Oculofacial Plastic Surgery 2018

Oculoplastics Real World: Real Cases, Real Lessons, True Learning

Program Directors
Wendy W Lee MD and Richard C Allen MD PhD

In conjunction with the American Society of Ophthalmic Plastic and Reconstructive Surgery

McCormick Place
Chicago, Illinois
Saturday, Oct. 27, 2018

Presented by:
The American Academy of Ophthalmology

2018 Oculofacial Plastic Surgery Subspecialty Day Planning Group

On behalf of the American Academy of Ophthalmology and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS), it is our pleasure to welcome you to Chicago and **Oculofacial Plastic Surgery 2018: Oculoplastics Real World: Real Cases, Real Lessons, True Learning.**

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Oculofacial Plastic Surgery 2018 Contents

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The purpose of the American Academy of Ophthalmology's Continuing Medical Education (CME) program is to present ophthalmologists with the highest quality lifelong learning opportunities that promote improvement in physician practice, resulting in the best possible eye care for their patients.

2018 Oculofacial Plastic Surgery Subspecialty Day Meeting Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify modern, evidence-based algorithms in oculofacial plastic surgery disease treatment and determine how to effectively apply them
- Introduce into practice the contemporary management of congenital eyelid and orbital disease, thyroid eye disease, and orbital trauma
- Evaluate complex orbital and oculoplastics cases to understand treatment outcomes
- Gain familiarity with the practice patterns of experienced oculofacial practitioners and understand differences in preferred practice patterns

2018 Oculofacial Plastic Surgery Subspecialty Day Meeting Target Audience

The intended audience for this program is practicing oculofacial surgeons and comprehensive ophthalmologists from around the world with an interest in oculofacial surgery.

2018 Oculofacial Plastic Surgery Subspecialty Day CME Credit

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide CME for physicians.

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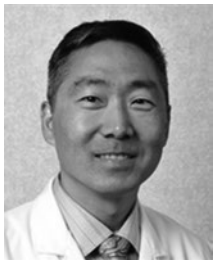

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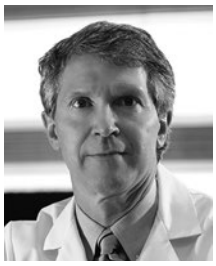

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Oculofacial Plastic Surgery 2018: Oculoplastics Real World: Real Cases, Real Lessons, True Learning

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SATURDAY, OCT. 27

7:00 AM	CONTINENTAL BREAKFAST		
8:00 AM	Welcome and Introductions	Wendy W Lee MD* Richard C Allen MD PhD	
Section I:	**Orbitology**		
	Moderator: Chrisfouad R Alabiad MD		
8:05 AM	What Do You See? Orbital Imaging	Louise A Mawn MD	1
8:20 AM	Thyroid Eye Disease	Don O Kikkawa MD	2
8:35 AM	Idiopathic Orbital Inflammatory Disease	Jurij R Bilyk MD	3
8:50 AM	Orbital Tumors	Robert C Kersten MD	7
9:05 AM	Complex Cases With Panel Discussion		
9:20 AM	Q&A		
9:25 AM	REFRESHMENT BREAK and AAO 2018 EXHIBITS		
Section II:	**Without the Knife—Nonsurgical Aesthetics**		
	Moderator: Jose R Montes MD*		
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10:10 AM	Injectables to Shape the Lower Face and Neck	John Joseph Martin MD*	10
10:25 AM	Lasers and Energy Devices for Periocular Skin Rejuvenation	Murad Alam MD*	11
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10:55 AM	Q&A		
Section III:	**With the Knife—Surgical Aesthetics**		
	Moderator: Robert M Schwarcz MD*		
11:00 AM	Advocating for the Profession and Patients	Ron W Pelton MD PhD*	12
11:05 AM	Upper Eyelid Blepharoplasty	Jose L Tovilla-Canales MD	15
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12:05 PM	Complex Cases With Panel Discussion		
12:20 PM	Q&A		
12:25 PM	LUNCH and AAO 2018 EXHIBITS		

* Indicates that the presenter has financial interest. No asterisk indicates that the presenter has no financial interest.

Section IV:	**The Drama of Periocular Trauma**		
	Moderator: Benjamin P Erickson MD		
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2:25 PM	Q&A		

Section V:	**Building Blocks for Eyelid and Socket Reconstruction**		
	Moderator: Andrew R Harrison MD*		
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2:45 PM	Anophthalmic Socket Reconstruction	John D Ng MD*	27
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	Moderator: Andrea N Kossler MD		
4:05 PM	An Ocular Surface Specialist's Approach to the Tearing Patient	Stephen C Pflugfelder MD*	30
4:20 PM	Pouty Punctum and Crowded Canaliculus	Meredith S Baker MD	31
4:35 PM	Battling the Obstructed Duct	Roger A Dailey MD*	33
4:50 PM	Something Lurking Beyond: Lacrimal Sac Tumors	Erin M Shriver MD	34
5:05 PM	Complex Cases With Panel Discussion		
5:20 PM	Q&A		
5:25 PM	Closing Remarks and Adjourn	Wendy W Lee MD* Richard C Allen MD PhD	

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What Do You See? Orbital Imaging

Louise A Mawn MD

NOTES

Thyroid Eye Disease

Management of Difficult TED

Don O Kikkawa MD

I. Introduction
II. Types of Patient With Difficult Thyroid Eye Disease
  A. Unresponsive to medical therapy
  B. Prior surgery
  C. Reactivation
III. Therapeutic Options
  A. Biologic therapy
  B. Peribulbar steroids
  C. Surgery
IV. Complications and Prognosis

Idiopathic Orbital Inflammatory Disease

Why, Oh Why, IOI?! Pitfalls in the Diagnosis and Management of Idiopathic Orbital Inflammation

Jurij R Bilyk MD

Introduction

Idiopathic orbital inflammation (IOI) is a somewhat nebulously defined constellation of clinical and radiologic findings without a clear etiology. Paraphrasing Justice Stewart's famous comment, "I know it when I see it," Harris' succinct introduction to IOI is apropos to the argument at hand: "Although it is generally recognized when seen, IOI can be difficult to define with precision."[1] While classic cases are straightforward to diagnose, the somewhat atypical cases provoke unease in any experienced orbital specialist, since anecdotal reports of masqueraders, including malignancy and infection, abound in the literature.[2-6]

IOI most likely represents a convergent clinical manifestation of a wide variety of autoimmune and probably cell-mediated processes.[7] As diagnostic capabilities improve, the number of truly "idiopathic" forms of orbital inflammation decreases. As an example, serologic and diagnostic advances in the diagnosis of sarcoidosis and granulomatosis with polyangiitis (GPA) have eliminated these as "idiopathic" inflammations—as long as they are considered in the differential diagnosis upon presentation. More recently, the recognition of IgG4-related orbitopathy has also decreased the number of truly "idiopathic" cases.[8,9]

