

Editorial Board, *iii*

Contributors, *v*

Introduction, *xv*

By Gregory H. Branham, Jeffrey S. Dover,
Shilpi Khetarpal, Smita R. Ramanadham, and
Allan E. Wulc

Preface: *xvii*

By Jeffrey S. Dover

A Multimodal Approach to Melasma, *1*

By Kourtney Pony and Kiyanna Williams
Melasma is a dermatologic disorder with a female predominance that most commonly presents in sun-exposed areas. It is estimated to affect approximately 5 to 6 million people within the United States. The current recommended treatment approach to melasma is multifactorial with strict photoprotection being an essential component of every treatment approach. First-line treatment options include topical therapies, such as hydroquinone and tranexamic acid. Second-line treatment options include oral therapies, retinoids, chemical peels, microneedling, and laser therapies. Multiple studies have shown optimal results with combination therapy.

Background, *1*

Clinical Approach, *1*

Nonprocedural treatments, 1

Procedural treatments, 3

Summary, *5*

Clinical Care Points, *5*

Platelet-Rich Fibrin, *9*

By Taryn Murray and Shilpi Khetarpal
Platelets contain growth factors that stimulate synthesis of new collagen, elastin,

glycosaminoglycans, and vasculature. Autologous platelet concentrates have many uses in aesthetic medicine including hair restoration, skin rejuvenation, scar revision, fat grafting, and dermal augmentation, with immense potential for additional applications. Historically, platelet-rich plasma was the most commonly used autologous platelet concentrate. Platelet-rich fibrin, a second-generation autologous platelet concentrate, has emerged as the preferred therapy given it is less expensive, easier to produce, and yields comparable to superior results.

Introduction, *9*

Mechanism of Action, 9

Platelet-Rich Plasma: First-Generation

Autologous Platelet Concentrate, 10

Platelet-Rich Fibrin: Second-Generation

Autologous Platelet Concentrate, 10

Procedural technique, *10*

Preoperative Planning, 10

Absolute Contraindications (Adapted from

Harmon and Colleagues), 10

Relative Contraindications, 11

Preparation, 11

Postprocedural Care, 11

Rehabilitation and Recovery, 11

Clinical results in the literature, *11*

Skin Rejuvenation, 11

Natural Filler, 11

Androgenetic Alopecia, 11

Fat Grafting, 14

Potential complications/risks/benefits/limits, *14*

Summary, *14*

Clinics care points, *15*

Disclosure, *15*

Radiofrequency Microneedling, *17*

By Marcus G. Tan, Shilpi Khetarpal, and
Jeffrey S. Dover

Radiofrequency microneedling (RFMN) creates tiny skin perforations and delivers thermal energy to underlying tissues to cause dermal coagulation, collagen remodeling, and neolastogenesis, via a wound-healing response. The skin perforations also improve transcutaneous absorption of topical products and transcutaneous elimination of skin debris. There is high-quality evidence supporting its use for skin rejuvenation, acne vulgaris, acne scars, and axillary hyperhidrosis (AH). RFMN can be a safe option with lower risk of postinflammatory dyspigmentation, especially in those with darker skin phototypes. RFMN can be safely combined with other therapeutic modalities to augment clinical outcomes.

- Introduction, 17
- Radiofrequency, 18
- Mechanism of skin tightening and rejuvenation in radiofrequency microneedling, 19
- Wound healing response, 19
- Importance of epidermal protection, 19
 - Pathogenesis of postinflammatory hyperpigmentation, 19*
 - Differences between radiofrequency microneedling and lasers, 19*
- The evidence supporting radiofrequency microneedling, 20
 - Skin rejuvenation, 20*
 - Acne vulgaris, 20*
 - Acne scars, 20*
 - Axillary hyperhidrosis, 21*
- Striae distensae, 21
- Papulopustular rosacea, 22
- Male-pattern androgenetic alopecia, 22
- Cellulite, 22
- Melasma, 22
- Adverse events and complications, 22
 - Patient selection, 22*
 - Pre- and post-treatment protocol, 23*
 - Limitations, 23*
- Summary and conclusions, 23
- Clinics care points, 23

Thread Lifts—Theory, Technique, Results and Duration of Effect, 27

Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>

Thread lifts, or suture suspension procedures, were first introduced in 1993 and have gone through numerous modifications and iterations, and their popularity has waxed and waned. Now, they are once again in vogue. The threads used in the U.S. with FDA clearance are primarily composed of absorbable PDO and PLLA/PGLA materials with variable configuration of barbs or cones. The barbs and cones allow for grip, suspension and lift of soft tissues. It is a quick office procedure with minimal downtime. Risks are generally self limited due to the absorbable nature of the products. Patient selection is important as results are modest and last approximately 1 to 2 years.

