powerful New Technique

Scott Owen, MD; Scott Stephan, MD & Russell Ries, MD
Category: Reconstruction
Core Competencies: Patient Care
Highest Level of Evidence: Level IV - Case series
Learning Objective(s): Learners should be able to both identify patients that would benefit from reconstruction with Integra (TM) Wound Matrix, and become familiar enough with the technique to execute it in their practice.
Study Objective(s): Nasal reconstruction poses many challenges to the reconstructive surgeon. By integrating the use of Integra (TM) Wound Matrix into our technique repertoire, we have described a novel technique in a large population of patients requiring reconstruction of nasal defects. This technique has yielded an excellent option for patients with partial thickness nasal defects with wound beds unsuitable for skin grafts or local flaps. This technique is particularly useful when resurfacing partial thickness nasal defects over exposed bone, cartilage, or autologous structural grafts. This technique frequently spares a patient a larger reconstructive procedure such as a regional flap, with excellent aesthetic results.
Design: This is a prospective case series performed on participating patients presenting with nasal defects requiring reconstruction.

Method: Patients presenting to the Facial Plastics Department at Vanderbilt University Medical Center after Mohs micrographic excision of the nose. Patients were offered reconstruction with Integra(TM) Wound Matrix if they presented with partial thickness nasal defects with exposed cartilage or bone in the wound bed, a large area requiring resurfacing, a wound requiring structural grafting, or a defect otherwise indicating reconstruction with a regional flap (paramedian or melolabial) in a poor or unwilling candidate. Reconstruction was performed by first optimizing the wound bed by completing subunit excision, undermining skin edges, and placing any necessary structural cartilage grafts. Integra(TM) was then placed in the wound bed and bolstered in place. After three weeks, the silicon dressing was removed, and the new bed of granulation tissue examined. If viable, a full thickness skin graft was placed over the wound and bolstered in place.

Results: In our case series we demonstrate a new reconstructive method for nasal reconstruction. In our series all patients ultimately obtained excellent aesthetic results.

Conclusion: Integra(TM) wound matrix is a powerful new technique that can be used to obtain excellent aesthetic results in nasal reconstruction. In this presentation we describe this technique applied in multiple different reconstructive scenarios in a large case series. We describe several possible pitfalls and complications, and the technique we have found to achieve the best reconstructive results. This technique is an invaluable addition to the nasal reconstructive surgeon.

(27) Subjective and Objective Facial Dynamics Using Dermal Fillers Formulated for Facial Movement Adaptation

Ivona Percec, MD, PhD; Nowell Solish, MD, FRCPC; Vince Bertucci, MD, FRCPC; Alessandra Nogueira, MD; Ted Wagner, BA

Category: Emerging Technology

Core Competencies: Medical Knowledge, Evidence-based Health Care

Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies

Learning Objective(s): 1. Evaluate clinical research that examines facial dynamics using subjective and objective methods following treatment with dermal fillers

Study Objective(s): The fear of looking unnatural is a well-known concern for patients contemplating dermal aesthetic procedures. Facial dynamics is an increasing area of clinical focus extending beyond 3-D volume restoration, as naturalness of clinical outcomes at rest and with animation may vary. We evaluated the dynamic face using subjective and objective methods following treatment with dermal fillers formulated with physicochemical properties for facial movement adaptation.

Design: This was an interventional, open-label, multicenter study to evaluate the perception of facial expressions following correction of wrinkles and folds in the lower face using HA fillers (20mg/mL with XpresHAn Technology(TM). Thirty Caucasian females (40-65 years) with moderate to severe, bilateral wrinkles in the lower face were treated and followed 4 weeks post-optimal correction. Study visits included Screening (Visit 1), Baseline/Day 1/Treatment (Visit 2), Day 15/Touch-up Treatment (Visit 3), Phone Visit (Visit 4, 15 days after touch-up) and the final visit, Day 42 (Visit 5), approximately 1 month after the Day 15/Touch-up Visit.

Method: Subjective, dynamic assessments were evaluated pre- versus post- expressions in motion (2D videos), using a series of standardized expressions. Facial dynamics were objectively evaluated and quantified using 3-D stereophotogrammetry (Canfield Scientific, Inc), including a younger, untreated Caucasian female cohort (N=20; 25-35 years). Satisfaction of treated subjects was assessed using a 5-point Likert scale.