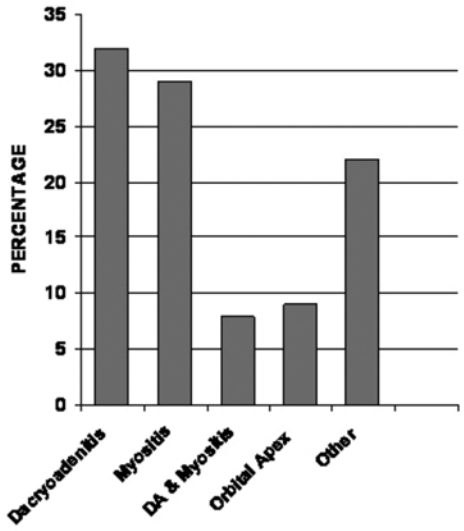

Figure 1. Location of idiopathic orbital inflammation (adapted from Yuen and Ruben, 2003[2]).

Spectrum

The classic presentation of abrupt onset (typically over hours) of pain and periocular edema, sometimes associated with chemosis and diplopia, is not difficult to diagnose. Any tissue of the orbit can be involved, but there is a particular propensity for the lacrimal gland and extraocular muscle (see Figure 1). In a retrospective review of IOI, Yuen and Rubin found that a majority of patients with IOI as the final diagnosis had either pain (69%) or periocular edema (75%) on presentation (see Figure 2).[2] More recently, Mombaerts and colleagues published a consensus paper from members of the Orbital Society on the diagnostic criteria of both myositic and nonmyositic IOI, which listed pain and acuteness of onset very high in importance.[10]

Note, however, that most is certainly not all. This variability of presentation and the lurking specter of a missed diagnosis is the basis of any discussion on empiric therapy. It is also important to recognize that although IOI typically presents as a constellation of symptoms and signs, no one finding is pathognomonic. Yan et al reviewed 319 patients with either IOI or lymphoid tumors and found that the only statistically significant differences were pain (rare in lymphoid lesions) and palpable mass (more common in lymphoid lesions)[6]; the authors did not report on the significance of symptom clusters. In contradistinction, Sullivan and colleagues noted in their study on ocular adnexal lymphoma that 20%-30% of lymphoproliferations presented with pain and inflammatory signs.[11] Goldberg and Rootman, in their important review of orbital metastatic disease, found an inflammatory presentation to be very uncommon, but certainly possible.[12] Pain and diplopia were relatively common symptoms, but no comment was made on the abruptness of onset.

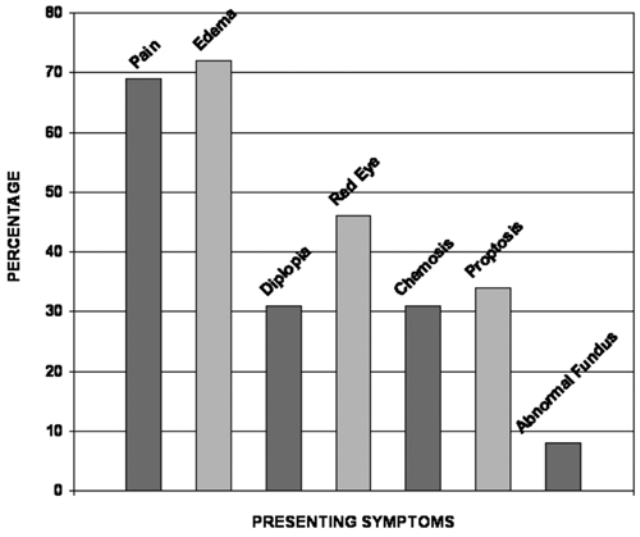

Figure 2. Symptoms and signs of idiopathic orbital inflammation (adapted from Yuen and Ruben, 2003[2]).

Therapeutic Options

Management of IOI can be divided into 4 broad options: observation, medication (corticosteroids or other immunomodulators, NSAIDs), radiation, and surgery (biopsy, surgical debulking, excision).[1] Few, if any, orbital specialists would recommend empiric radiotherapy without tissue biopsy unless the involved tissue was difficult to access and had a severe potential morbidity. Empiric corticosteroids, on the other hand, remain the

cornerstone of IOI therapy in most centers in the United States. This approach has been criticized recently on several grounds, including the argument that empiric therapy is cavalier.

Every clinician must realize at the outset that empiric therapy of any kind, including that for IOI, should *never* be approached in a cavalier fashion. I routinely confide to every patient presenting with suspected IOI that I cannot make a definitive diagnosis without tissue biopsy and that the patient will need close follow-up over time to rule out the possibility of another diagnosis. What arguments, then, support the use of empiric corticosteroid therapy for IOI?

The Numbers

As already stated, IOI can present over a fairly wide clinical spectrum. Typical or classic IOI is readily diagnosed by clinical exam and imaging and is usually exquisitely sensitive to corticosteroids at the appropriate dose. Furthermore, even in atypical cases that eventually need biopsy, it is uncommon to find diagnoses other than inflammation. The aforementioned anecdotal cases of malignancy, etc., represent a numerator without a known (but in all likelihood, with a very large) denominator. In Yuen and Rubin's study, there were no cases of malignancy, lymphoproliferative disease, or infection in any of the biopsied patients.[2] However, this finding must be tempered by the fact that the study comes from a highly respected orbital center. It is certainly possible that a less experienced clinician could miss a more serious entity. Anecdotally, I have seen several cases of metastatic disease, primary orbital malignancy, infection, and orbital lymphoma misdiagnosed initially as IOI. Interestingly, all patients presented in an atypical fashion and were initially managed elsewhere before referral to an orbital center.

Selection bias may also play a significant role in the attitude of orbital experts. In a large urban center in the United States, with ready availability of orbital specialists, it is unlikely that many comprehensive ophthalmologists would manage IOI; rapid referral to an orbital center is the rule. This scenario may differ in other parts of the world, where there may be more pressure on comprehensive ophthalmologists to manage such patients (from a lack of orbital specialists, travel distance, local public health rules regarding referral, etc.). The classic, easily responsive patients with IOI would be managed locally, while the atypical cases, some with masquerading diagnoses, would be referred to an orbital center eventually. This process would bias the pool of patients being seen by orbital specialists, greatly increasing the number of patients with serious pathology misdiagnosed as having IOI and, in turn, influencing the attitude of the specialist regarding initial management.