By Usha Rajagopal

- Introduction, 27
 - Suture classification by material, 28*
- Mechanism of PDO thread lifting, 28
- Mechanism of action, 28
- PDO suture classification, 28
- Suture composition and placement, 28
- Patient selection and indications, 28
 - Pre-procedure instructions, 28*
- Complications, 34
- Results, 35
- Summary, 35
- Clinics care points, 35

Nonsurgical Approaches to the Aging Neck, 37

By Mathew N. Nicholas, Sara R. Hogan, Michael S. Kaminer, and Jeffrey S. Dover

Nonsurgical neck rejuvenation treatments can create meaningful differences for patients while having less recovery time and risk of adverse effects when compared with surgical treatments. The choice of nonsurgical treatment should be tailored to the patient's specific concerns, which can be categorized as (1) dyschromia, (2) horizontal neck lines, (3) platysmal banding, (4) skin laxity, and (5) submental fullness. The options for treatment are numerous and include cosmeceuticals; chemical peels; intense pulsed light; ablative and nonablative lasers; energy-based devices including microfocused ultrasound with visualization, monopolar capacitive-coupled radiofrequency, and radiofrequency microneedling; neuromodulators;

fillers; deoxycholic acid; cryolipolysis; and laser lipolysis.

Introduction: nature of the problem, 37

Pretreatment planning, 37

Dyschromia, 38

Cosmeceuticals, 38

Chemical peels, 38

Lasers and energy-based devices, 38

Horizontal or transverse neck lines, 38

Neuromodulators, 39

Fillers, 39

Lasers and energy-based devices, 40

Platysmal Banding, 40

Neuromodulators, 40

Skin Laxity, 41

Dermal fillers, 41

Lasers and energy-based devices, 43

Submental fat and fullness, 47

Deoxycholic acid, 47

Cryolipolysis, 48

Laser and energy-based devices, 48

Summary, 48

Disclosure, 48

Isolated Deep Neck Lift in the Young Patient for Facial Reshaping, 53

By Danielle Cooper and L. Mike Nayak

This article discusses the use of isolated deep plane neck lifts in the young patient. Young patients typically do not require formal facelift procedures. However, some may present wanting improvement in cervicomental contours. In this patient population, the blunted cervicomental angle may not be solely due to excess supraplatysmal fat. A surgeon must be able to address the deeper underlying causes of a blunted contour. This article discusses patient selection and evaluation, pertinent anatomy, detailed surgical techniques, and common complications and management. The reader will have a detailed understanding of how to safely perform this procedure and achieve desired results.

Introduction, 53

Deep neck anatomy, 54

Planning, 54

Surgical procedure, 54

Marking, 54

Anesthesia, 54

Procedure Details, 55

Postoperative care considerations, 59

Complications, 59

Case presentations, 59

Summary, 60

Clinics care points, 60

Disclosure, 60

The Ultralift: Ultrasound and Energy-Based Facelifting, 63

By Richard D. Gentile

Energy-based facelifting or Tesla facelifting is a relatively new concept. In energy-based facelifting energy devices such as fiber lasers, radiofrequency, ultrasound, or plasma devices are used to elevate skin flaps or deep structures of face and neck to perform the surgery. The author has used energy-based devices to complete portions of facelifts since 2008, and the number of successful cases is in the thousands. The author describes the technique with the preferred energy-based devices noted.