Results: Subjective facial dynamics revealed naturalness of the lower face in motion to be at least maintained in 100% of subjects (naturalness maintained or enhanced). Collectively, 83.3% of subjects were rated with enhanced attractiveness and looked younger, without compromise in naturalness. Rater agreement was high for individual assessments of attractiveness, youthfulness and naturalness (70.0% – 83.3%). Subject satisfaction ratings were consistent with treating investigator assessment, with post-treatment improvement across all items assessed based on proportions of subject agreement (strongly agree or agree). Highest levels of subject satisfaction (>80%) observed post-treatment pertained to overall facial appearance is pleasing (90.0%); overall facial appearance looking natural (100%); face looking natural when relaxed (96.7%) and when smiling (93.3%), and looking younger than actual age (83.4%). For specific anatomic areas (marionette lines), global dynamic assessment using 3-D stereophotogrammetry showed significantly higher levels of stretch in older (20.1%, pre-treatment) versus younger subjects (17.7%; p<.05), with stretch levels significantly reduced post-treatment (17.9%; p<.05) such that older subjects post-treatment resembled younger subjects.

Conclusion: Dermal fillers formulated with XpresHAn Technology(TM resulted in subjective dynamic assessments characterized by improvements in attractiveness and youthfulness, without compromising naturalness. Objective facial dynamics provided quantitative evidence of stretch levels resembling a younger phenotype, in areas specifically prone to dynamic volumetric effects of facial aging. This work underscores the importance of objective dynamic assessment as the fourth dimension of facial aesthetics.
(28) Perceived Naturalness of Facial Expressions Following Treatment in the Lower Face with Fillers
Wolfgang G Philipp-Dormston, MD; Bernard Schuster, MD & Maurizio Podda, MD, PhD
Category: Aging Face
Core Competencies: Medical Knowledge, Evidence-based Health Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): 1. Evaluate clinical research that examines perceived naturalness of facial expressions in motion in the lower face following treatment with dermal fillers. 2. Apply the most up-to-date evidence-based research to clinical practice.
Study Objective(s): Since most patients desire natural-looking results, evaluation of facial expressions to show that naturalness is maintained after fillers-treatment should be considered. This study was conducted to assess perceived naturalness of facial expressions in motion in the lower face following treatment with XpresHAn TechnologyTM.
Method: Subjects 35–65 years requiring correction of nasolabial folds (NLFs) and at least one other wrinkle or fold in the lower face were enrolled. Effectiveness was assessed 1 month after optimal treatment. Subjects displayed a set of neutral and animated facial expressions captured on both photographs and video recordings. Pre- and post-treatment expressions were compared. Assessments included treating investigator- and subject-reported Global Aesthetic Improvement Scale (GAIS) and Wrinkle Severity Rating Scale (WSRS). In addition, FACE-Q Appraisal of Nasolabial Folds and subject satisfaction were collected. Adverse events and local tolerability were documented throughout the study.
Results: Sixty-three subjects were optimally corrected, i.e. at least 1 grade improvement (reduction) from baseline on the WSRS as assessed by treating investigator. By comparing pre- and post-treatment facial expressions, it can be concluded that naturalness was maintained in e’95% of subjects. Attractiveness was enhanced in 89% of subjects and 97% showed GAIS improvements. Subjects were satisfied with treatment and were significantly less bothered by their NLFs.
Conclusion: Treatment in the lower face was effective and safe. We propose inclusion of facial animations as a means to assess maintenance of naturalness following aesthetic treatments.