The Workup

All patients with IOI should undergo a complete workup before empiric therapy is started. This includes a detailed medical history and review of systems, concentrating on any presence of constitutional symptoms, history of malignancy, smoking, respiratory symptoms, autoimmune disease, and immunosuppression (including diabetes).[13-15] In women, the date and result of the most recent mammography is documented, while in men, the date of the last prostate exam and prostate-specific antigen result is useful. There is a lower threshold for orbital biopsy if a history of cancer is obtained, even in the distant past. (Of note, Goldberg and Rootman found that 42% of patients with orbital metastatic disease had no known history of malignancy.[12])

All patients with suspected IOI undergo orbital imaging; there is no exception to this rule. CT usually suffices. The presence of bone erosion or involvement is highly atypical in IOI and mandates tissue biopsy. If orbital apical or cavernous sinus involvement is suspected, MRI is performed. Patients may also undergo a baseline serologic workup consisting of a CBC with differential, ACE, cANCA / pANCA / xANCA, ANA, IgG4 / IgG, and SPEP. In patients with unexplained respiratory symptoms or a history of smoking, chest imaging is also obtained. Mammography and a prostate workup should be considered if not recently performed. Empiric corticosteroid therapy is held until orbital imaging is reviewed, but it may be initiated before the aforementioned serologic results are available to minimize any delay in treating a painful condition.

The Dosage

One possible pitfall in corticosteroid therapy is inadequate dosing, which is then misinterpreted as a treatment failure. It is important to pulse the patient with a high dose initially, followed by a tapering dose, typically lasting several weeks. The typical initial dosage of prednisone is 1 mg/kg/day, followed by a slow taper over weeks to months.

Another common pitfall, at least in Philadelphia, is poor compliance and follow-up. All patients are warned that they must be followed closely not only by an ophthalmologist but also by their family physician for the potentially serious side effects of prednisone therapy. They are also warned about these side effects and placed on GI prophylaxis. If the patient is seen acutely in the ER, they are given only 1 dose of prednisone once imaging has been reviewed. This ensures follow-up the next day and also decreases the possibility of chronic, unsupervised steroid therapy. Some patients will fail to respond to adequate corticosteroid doses or recur with attempted steroid taper. Such patients may require steroid-sparing antimetabolite therapy (eg, methotrexate). More recently, biologic therapy has also been used for the treatment of refractory IOI (eg, infliximab, rituximab).[16-18]

Biopsy

With the ever-present possibility of misdiagnosis and serious underlying disease, why not simply biopsy everyone?[19] One can argue this on several levels. From an epidemiologic, public health perspective, we would be performing a significant number of "unnecessary" surgeries (the meaning of the term "unnecessary" would depend on one's opinion about the controversy at hand), with their associated cost. In Yuen and Rubin's study, 29% of patients were biopsied for a variety of reasons.[2] Put another way, 71% of patients responded rapidly to empiric therapy and did well without surgery.

Orbital surgery also carries significant risks, and as a simple rule, morbidity increases with depth of dissection. As an example, biopsy of the lacrimal gland is several orders of magnitude safer than biopsy of the orbital apex. Morbidity also increases with the type of tissue being sampled: biopsy of an extraocular muscle or optic nerve sheath is riskier than biopsy of orbital fat.

These very real anatomic concerns are, in fact, recognized by our colleagues who argue against empiric corticosteroid therapy. Their algorithm supporting tissue biopsy in all cases of IOI is typically tempered by various exclusions (orbital apex, extraocular muscle, etc.) and caveats to biopsy orbital tissue that is "accessible." Such cautions are quite appropriate and attest to the experience of the "biopsy proponents." However, these limits on what should or should not be biopsied also decrease the pool of IOI patients who will actually undergo biopsy and increase the pool of IOI patients who will, in fact, be treated with what amounts to empiric therapy.

In those patients who do undergo biopsy, another potential pitfall is inadequacy of biopsy. In general, the smallest amount of tissue for diagnosis is recommended, to minimize morbidity. On occasion, this leads to inadequate biopsy, which may be interpreted as normal or as "nonspecific inflammation." A penumbra of inflammatory response is not uncommon in other processes, including malignancy and lymphoproliferative disease. Paradoxically, this cuff of inflammation not only misses the true underlying diagnosis but may lull the clinician into a false sense of security: the diagnosis of IOI is now "biopsy-proven."

Finally, if biopsy is being considered, then corticosteroid therapy should be withheld if possible. Initiating steroid therapy prior to surgery may result in a marked change in the histopathology, making definitive diagnosis difficult.

Recommendations

The treatment algorithm proposed by Harris presents a cautious and logical approach to the management of IOI.[1] A modified version is shown in Figures 3 and 4.

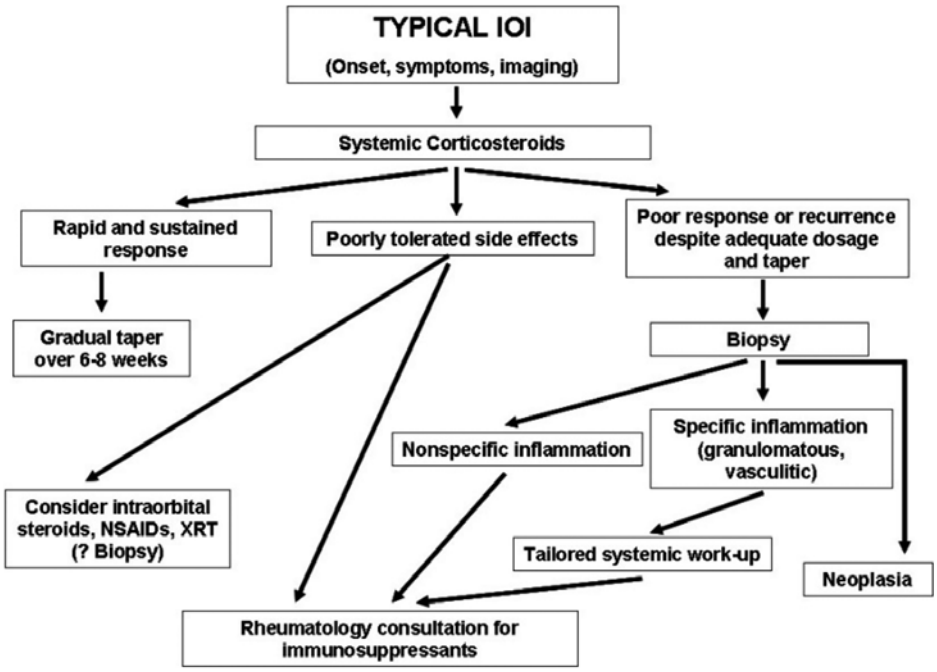

Figure 3. Proposed management algorithm for *typical* (classic) idiopathic orbital inflammation (adapted from Harris, 2005[1]).