Aging demographics and facial rejuvenation procedures, 63

Introduction to TESLA Rhytidectomy, 63

Technology-tissue interaction mediating TESLA rhytidectomy, 64

Collagen shrinkage, morphologic change, 64

Hemostasis, 64

Enhanced tissue dissection, 65

Biochemical and thermal-mediated events, 66

Late effects of thermal mediated fibrous-adipose tissue remodeling after thermal fibroliposculpture, 67

Hybrid procedures the 5 approaches to combining energy devices with rhytidectomy and neck lift surgery(TESLA Facelift Classification, 69

Hybrid and procedures, 69

Hybrid and procedures, 69

Device-only approaches (TESLA rhytidectomy I), 69

Nonexcisional and platysmal modifications (TESLA rhytidectomy II), 70

Minimal excisional rhytidectomy with platysmal and SMAS modifications (TESLA rhytidectomy III), 70

Conventional excisional rhytidectomy face and neck (TESLA rhytidectomy IV), 71

Conventional rhytidectomy and full facial resurfacing (TESLA rhytidectomy V), 73

Patient safety and complications of thermoplastic rhytidectomy, 74
Complications, 75

Summary, 75

Clinics care points, 76

Neck Lift with Platysma Excision, 79

By Angelo L. Cuzalina, Pasquale G. Tolomeo, and Victoria A. Mañón

The face is one of the most aesthetically pleasing aspects of the human person and is the first area acknowledged by an individual. Society places a large emphasis on attractiveness and distinctiveness, pushing for the “younger” look. The aging face is based on multiple factors including skin laxity and excess, lipomatosis, rhytids, and loss of facial volume. For the skilled surgeon, the complete process for facial rejuvenation begins the moment one interacts with the patient and ends with addressing the facial unit and all its parts. Treating an isolated part of the facial subunits does an enormous disservice to the patient and produces an unaesthetic result. The goal of this article is to discuss surgical techniques of a neck lift with platysma excision—as well as its limitations—for the creation of an aesthetic face.

Introduction, 79

Anatomy, 79
Facial layers, 79
Superficial muscular aponeurotic system (SMAS), 81
Platysma, 81
Neurovascular anatomy, 81
Submental/submandibular region and neck, 83

Classifications, 84

Limitations and contraindications, 84
Surgical technique, 87
Patient discussion, 88
Prep and patient positioning, 88

Complications, 94

Summary, 96

Clinics care points, 96

Disclosure, 96

Update on Expanded Use of Kybella, 99

By Ryan C. Kelm and Omer Ibrahim

Deoxycholic acid (DCA) is a novel injectable treatment option approved for the reduction of submental fat. The efficacy and side effect profile of DCA may be advantageous compared with those of more invasive options. This article discusses practical approaches for using DCA in the submental region with a focus on patient selection, pretreatment and posttreatment planning and evaluation, and proper injection technique. Current literature examining off-label indications for DCA is explored, including jowls, infraorbital fat, periaxillary fat, abdominal fat, lipomas, xanthelasma, piezogenic pedal papules, paradoxical hyperplasia of adipose tissue, and fibrofatty residue of involuted infantile hemangiomas.

Introduction, 99

Mechanism of action, 99

Deoxycholic acid for submental fat reduction, 99
REFINE clinical trials, 100
Practical approaches for deoxycholic acid use in submental fat reduction, 100
Safety and adverse events, 101
Off-label fat contouring with deoxycholic acid, 103
Jowls, 103
Infraorbital fat, 103
Periaxillary fat, 108
Abdominal fat, 109
Lipomas, 109
Xanthelasma, 109
Piezogenic pedal papules, 110
Paradoxical hyperplasia of adipose tissue, 110
Fibrofatty residue of involuted infantile hemangioma, 110
Deoxycholic acid dilution, 110

Summary, 110

Clinics care points, 110

Disclosure, 110

Fat Transfer in Oculoplastic and Facial Surgery, 113

By Francesco Bernardini and Brent Skippen

Volume restoration of the face is regarded as a key step in facial rejuvenation and may be addressed with autologous fat transfer. Fat transfer indications and techniques in oculoplastic and facial surgery continue to evolve rapidly. Traditional autologous fat grafting is based on Coleman technique but recent focus has been on microfat grafting techniques. Superficial Enhanced Fluid Fat Injection (SEFFI) is a modern “microfat” technique, which has proven to be a safe and effective method for replacing volume loss and correcting skin atrophy of the entire face.