(29) The effects of topical yeast protein extract on wound healing in healthy and metabolically compromised mouse models
Neela Rao, MD & Dean Toriumi, MD
Category: Non-Surgical, Evidence Based Medicine
Core Competencies: Patient Care, Medical Knowledge, Evidence-based Health Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
Learning Objective(s): 1. Review the basic principles and potential barriers to wound healing. 2. Explore the role of a novel topical agent in accelerating wound healing.
Study Objective(s): To determine the impact of topical yeast protein extract on wound healing in healthy and metabolically compromised mouse animal models.
Design: The study is a prospective cohort study utilizing a mouse model.
Method: The study included two cohorts: mice with normal wound healing properties and genetically diabetic mice. Each cohort included 36 mice for a total of 72 mice. Mice were anesthetized and two 6mm full thickness wounds were surgically performed on each mouse for a grand total of 184 wounds (72 wound in each cohort). Topical yeast protein, surfactant (vehicle), or no agent (control) was applied to each wound daily. Mice were sacrificed on days 7, 14 and 28 after the wounds were created. The wounds were then histologically analyzed using a variety of techniques. The hematoxylin and eosin (H&E) stain allowed measurement of epidermal thickness. Vascularity and collagen content were assessed using a trichrome (Mason’s) stain. Immunohistochemistry was performed to measure heatshock protein 47 (HSP-47), which is a fibroblast marker. Percentage of wound healing was analyzed by measuring the gap in epithelial wound edges over the initial diameter of the wound. Each mouse had two 6mm full thickness skin wounds surgically performed in accordance with the Animal Care Committee guidelines. A topical yeast protein, surfactant (vehicle), or no agent (control) was applied to each wound daily. The endpoint of the study was 28 days after injury. Wound gap defined by distance between wound edges was measured on day 0, 7, 14, and 28. Each wound was submitted for histologic analysis to evaluate wound gap, epidermal thickness, fibroblast density, vascularity, and collagen content. Results: The epidermal thickness between the control and yeast protein group was statistically significant at day 7, 14, and 28 (p= 0.02, .002, 0.000 respectively) and did not reach statistical significance between control and vehicle groups at any time point. The density of fibroblasts between the control and yeast extract groups was statistically significant at day 7 and 28 (p= .002 and .000) and was not significant at day 14 (p= 0.01). Blood vessel content was significantly different between control and yeast extract groups at day 7 and 14 (p=0.01, 0.005) and was not significant at day 28. Collagen content in the yeast extract group was significantly greater compared to the control at days 7, 14,
and 28 (p= 0.00, 0.003, 0.009). In the healthy mouse model, the control, vehicle and yeast groups demonstrated 83.1%, 71.3%, and 77% wound healing at day 7 respectively. By day 14, 100% of the wounds were healed for all groups. The diabetic mice demonstrated delayed wound healing across all groups at day 7 with 13.8%, 21%, and 14.4% for control, vehicle and yeast groups, respectively. At day 14 control, vehicle and yeast groups demonstrated 39.4%, 68.8%, and 84.4% of wound healing, respectively. Wounds were 100% healed by day 28 for all groups. For the diabetic mouse model, epidermal thickness was significantly different in control vs. yeast groups at day 7 and 28 (p=0.002, 0.001) and vehicle vs. yeast at day 28 (p=0.01). There was a significant difference in fibroblast density in control vs. yeast at day 14 and 28 (p=0.05, 0.05) and vehicle vs. yeast at day 7 and 28 (p=0.05, 0.001). Collagen content was significantly different in control vs. yeast at day 7 (p=0.05) and for vehicle vs. yeast at day 7 (0.001). Vascularity was not statistically significant at any time point for any group."


(30) Depression Rates Increase Following Facial Paralysis
Robert Saadi, MD; Tom Shokri MD; Sakeena Payne MD & Jessyka Lighthall M.D
Category: Practice Management, Evidence Based Medicine Core Competencies: Patient Care, Evidence-based Health Care, Medical Knowledge
Highest Level of Evidence: Level III - Retrospective comparative study, case-control study or systematic review of these

Learning Objective(s): 1. Become aware of increased rates of depression in children and adults with facial paralysis. 2. Consider screening for depression in this patient population in your practice.

Study Objective(s): 1) Evaluate national and regional trends in diagnoses of depression of in facial paralysis (FP) patients. 2) Compare rates of depression in patients with facial paralysis to matched controls, to determine whether patients with facial paralysis become depressed at a higher rate.

Design: Claims database study.

Method: Data was collected from the MarketScan Commercial Claims and Encounters Database (CCED) by Truven Health. From the database, all inpatient and outpatient claims with ICD-9-CM diagnosis codes for facial paralysis/dysfunction between 2005 and 2013 were extracted. Diagnoses of depression or related psychiatric disorders were also documented by searching for ICD-9 diagnosis codes associated with any inpatient or outpatient claim. A search for outpatient pharmaceutical claims for prescriptions of anxiety/depression drugs was also conducted. We compared rates of depression between facial paralysis patients and matched controls using conditional logistic regression. The method of Kaplan and Meier was used to estimate cumulative incidence curves of depression (from the index date) by each group.