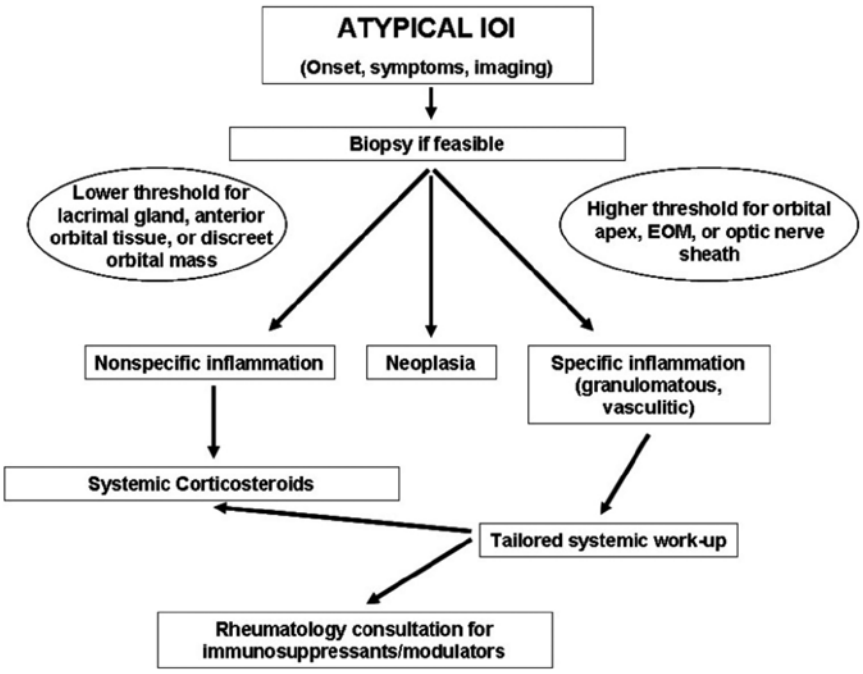

Figure 4. Proposed management algorithm, for *atypical* idiopathic orbital inflammation (adapted from Harris, 2005[1]).

Conclusions

On critical analysis, the management algorithms of IOI by proponents of the "empiric steroid" and "biopsy" camps are fairly convergent; each group is simply approaching the matter at hand from a different perspective. This is nicely described by a well-known, philosophical musing by Rose.[20] One specific point of disagreement is the management of presumed inflammatory dacryoadenitis. Some orbitologists have a low threshold for biopsy simply because the area is readily accessible with minimal morbidity, and on occasion, aggressive lacrimal gland malignancies or lymphoma can present with a marked inflammatory response.[1,19,20] In this specific scenario, I have no objection to tissue biopsy as initial management and have recently lowered my threshold for lacrimal gland biopsy, although I still contend that over a large series of patients, the diagnostic value will be low. However, a recent study by Mombaerts and Garrity concluded that surgical debulking of the lacrimal gland, with or without intraoperative or perioperative injection of corticosteroid, is not just *diagnostic*, but may also be *therapeutic*.[21]

The two most important points of this discussion are straightforward: honesty and vigilance. A cavalier and arrogant attitude toward IOI is never in the best interest of the patient or the physician. A careful workup (history, exam, imaging, serology) and a long, frank discussion with the patient are essential. A healthy dose of diagnostic unease with close follow-up is also warranted to ensure that other serious diagnoses are not missed.

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Orbital Tumors

Case Presentation of Orbital Lesion

Robert C Kersten MD

CASE

A 15-year-old male patient was noted to have bilateral symmetrical orbital masses serendipitously found on imaging to evaluate new-onset seizures. These were reported by the radiologist as "bilateral orbital dermoids," and referral for management was made.

Clinical Presentation of Dermoid Cysts

- Developmental incarceration of surface ectoderm by mesoderm at orbital suture lines
- Deep vs. superficial

Imaging Appearance of Orbital Dermoid Cysts

- Adjacent to suture lines upon imaging
- Deep vs. superficial

Clinical Course

- Progressive enlargement
  - Leakage of cyst contents resulting in recurrent inflammation
  - Deep orbital lesions' progressive expansion results in erosion of adjacent structures
- Clinical presentation of subperiosteal hemorrhage; mass effect with:
  - Proptosis
  - Mechanical limitation of extraocular muscle excursions
  - Ptosis
  - Compressive optic neuropathy
- Imaging characteristics
  - Adjacent to orbital roof
  - Spindle shape due to firm periosteal attachments at apex and arcus marginalis

Etiology

- Large majority traumatic, with or without orbital fracture
- Sudden elevation of venous pressure, bleeding diathesis, pharmacologic anticoagulation, orbital invasion by adjacent disease
- Bleeding diathesis
  - Vitamin C deficiency ("scurvy")
  - Bleeding in scurvy due to leaky vessels
  - Vitamin C necessary to crosslink collagen
  - Historically subperiosteal hemorrhage was a common presentation of scurvy.
  - First clinical trial was used to investigate etiology

Management

- Spontaneous resorption vs. surgical evacuation

Aesthetic Facial G-Point: Where Injectable and Knife Meet

Francesco P Bernardini MD

Introduction

As experts of the eye and the periocular region, ophthalmologists are theoretically the specialists better prepared and trained to use fillers to aesthetically treat this region safely and effectively. The objective of this presentation, implemented by this corresponding outline, is to help all the potential injectors in their progression toward delivery of safe and pleasing aesthetic results to all of their patients.

Anatomy

The anatomy of the eyelids and neighboring regions is probably the most complex of the entire face, and it reflects the complicated functions and the primary role of the eye.

However, most of us in this group are surgeons, and as surgeons we are used to addressing conditions to which we provide direct surgical access. In other words, we can see the anatomy and the changes that our manipulations produce as we make them. Whether you are thinking about offering filler injections around the eye to your patients or you are already an injector but are willing to evolve and treat the periocular region, there are some important considerations that should be taken into account. These include regional anatomy, the aesthetic assessment of the region, and technical skill formation.

It has been demonstrated that volume loss in the face plays a dominant role in determining facial aging, and this also applies to the periocular area. The individual fat compartments that seem to be confluent in the youthful face, when they show demarcations between them, represented by the retaining ligaments, cause the most common periocular aesthetic concerns. Recognizing the anatomical structures functionally involved is of crucial importance, and the injector's work is based on knowledge of the position of the individual fat compartments and retaining ligaments involved; you should be able to mentally visualize the relevant anatomy as if you possessed an ultrasound probe in your hands along with the filler syringe.