Introduction, 113

The evolution of fat transfer techniques in oculoplastic and facial surgery, 113

Superficial enhanced fluid fat grafting, 114

SEFFI: histologic evidence, 114

SEFFI: fat preparation, 115

SEFFI: fat injection, 116

SEFFI: results, 116

Discussion, 116

Clinics care points, 118

Disclosure, 118

Cannula Technique for Tear Trough and Under-eye Filler, 121

By Brett Kotlus

Under-eye dark circles, bags, and volume loss are common aesthetic concerns that can develop with aging. Although surgical blepharoplasty can address these issues, there are many patients seeking a nonsurgical correction. Injectable fillers can improve several under-eye concerns in the appropriate set of circumstances. Hyaluronic gel is the preferred filler and when administered with a blunt-tipped cannula this procedure can be rewarding. Several factors should be considered to improve the safety and efficacy of this procedure including proper patient selection, choice of filler, and careful attention to technique.

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 121

Evaluation, 121

Filler selection, 122

Technique, 123

Postprocedure care, 123

Potential complications and management, 123

Summary, 125

Clinics care points, 125

Disclosure, 125

Lowering and Raising the Upper Eyelid Crease, 127

By Kim Byung Gun

Blepharoplasty is one of the most common plastic surgery procedures in the world but may cause unsatisfactory results due to the inadvertent creation of too high or too low an eyelid crease or due to asymmetry of the eyelid creases. Raising a low upper eyelid crease can be performed by excision of the skin superior to the crease or by higher fixation of upper eyelid crease. Lowering too high an upper eyelid, in contrast, requires the release of previous adhesions anterior to the levator muscle complex and tarso-dermal fixation at a lower level at the appropriate height. Prevention of readhesion is critical. Soft tissue support of the gliding zone between levator and orbicularis muscle can be created with fat grafting or fat injection, a fibromuscular flap or graft, a dermis fat graft, or a fascia fat graft to prevent readhesion and to increase the volume to correct any depression present in the upper eyelid sulcus. Correction of blepharoptosis or eyelid retraction can be performed simultaneous to lid crease adjustment and may be mandatory in order to produce a satisfactory result.

Introduction, 127

Raising the upper eyelid crease, 127

Causes of too low eyelid crease, 127

Prevention of Too Low Eyelid Crease, 127

Treatment—raising a low upper eyelid crease, 128

Lowering of the upper eyelid crease, 128

Causes of a Too High Upper Eyelid Crease, 128

Prevention of Too High Eyelid Crease, 129

Treatment—Lowering of Upper Eyelid Crease, 129

Single Incisional Approach Without Skin Resection, 129

Discussion, 135
 Summary, 135
 Disclosure, 135

Botulinum Toxin Brow Elevation and Shaping, 137

By Kenneth D. Steinsapir and Samantha Steinsapir
 Cosmetic botulinum toxin treatment is a significant advancement in minimally invasive cosmetic service that fundamentally changed how cosmetic treatment is performed. Rapidly after its introduction as a cosmetic service, clinicians understood that treatment affected the shape and position of the eyebrows. This was recognized as an important aspect of treatment. Thirty years later there is no agreement of how best to alter brow shape. The Microdroplet Lift paradigm presents a significant alternative method for shaping the eyebrows without forehead paralysis, which is customarily associated with botulinum toxin forehead treatment.

▶ Video content accompanies this article at <http://www.advancesincosmeticsurgery.com>.

Introduction, 137
 Facial expression, emotion, and botulinum toxin, 138
 Eyebrow elevation and shaping, 139
 The microdroplet lift, 141
 Summary, 143

Update on Facial Noninvasive Skin Tightening, 145

By Adam D. Miller and Arisa E. Ortiz
 Facial skin laxity is a common concern among patients seeking esthetic treatment. Although surgery remains the gold-standard therapy for improving laxity, the demand for noninvasive procedures with minimal downtime has increased drastically. Although tightening of the face through nonsurgical means has been historically challenging, new technology has provided safe and effective options for improving facial laxity. As the number of patients seeking these treatments continues to grow, it is likely that we will continue to see an evolution of this technology.