Results: Approximately 57,941 patients were identified with ICD-9 codes for FP. Baseline depression rates within one year prior to first diagnosis of facial paralysis in both the child (<18 years) and adult (≥18 years) age groups, were 4.1% and 8.2%, respectively. Among children and adult patients without a diagnosis of depression prior to the index date, 6.4% (285) and 9.7% (4733), respectively, had depression within two years of the diagnosis of facial paralysis. Matched controls showed depression within two years of 3.9% for children (p < 0.001) and 6.1% for adults (p < 0.001).

Conclusion: Although limited literature exists documenting increased rates of depression among patients with facial paralysis, the present study adds to the current body of knowledge given its large sample size. Indeed, we found that among both children and adult populations that depression rates were significantly increased as compared to matched controls using Kaplan and Meier incidence curves. Despite the limitations of a claims database study, results showing the higher rates of depression noted in this population suggests a need for depression screening in patients with facial paralysis.

(31) ThermiTight Treatment for the Aging Face: A Retrospective Review of Long-Term Outcomes and Efficacy
Akshay Sanan MD, Resident; Howard Krein, MD, PhD & Ryan Heffelfinger, MD
Category: Aging Face
Core Competencies: Patient Care, Evidence-based Health Care
Highest Level of Evidence: Level IV - Case series

Learning Objective(s): 1) Review the safety profile of ThermiTight treatment for the aging face. 2) Review the clinical efficacy of ThermiTight up to twelve months post-treatment.

Study Objective(s): Patients are increasingly seeking non-surgical treatment for the aging face. Radiofrequency has remained a staple procedure for treatment of skin laxity as therapeutic heat thresholds effectively promote collagen remodeling. Nonetheless, comprehensive skin tightening involves both dermal and hypodermal collagen remodeling. Transcutaneous radiofrequency is unable to deliver consistent and measurable temperatures to the hypodermal layers. The purpose of this study was to evaluate the long-term outcomes of a new technology, which provides precise and controlled subdermal heating and a thermistor-controlled subdermal skin tightening (ThermiTight) for treatment of the aging face.

Design: Retrospective analysis of a case series from a single institution.
Method: A retrospective analysis of 12 patients was completed on patients having undergone ThermiTight for aging face. Treated sites included under-chin and neck jowls. The ThermiTight probe was set at a designated temperature and maintained using a thermistor integrated electrode. The probe was guided at a deliberate pace. The clinical endpoint was a designated epidermal temperature. Patient charts were reviewed to assess for complications up to twelve-months post treatment.

Results: The mean age of treated patients was 52.25 years. All 12 (100%) patients treated were female. 4 (33.3%) patients treated with ThermiTight were also treated with injectables (Botox, Juvederm) simultaneously. 1 (8.33%) patient developed a wound complication. 3 (25%) of patients complained of incisional site pain at their first post-operative visit, which subsequently self-resolved.

Conclusion: ThermiTight is a new technology used for non-surgical treatment of the aging face. Long-term outcomes demonstrate the safety and efficacy of the procedure. Complications are rare for ThermiTight for the treatment of aging face.