Aesthetic Considerations

The role of volume restoration in the periocular area is of maximal relevance, as the eyes are the first to show signs of aging. Specific volume-related conditions that affect the aesthetic appearance of the periocular region include tear trough deformity, orbitomalar sulcus, and eyelid bags. The wise injector should not behave like a "dumper," trying to fill a hole, but rather should take advantage of the filler properties to stretch and reposition the retaining ligaments and concomitantly offer support to the depleted fat compartments. This paradigm shift from overfill of the center of the face to targeting the periphery to "lift" first can be applied to all the different anatomical units of the face and helps to achieve natural results and reduce complications, which are so difficult to manage in the periocular region especially.

I find that there appear to exist various analogies between periocular filler injection and surgery, such as aesthetic and anatomical considerations and aesthetic goals, represented by correcting hollows, eliminating bags, tightening of the lid, and improving the skin quality. As injectors we want to achieve surgical results with a noninvasive in-office treatment. Combining knowledge of the surgical and the filler anatomy, I have come to recognize the existence of a common aesthetic "G-point," which, once properly addressed, helps the surgeon and the injector to achieve the aesthetic goals of rejuvenating the periocular aesthetic unit.

Figure 1. Impact of the aesthetic G-point in addressing all of the aesthetic concerns occurring in the periocular unit.

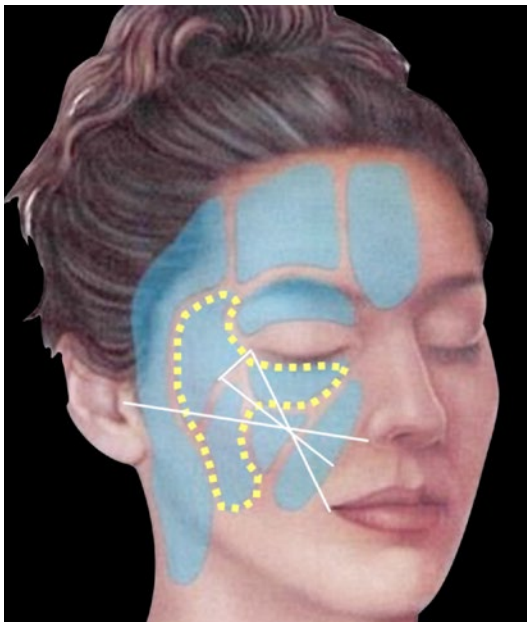

Figure 2. The G-point can be found at the joining of the bisector among the Hinderer's lines and a line drawn from the lateral canthus, forming with it a 90° angle.

Injections Skills

Instead of trying to fill the emptiness represented by the insertion of the orbitomalar ligament, which is very tight and difficult to elevate without releasing it, in my injection technique I target the G-point first with a deep bolus (defined as at least a 0.1 cc) of a high G-prime filler (see Figure 3, lateral oval shape) in order to provide lift and stretch of the tissues superficial to the orbital retaining ligament. Subsequently I provide central support at the apex of the V of the orbitomalar groove (Figure 3, central oval shape). In the end I finalize the treatment using a low G-prime filler injected with a mini-bolus technique (defined as 0.02 to 0.03 cc boluses) to smooth the transitions (Figure 3, four small circles).

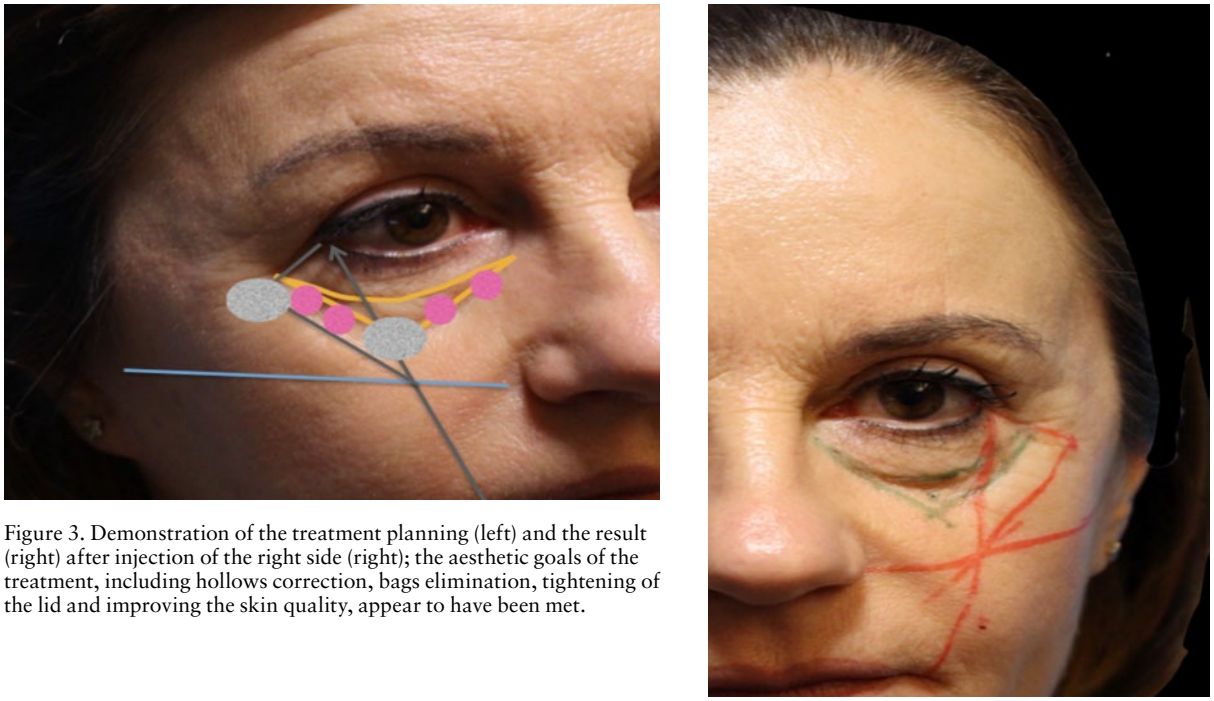

Figure 3. Demonstration of the treatment planning (left) and the result (right) after injection of the right side (right); the aesthetic goals of the treatment, including hollows correction, bags elimination, tightening of the lid and improving the skin quality, appear to have been met.

Injectables to Shape the Lower Face and Neck

John Joseph Martin MD

NOTES

Lasers and Energy Devices for Periocular Skin Rejuvenation

Murad Alam MD

NOTES

2018 Advocating for the Profession and Patients

Oculofacial Plastic Surgery Subspecialty Day

Ron W Pelton MD PhD

Ophthalmology's goal to protect sight and empower lives requires active participation and commitment to advocacy from every ophthalmologist. Contributions to the following three critical funds are a part of that commitment:

- OPHTHPAC® Fund
- Surgical Scope Fund (SSF)
- State Eye PAC

Please join the dedicated community of ophthalmologists who are contributing to protect quality patient eye care for everyone. The OPHTHPAC Committee is identifying Congressional Advocates in each state to maintain close relationships with federal legislators in order to advance ophthalmology and patient causes. At Mid-Year Forum 2018, we honored nine of those legislators with the Academy's Visionary Award. This served to recognize them for addressing issues important to us and to our patients. The Academy's Secretariat for State Affairs is collaborating closely with state ophthalmology society leaders to protect Surgery by Surgeons at the state level.