Introduction, 145
 Changes contributing to skin laxity, 145
 General approach to noninvasive skin tightening, 145
 Resurfacing lasers, 146
 Overview, 146
 Ablative resurfacing lasers, 146
 Nonablative resurfacing lasers, 146
 Hybrid resurfacing lasers, 147
 Radiofrequency, 148
 Overview, 148
 Transcutaneous radiofrequency, 148
 Minimally invasive radiofrequency, 149
 Adverse effects and safety considerations, 149
 Ultrasound, 149
 Overview, 149
 Microfocused ultrasound with visualization, 150
 Synchronous ultrasound parallel beam, 152
 Adverse effects, 152
 Microcoring, 152
 Clinics care points, 152
 Disclosure, 153

Updates in Rhinoplasty, 157

By Emily A. Spataro
 Using evidence-based measures to guide rhinoplasty surgical techniques and preoperative, perioperative, and postoperative care is increasing. The clinical practice guidelines (CPG) for rhinoplasty published in 2017 exemplify this shift in the rhinoplasty literature. The goal of the rhinoplasty CPG was to develop consensus statements based on the best available evidence to optimize patient safety and surgical outcomes, while minimizing harm or unnecessary variations in care. Importantly, the CPG highlights major gaps in the literature, calling for research in these areas to expand the current recommendations.

Introduction, 157
 Updates in preoperative management, 158
 Updates in perioperative management, 160
 Updates in postoperative management, 161
 Summary, 162
 Clinics care points, 162
 Disclosure, 163

Powered and Piezoelectric Rhinoplasty Techniques, 165

By Aisling S. Last, Sam P. Most, and Emily A. Spataro

Power-assisted rhinoplasty relies on motor-driven tools to shape and cut the nasal bones, and specifically, piezoelectric devices use ultrasonic frequency vibration to perform these bony modifications while minimizing damage to the surrounding soft tissue or cartilage. Primary uses of these techniques include reducing bony dorsal humps, addressing bony asymmetries, and performing osteotomies. Compared with manual techniques, powered rhinoplasty allows for more precise and atraumatic cutting or rasping of the bone. Piezoelectric instruments are emerging as more favored, as their atraumatic handling of surrounding tissue allows for expanded applications compared to powered techniques, such as complete exposure of the nasal vault to perform lateral and complete osteotomies under direct visualization, precise osteotomy, sculpting of mobilized nasal bones, which also facilitated the resurgence of dorsal preservation rhinoplasty techniques.

Introduction, 165

Powered rhinoplasty techniques, 166

Uses, 166

Advantages, 166

Disadvantages, 166

Piezoelectric rhinoplasty techniques, 166

Uses, 167

Dorsal hump reduction, 167

Osteotomies, 167

Rhinosculture, 168

Septoplasty, 168

Other uses, 168

Advantages, 169

Disadvantages, 169

Summary, 169

Clinics care points, 169

Disclosure, 170

Current Updates in Otoplasty, 171

By Eric Y. Du, Frank Simo, and Collin L. Chen

Otoplasty is a common surgical technique performed to correct prominauris. Although

hundreds of techniques have been developed, the open otoplasty is the most utilized. Recent trends have moved toward less invasive options, including nonsurgical and incisionless otoplasty. Patient satisfaction is the ultimate end point for judgment of a successful outcome of otoplasty. Consistent results involve emphasis on preoperative analysis, intraoperative adjustments, and good patient follow-up and communication. Complications are relatively rare and range from those in the immediate postoperative period (ie, hematoma, infection) to esthetic complications apparent after healing is complete.

Introduction, 171

Surgical technique, 171

Preoperative Planning, 171

Surgical Prep and Patient Positioning, 173

Procedural Approach, 173

Immediate Postprocedural Care and Recovery, 176

Clinical Results, 176

Potential Risks and Complications, 177

Management, 178

Summary, 179

Clinics care points, 179

Correction of Ear Lobe Deformities, 181

By Sarah Benyo, Kasra Ziai, Jessyka G. Lighthall, and Scott Walen

Earlobe deformities can result from congenital or acquired causes. Congenital deformations can present as earlobe clefts, skin tags, or duplicate earlobes, and acquired deformities may be due to surgical resection or trauma. Restoring the normal dimensions and mass of the earlobe, ensuring that the free margin is smooth, and restoring natural continuity of the lobe with the face constitute the key elements of earlobe reconstruction. Operative techniques include local tissue advancement flaps, rotational flaps, and chondrocutaneous flaps. In this chapter, the authors provide a comprehensive review of the operative planning, intraoperative techniques, and postoperative care of patients with earlobe deformities.

Introduction, 181

Surgical technique, 182

Preoperative Planning, 182

Prep and Patient Positioning, 182

Procedural Approaches, 182

Postoperative Considerations, 193

Clinical results in the literature, 194

Summary, 194

Clinics care points, 194

Disclosure, 194