(32) Velopharyngeal Insufficiency (VPI) Effects on Life Outcomes (VELO): Linguistic Validation of a Quality of Life Assessment
Rosario Santillana, Medical Student; Jonathan Skirko MD MHPA MPH; Christina Roth MS CCC-SLP & Travis Tollefsen MD MPH
Category: Evidence Based Medicine, Patient Reported Outcome, Reconstruction
Core Competencies: Patient Care, Systems-based Practice, Evidence-based Health Care, Interpersonal Communications Skills, Practice-based Learning and Improvement
Highest Level of Evidence: Level IV - Case series
Learning Objective(s): To create a comprehensible and cognitively equivalent Spanish translation of the Velopharyngeal Insufficiency (VPI) Effects on Life Outcomes (VELO) quality of life assessment.
Study Objective(s): To complete the linguistic validation of this disease specific QOL instrument for Spanish speaking families. The US Latino population is one of the fastest growing minority populations in the country, projected to reach approximately 25% of the population by 2050, and it is estimated that more than three quarters of the US Latino population speaks a language other than English at home. Language has been widely determined as a crucial component influencing the quality of health care, and may also play an important role in exacerbating health care disparities among racial/ethnic groups. Limited English proficiency lowers the quality of primary care Latino patients receive and affects their continuity of their care. Racial and ethnic disparities exist in cleft care with less Hispanic children receiving timely primary treatment than children of White/non-Hispanic mothers. While delay of care is a marker of disparity, delays in care could lead to longer term discrepancies in the child’s well-being. A delay in cleft palate repair is associated with an increased likelihood of developing Velopharyngeal Insufficiency (VPI). VPI is a disorder that results in improper closing of the soft palate against the posterior pharyngeal wall during speech. VPI is clinically characterized by hypernasal resonance and nasal air emission along with nasal regurgitation during swallowing. Children’s lives can be significantly affected by these problems. To measure this impact, the VPI Effects on Life Outcomes (VELO) instrument was developed and validated. Children with VPI were found to have significant impairment in their quality of life (QOL) and had significant improvement with speech surgery. While the VELO instrument is widely used at centers across the country, the instrument is only able to be administered English speaking families.
Design: Qualitative research design; Translation/ back translation; focus group/cognitive interviewing
Method: Our linguistic validation method followed the guidelines of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) that included forward translations, a backward translation, and cognitive interviewing. Forward translations: The first step in translation was to produce two independent forward translations into the target language. Two translators, both native Spanish speakers and fluent in English, independently produced a forward translation of the VELO assessment. The two translations were then reconciled into a single translation, the first version of the Spanish VELO. Backward translation: The reconciled translation was then translated back into English by a third translator. This translator had no previous access to the original English VELO, and was also both a native Spanish speaker and fluent in English. This backward translation and the original English VELO were compared by the research team to find any translation discrepancies or incorrect translations. This resulted in changes to the first reconciled Spanish version and gave rise to a second version of the Spanish VELO.
Cognitive Interviewing: The second version of the Spanish VELO was administered to a panel of respondents using cognitive interview techniques. The participants included Spanish speaking parents of children with VPI as well as children over 8 years old with a history of VPI. These parents were interviewed as a group by study staff. During the interview, parents were asked to discuss the Spanish VELO assessment, interpret all items, and provide possible alternatives for confusing translations.
Results: The main purpose of this process was to ensure that there are no significant cultural gaps in the finalized Spanish VELO translation. The translation process and back translations identified 5 word choice and phrase corrections, while the rigid cognitive interview process with patient families encountered 4 VELO -Spanish instrument items for clarification and restructuring. Through these efforts, the Spanish VELO is both comprehensible and cognitively equivalent to the English language VELO instrument.
Conclusion: The linguistic validation process resulted in a
Spanish translation of the VELO instrument that can be independently validated. The Spanish translation of the VELO instrument also provides a QOL assessment that will serve Spanish speaking families and help identify and improve their quality of care.

(33) A novel 3D-printed mandibular template prototype for mandibular fracture repair

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Category: Trauma

Core Competencies: Practice-based Learning and Improvement, Medical Knowledge, Systems-based Practice

Highest Level of Evidence: Level IV - Case series

Learning Objective(s): To understand the application of a novel three-dimensional printed mandibular template prototype for pre-operative mandibular plate contouring, with an aim to reduce the operative cost and time for complex mandibular fracture management.

Study Objective(s): The objective of our study is to explore the application and cost-efficacy of a three-dimensional (3D)-printed mandibular template in the management of complex mandibular fracture.

Design: Cost-efficacy feasibility study

Method: The Facial Plastic and Reconstructive Surgery division at Washington University School of Medicine in collaboration with Plastic Surgery and the Minimally Invasive Surgery Biomaterials Laboratory are the study sites. Three patients with comminuted multi-site mandibular fractures, who required pre-operative planning from 9/2015 to 8/2016 with stereolithographic, complete mandible model, were identified. Separate printed templates were designed based on maxillofacial computed tomography data. Following initial intensity thresholding of the data, manual segmentation was performed using both open-source and commercially available software. Following segmentation, the modeled pieces of the fractured mandible were re-aligned to imitate the optimally reduced post-operative position. Each reduced mandible model was then divided into templates for 8 potential fracture sites – bilateral subcondylar (2), angle (2), body (2), and symphyseal ± right / left parasymphyseal (2). These template segments were printed on a low-cost consumer grade printer. Multiple study sessions will be completed with 14 junior residents, and results will be computed with 95% Confidence Intervals.

Conclusion: Based on the low cost of printing a 3D fracture site-specific mandibular prototype, we demonstrated a lower cost for preoperative planning for complex mandibular fracture management compared to a stereolithographic perfected complete mandibular model. After the completion of study sessions, we anticipate that reduced overall operative time and cost will also be observed.