Our mission of "protecting sight and empowering lives" requires robust funding of both the Surgical Scope Fund and the OPHTHPAC Fund. Each of us has a responsibility to ensure that these funds are strong.

OPHTHPAC® Fund

OPHTHPAC is a crucial part of the Academy's strategy to protect and advance ophthalmology's interests in key areas, including physician payments from Medicare and protecting ophthalmology from federal scope-of-practice threats. Established in 1985, OPHTHPAC is one of the oldest, largest, and most successful political action committees in the physician community. We are very successful in representing your profession to the U.S. Congress.

Advocating for our issues in Congress is a continuous battle, and OPHTHPAC is always under financial pressure to support our incumbent friends as well as to make new friends among candidates. These relationships allow us to have a seat at the table with legislators who are willing to work on issues important to us and our patients.

The relationships OPHTHPAC builds with members of Congress is contingent on the financial support we receive from Academy members. Academy member support of OPHTHPAC allows us to advance ophthalmology's federal issues. We need to increase the number of our colleagues who contribute to OPHTHPAC and to the other funds. Right now, major transformations are taking place in health care. To ensure that our federal fight and our PAC remain strong, we need the support of every ophthalmologist to better our profession and ensure quality eye care for our patients.

Among the significant impacts made by OPHTHPAC are the following:

- Secured relief from the burdens and penalties associated with the existing Medicare quality improvement programs for 2018
- Halted applications of MIPS penalties to Part B drug payments to physicians
- Convinced CMS to revisit drastic cuts to retina and glaucoma surgical codes
- Halted the flawed Part B Drug Demonstration
- Derailed an onerous global surgery payment data collection plan
- Continued efforts in collaboration with subspecialty societies to preserve access to compounded and repackaged drugs such as Avastin

Contributions to OPHTHPAC can be made here at AAO 2018, or online at www.aao.org/ophthpac by clicking "Join." You can also learn more by texting "OPHTH" to 51555.

Leaders of the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS) are part of the American Academy of Ophthalmology's Ophthalmic Advocacy Leadership Group (OALG), which meets annually in January in Washington, D.C., to provide critical input and to discuss and collaborate on the Academy's advocacy agenda. At the January 2018 OALG meeting, panel discussions took place on the outlook for Medicare reimbursement and implementation of the Merit-based Incentive Payment System (MIPS), as well as specialty research related to the IRIS™ Registry. In addition, meeting participants discussed the changing paradigm for optometric scope battles, held a roundtable to discuss challenges for surgical subspecialties, and considered how telemedicine could impact ophthalmology.

At Mid-Year Forum 2018, the Academy and the ASOPRS ensured a strong presence of ophthalmic plastic and reconstructive specialists to support ophthalmology's priorities. Ophthalmologists visited members of Congress and their key health staff to discuss ophthalmology priorities as part of Congressional Advocacy Day. The ASOPRS remains a crucial partner with the Academy in its ongoing federal and state advocacy initiatives.

Surgical Scope Fund

Thanks to 2018 contributions to the Surgical Scope Fund (SSF) from ophthalmologists across the country, the Academy's Surgery by Surgeons initiative has had a successful year preserving patient surgical safety and surgical standards in state legislatures across the country. The SSF is key to the Academy's Surgery by Surgeons campaign. *If you have not yet made a 2018 SSF contribution*, visit our contribution booth at AAO 2018 or contribute online at www.aao.org/ssf. If you already have made that 2018 contribution, please consider making a crucially needed supplemental contribution.

The SSF provides grants to state ophthalmology societies in support of their efforts to derail optometric surgery proposals that pose a threat to patient safety. Since its inception, the

Surgery by Surgeons campaign and the SSF, in partnership with state ophthalmology societies, has helped 34 state/territorial ophthalmology societies reject optometric scope-of-practice expansion into surgery.

To date in 2018, thanks to financial resources from the SSF, the Surgery by Surgeons campaign has netted patient safety and surgery standard preservation victories in the following battleground states:

- Florida
- Iowa
- Maryland
- Mississippi
- Nebraska
- North Carolina
- South Carolina
- Vermont
- Virginia

The 2018 battle is far from over, though. For example, California, Illinois, Massachusetts, and Pennsylvania are currently under assault. Furthermore, as of submission of this update in June 2018, the optometric surgery push had sprouted in six additional states.

Dollars from the SSF are critical in the state surgery campaigns. In each of these legislative battles, the benefits from SSF distributions are abundantly clear. The best lobbyists and public relations consultants are contracted as necessary. Additionally, media campaigns (including TV, radio, and social media) are launched to educate the voting public when needed. This helps to secure success in protecting patient safety by thwarting optometry's attempts at expanding its scope of practice to include surgery privileges.

Each of these endeavors is very expensive, and no one state has the resources to wage one of these battles on its own. Ophthalmologists must join together and donate to the SSF to fight for patient safety when a state faces a scope battle over optometric surgery.

The Secretariat for State Affairs thanks the ASOPRS for joining state ophthalmology societies in contributing to the SSF in 2017 and looks forward to its continued financial support. These ophthalmic organizations complete the necessary SSF support structure for the creation and implementation of successful Surgery by Surgeons campaigns.

State Eye PAC

It is increasingly important for all ophthalmologists to support their respective State Eye PACs because campaign contributions to legislators at the state level must come from individual ophthalmologists and cannot come from the Academy, OPHTHPAC, or the SSF. The presence of a strong State Eye PAC providing financial support for campaign contributions and legislative education to elect ophthalmology-friendly candidates to the state legislature is critical, as scope-of-practice battles and many regulatory issues are all fought on the state level.

ACTION REQUESTED: *Advocate for Your Profession & Your Patients*

Academy SSF contributions are used to support the infrastructure necessary in state legislative / regulatory battles and for public education. State PAC and OPHTHPAC contributions are necessary at the state and federal level, respectively, to help elect officials who will support the interests of our patients. Contributions to *each* of these three funds are necessary and help us protect sight and empower lives. SSF contributions are completely confidential and may be made with corporate checks or credit cards, unlike PAC contributions, which must be made by individuals and are subject to reporting requirements.

Please respond to your Academy colleagues and be part of the community that contributes to OPHTHPAC, the Surgical Scope Fund and your State Eye PAC. Please be part of the community advocating for your patients now.