(34) Juvéderm Vollure XC Is Safe and Effective for Long-term Correction of Nasolabial Folds: Results From a Multicenter, Randomized, Controlled Study

Steven Dayan, MD; Corey S. Maas, MD; Pearl E. Grimes, MD; Kenneth Beer, MD; Gary Monheit, MD; Bhushan Hardas, MD, MBA; and Vince Lin, PhD

Category: Aging Face

Core Competencies: Medical Knowledge, Evidence-based Health Care

Highest Level of Evidence: Level I - High-quality, multi-centered or single-centered, randomized controlled trial

Learning Objectives: Describe the long-term safety and effectiveness of Juvéderm Vollure XC for treatment of moderate to severe nasolabial folds, including repeat treatment.

Study Objectives: To evaluate Juvéderm Vollure XC, a hyaluronic acid gel (17.5 mg/mL) based on the Vycross technology platform, for long-term correction of moderate to severe nasolabial folds (NLFs).

Design: This was a prospective, randomized, within-subject-controlled study.

Method: Subjects (N=123) received Vollure XC initial/touch-up treatment in 1 NLF and control (Restylane-L) in the contralateral NLF. Effectiveness endpoints for Vollure XC included NLF Severity Scale (NLFS) responder rates (71-point improvement vs baseline) through month 18 after initial/touch-up treatment and at 1 month after optional repeat treatment. Additional effectiveness endpoints included subject-assessed Appraisal of Nasolabial Folds (FACE-Q; 0-100 scale) through month 18 after initial/touch-
up treatment and subject satisfaction on an 11-point scale (0=completely dissatisfied; 10=completely satisfied) through month 18 after initial/touch-up treatment and at 1 month after repeat treatment. Injection site responses (ISRs) were assessed.

Results: After initial/touchup treatment, Vollure XC responder rates were 93% at months 1, 3, and 6, and 85% at month 9, decreased to 59% at month 18, and increased to 94% at 1 month after repeat treatment. Improvement in mean FACE-Q scores over 18 months versus baseline showed continued benefit of Vollure XC from the subject perspective; at months 3, 6, 12, and 18, FACE-Q scores were 70, 73, 58, and 50, respectively, versus baseline score of 32. Subjects reported a high level of satisfaction with Vollure XC throughout the study, with 82% of subjects very satisfied with treatment at month 6, 76% at month 12, 68% at month 18, and 94% at 1 month after repeat treatment. Common ISRs during initial treatment with Vollure XC were firmness (89%), swelling (86%), and tenderness to touch (84%). Most ISRs were mild or moderate in severity. Conclusion: Treatment with Vollure XC was safe and effective for correcting moderate to severe NLFs, with results lasting through 18 months in over 50% of subjects.

(35) Facial Implants: Common Factors involved in Complicated Cases and Litigation
Peter F. Svider, MD; Hani Rayess, MD; Curtis Hanba, BS; Vivek Sagar Patel MD; Giancarlo Zuliani, MD & Michael Carron, MD
Category: Aging Face, Reconstruction
Core Competencies: Patient Care, Medical Knowledge, Evidence-based Health Care
Highest Level of Evidence: Level IV - Case-series

Learning Objective(s): To understand commonly cited adverse events and factors facilitating litigation among patients who have had facial implants placed
Study Objective(s): Our objectives included examining the manufacturer and user facility device experience (MAUDE) database for complications of facial implants and using the Westlaw next database to evaluate factors in legal proceedings.

Design: Retrospective Review
Method: The MAUDE database, which contains medical device reports submitted to the Food and Drug Administration (FDA), was searched for complications from 2006-2016 of the following facial implants, Implantech, Medpor, Stryker KLS and Synthes. Furthermore, the Westlaw next legal database was searched for relevant litigation.

Results: Thirty-nine instances of adverse events reported to the FDA were identified. A plurality of these events (41.0%) involved malar implants, followed by 30.7% in the chin. The most common complications included infection (46.2%); implant migration (23.1%); swelling (17.9%); and extrusion (10.3%). Out of adverse events reported, malar implants had a significantly higher predilection for infection (p = 0.04) compared to other locations. 83.3% of patients had to have their implants removed. Infection commonly presented 83.3 days following the surgery. One-third of complications involved either migration or extrusion. The mean time to extrusion/migration was 381.1 days range (10-2400 days). Out of the malpractice cases identified in publically available court proceedings, allegedly inadequate informed consent and requiring additional surgical intervention (i.e. removal) were the most commonly cited factors.

Conclusion: Infection and implant extrusion/migration are the most common complications of facial implants. Most of these complications necessitated removal. These considerations need to be discussed with patients preoperatively as part of the informed consent process, as allegedly inadequate informed consent was cited in a significant proportion of resultant litigation. Furthermore, cases resolved with settlements and jury-awarded damages encompassed considerable award totals.

(36) Minimal Recovery Time Needed to Return to Social Engagement following Nasolabial Fold Correction with Highly Crosslinked Hyaluronic Acid Fillers
Arthur Swift, MD, CM, FRCS(C); Erika von Grote, PhD & Alessandra Nogueira, MD
Category: Aging Face
Core Competencies: Medical Knowledge, Patient Care
Highest Level of Evidence: Level II - Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies

Learning Objective(s): Evaluate the clinical research that examines the time subjects felt comfortable with a return to social engagement following correction of nasolabial folds with HA dermal fillers.

Study Objective(s): The appeal of hyaluronic acid (HA) dermal fillers for facial soft tissue augmentation is attributed to both the immediate aesthetic effect and the relatively short recovery time involved. This study evaluated the duration (in hours) until subjects felt comfortable with a return to social engagement following correction of nasolabial folds (NLFs) using either of 2 select HA filler products, HA-RR and HA-RD, formulated with XpresHAn TechnologyTM.

Design: This was a 1-month, open label, single-center, non-comparative study to evaluate the duration (in hours) until subjects felt comfortable with a return to social engagement (RTSE) following correction of NLFs. Method: Twenty subjects with moderate or severe bilateral NLFs were treated with HA-RR or HA-RD. Subjects maintained a 14-day diary documenting recovery time. Posttreatment assessments included total hours to RTSE, investigator-assessed NLF improvement by Wrinkle Severity Rating Scale (WSRS) at day 14 and 30. Results: After initial/touch-up treatment, Vollure XC was safe and effective for correcting moderate to severe NLFs, with results lasting through 18 months in over 50% of subjects.
Results: Fifty percent of subjects reported RTSE within 2 hours posttreatment, which increased to 90% by the 3rd day (evening) posttreatment. WSRS and GAIS improved significantly at all posttreatment evaluations, and subject satisfaction was high. The majority of subjects reporting RTSE within 24 hours were treated for moderate NLFs or with 2 mL (or less) of product. The majority of IREs were mild or moderate.

Conclusion: Treatment of moderate-to-severe NLFs with HA-RR or HA-RD can involve minimal recovery time (ie, RTSE within same day as treatment) for some patients, and provides a high degree of clinician and subject satisfaction. Treatment with HA-RR or HA-RD also provides a natural looking aesthetic outcome and was found to be safe and well tolerated.

(37) A novel temporary, inexpensive, patient-customized prosthesis for nasal defects
Hemi Thaker, Medical student; Christopher Rizzi MD; Jewel Greywoode MD & Kalpesh T. Vakharia, MD
Category: Emerging Technology
Core Competencies: Practice-based Learning and Improvement
Highest Level of Evidence: Level V - Expert Opinion, case report or clinical example
Learning Objective(s): To describe the creation of a temporary nasal prosthesis that can be used to cover and dress nasal defects after cancer excision. To describe a temporary prosthesis that allows the patient to care more easily for a nasal wound and conceal the nasal defect while in public

Study Objective(s): To describe the creation of a temporary, inexpensive, defect-specific nasal prosthesis that can be utilized after nasal skin cancer excision
Design: Case Report
Method: We describe a case of a 97 year old patient who underwent staged, wide local excision of an aggressive basal cell carcinoma on the dorsum of the nose. The excision resulted in a through and through defect involving the upper and middle third of her nose. Due to uncertainty of margin clearance, a secondary reconstruction was planned. The location of the defect makes it challenging to dress the region. We describe the creation of a defect specific temporary prosthetic utilizing Aquaplast ® Thermoplast and disposable eye shields.
Results: The patient-specific temporary prosthesis allows for ease of care of the nasal wound in the post-operative setting while pending definitive reconstruction. Furthermore, it does not irritate the eyes, nor does it limit vision, a common occurrence with various other dressing types.
Conclusion: The novel use of a patient-customized temporary nasal prosthesis should be added to the tools available to the reconstructive surgeon for addressing this common defect.