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Surgical Scope Fund	OPHTHPAC® Fund	State EyePAC
To derail optometric surgical scope-of-practice initiatives that threaten patient safety and quality surgical care	Ophthalmology's interests at the federal level Support for candidates for U.S. Congress	Support for candidates for state House, Senate, and governor
Political grassroots activities, lobbyists, PR and media campaigns	Campaign contributions, legislative education	Campaign contributions, legislative education
No funds may be used for campaign contributions or PACs.		
Contributions: Unlimited	Contributions: Limited to $5,000	Contribution limits vary based on state regulations.
Individual, practice, and organization		
Contributions are 100% confidential.	Contributions above $200 are on the public record.	Contributions are on the public record depending upon state statutes.

Upper Eyelid Blepharoplasty
From A to Z

José Luis Tovilla-Canales MD

Blepharoplasty is currently defined as excision of excessive eyelid skin, with or without orbital fat, for either functional or cosmetic indications. The eyes and periorbital area are commonly the focal point during human conversation and communication. Changes in the eyelid appearance that are caused by aging may convey an inappropriate message of tiredness, sadness, and absence of vigor, which may diminish the aesthetic appearance of the face.

Sex, race, and age influence the relationships of the landmarks of periorbital anatomy. The structures around the eyes differ significantly among people of different sexes and races. So, the first rule of my presentation today is *upper eyelid blepharoplasty is* not *a cooking recipe*.

This is particularly important when we compare male to female periocular anatomy. In women, the brow and lid crease are higher (8-11 mm) and more arched, and the lid fold is less prominent. In men, the brow protrudes more anteriorly, and the eyelid crease is closer to the eyelid margin (6-9 mm).

Preoperative evaluation needs to rule out systemic diseases like thyroid disease and dry eye syndrome. History of bleeding disorder and use of aspirin should be specifically noted and adequately avoided.

Patients undergoing a cosmetic blepharoplasty need to have a complete ophthalmological examination. The second rule: *BCVA, palpebral fissure height and contour, upper eyelid position, eyelid crease and eyelid fold distance, eyebrow position, frontalis action, and tear film health should all be meticulously examined*. Eyelid closure (orbicularis muscle function and history of VII nerve palsy) has to be evaluated to avoid postoperative lagophthalmos.

Also very important is creating and maintaining a register of patients, including preop and postop photographs. The third rule: *A written and informed consent of the patient should be obtained before the surgery day* to avoid any kind of postoperative problems in this regard.

When dealing with the upper eyelids, we have to consider the eyebrows and eyelids as a single unit. Management of the eyebrow will be covered in another lecture.

The fourth rule that I will mention is that *understanding anatomy of the eyelid complex is of foremost importance in precisely assessing the patient before surgery*. In this consideration, the surgeon has to identify and evaluate the needs for each patient. Some patients may only need skin removal, while some others may require fat removal (retro-orbicularis or preaponeurotic).

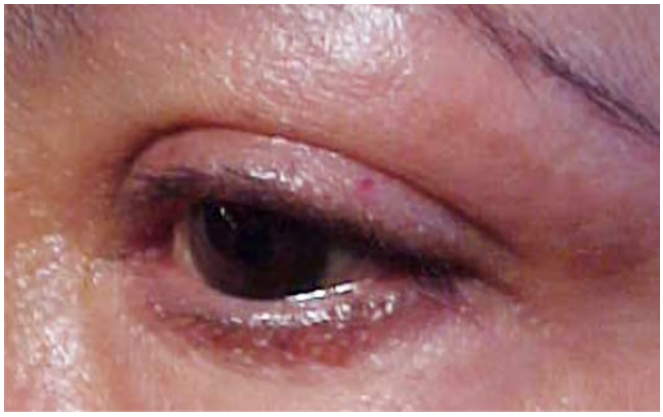


Figure 1. Preoperative evaluation of a patient with prominent retro-orbicularis fat.

Upper blepharoplasty is usually performed under local anesthesia with IV sedation. Adequate marking of the incisions is mandatory in order to obtain a successful outcome. To avoid postoperative lagophthalmos, care should be taken not to remove excessive skin. Methods of marking include the "skin pinch" and the "skin flap" technique. The skin pinch method (see Figure 2) is done with the patient in the sitting position and the eyes closed. Depending on the natural palpebral fold, the lower incision line is marked. A small forceps is used to gather the excess skin between the jaws of the forceps. Remember, *do not remove more skin than needed*. It is always better to go back to the OR to remove more skin than to correct a postoperative lagophthalmos.

We usually talk about the rule of thirds: one-third from the eyelid margin to the lower incision (9-10 mm), one-third from the lower to the upper incision (9-10 mm), and the final third from the upper incision to the lower aspect of the eyebrow (9-10 mm).

Figure 2. Skin pinch technique.

Figure 3. Skin marking; the rule of thirds.

Figure 4. Preoperative lacrimal gland prolapse.

Adequate hemostasis is very important to avoid postoperative hemorrhage, especially when lipectomy is performed. Skin is closed with a 6-0 nonabsorbable (nylon) material, either with interrupted or continuous sutures.

Postoperative indications include the use of ice packs for 10 minutes, 3-4 times per day, for 3 days. Then, I like to change to hot compresses 3 times/day. I also like to prescribe antibiotic-steroid ointment twice a day over the incision. Keeping the patient's head elevated while sleeping helps to reduce edema. Patients need to avoid blood thinners for 1 week and heavy weight lifting for 10 days. Sutures are removed at 5-6 days postop.

An optimal upper eyelid blepharoplasty needs to address all the possible anatomical changes that may be present in an eyelid, such as a previous eyelid ptosis, levator disinsertion, or lacrimal gland prolapse (see Figure 5). Videos will be shown during the lecture to show how to deal with these conditions.

Although rare, complications can occur after an upper eyelid blepharoplasty, such as asymmetry, ptosis, lagophthalmos, ocular motility disorders, scarring, hematoma and retrobulbar hemorrhage (see Figure 5), and lymphedema. Mention will be made of how to avoid and how to manage some of these complications.

Figure 5. Severe postoperative hemorrhage.

Lower Eyelid Blepharoplasty

Martín H Devoto MD and Ana F Duarte MD

Introduction

In the last few decades we have seen an increase in the demand for procedures for facial rejuvenation. Because the periocular area best expresses aging, fatigue, and attractiveness, lower eyelid blepharoplasty is unsurprisingly one of the most frequent surgeries in the oculoplastic surgeon's practice.
Through the years, and as age-related changes became better understood, we have witnessed a paradigm shift in aesthetic approaches. Predominantly resective techniques were progressively replaced by more conservative and customized procedures, allowing better and more natural results and a lower rate of complications. However, in contrast to other areas of medicine, and even though this is one of the most discussed procedures in the facial aesthetics literature, objective data have systematically been lacking.

It is our opinion that while the evaluation of an aesthetic result may go beyond numerical data, an effort must be made to express results in the most accurate and objective way possible. While concepts of youth and beauty may vary in each race, culture, and even time, we must not forget that an evidence-based practice should, whenever possible, be based on unbiased results.

Background Observations

Four important aspects should be considered and addressed as needed during an inferior blepharoplasty: orbital fat, skin, eyelid laxity / position, and lateral canthus height. Each of these features may or may not be intentionally changed during the surgery, and the success of the result will depend not only on the technical skill of the surgeon but also on the selection of the procedure that best suits each particular patient.

Considering previous publications and also based on my experience, I elect the transconjunctival blepharoplasty with fat transposition associated with a mini–skin pinch and an orbicularis muscle suspension in a large number of patients who seek rejuvenation of the eyelid-cheek area. In selected cases, this has been the procedure that allows me to obtain more satisfactory results allied with a lower rate of complications.

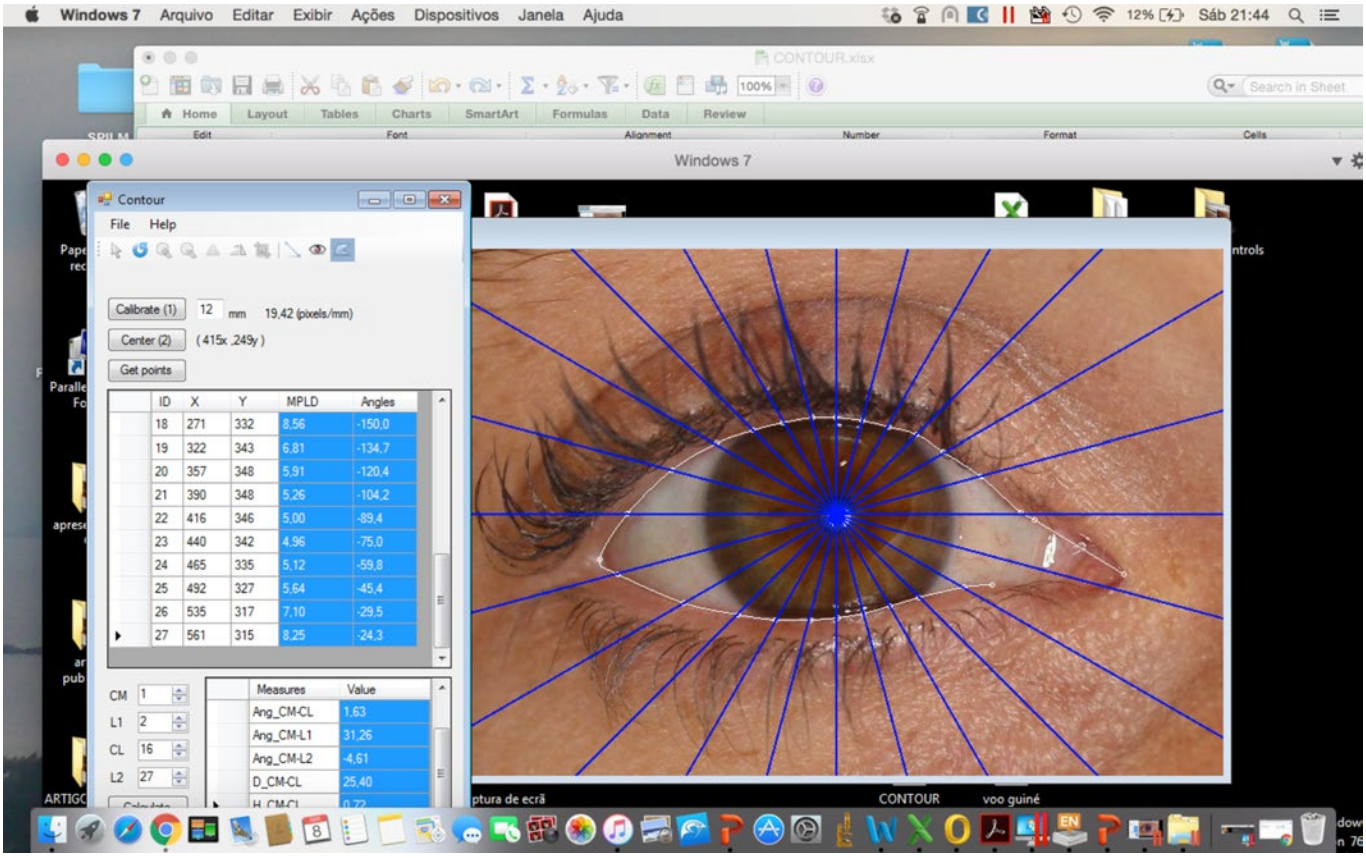
Study

We have recently analyzed a group of patients who underwent this 3-step dual plane inferior blepharoplasty by 2 surgeons from 2 distinct countries (Argentina and Italy). Using validated software, we have shown that our subjective perception of cosmetic improvement could be translated into a set of anthropometric changes that definitely allowed us to understand the effect of the procedure. ImageJ and a contour radial analysis (see Figure 1) were used to compare significant data points between pre- and postoperative photographs of 20 Argentine patients, operated by MD, and 20 Italian patients, operated by FB.

We demonstrated that lower eyelid margin did systematically elevate, contradicting the retraction that typically occurs with aging, with a reduced intersurgeon variability (see Figure 2). On the other hand, we did expect a more pronounced effect on the palpebral fissure tilt and length; however, that was not statistically confirmed. These results clarified how this procedure allows a systematic lift of the eyelid margin. Even though the orbicularis suspension did not translate into a long-term elevation of the lateral canthus, it may become an important addition for the prevention of postoperative eyelid malposition. We complemented this study with a subjective categorization of postoperative skin wrinkles and tear trough improvement that also showed excellent outcomes.

Conclusion

It is unquestionable that more objective analyses are needed in the facial surgery literature. This will allow a more accurate indication of each procedure to each particular patient and improve our level of confidence in future published data.


Windows 7 Arquivo Editar Exibir Ações Dispositivos Janela Ajuda
Windows 7
Contour
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Calibrate (1) 12 mm 19,42 (pixels/mm)
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18 271 332 8,56 -150,0
19 322 343 6,81 -134,7
20 357 348 5,91 -120,4
21 390 348 5,26 -104,2
22 416 346 5,00 -89,4
23 440 342 4,96 -75,0
24 465 335 5,12 -59,8
25 492 327 5,64 -45,4
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CONTOUR
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Figure 1.

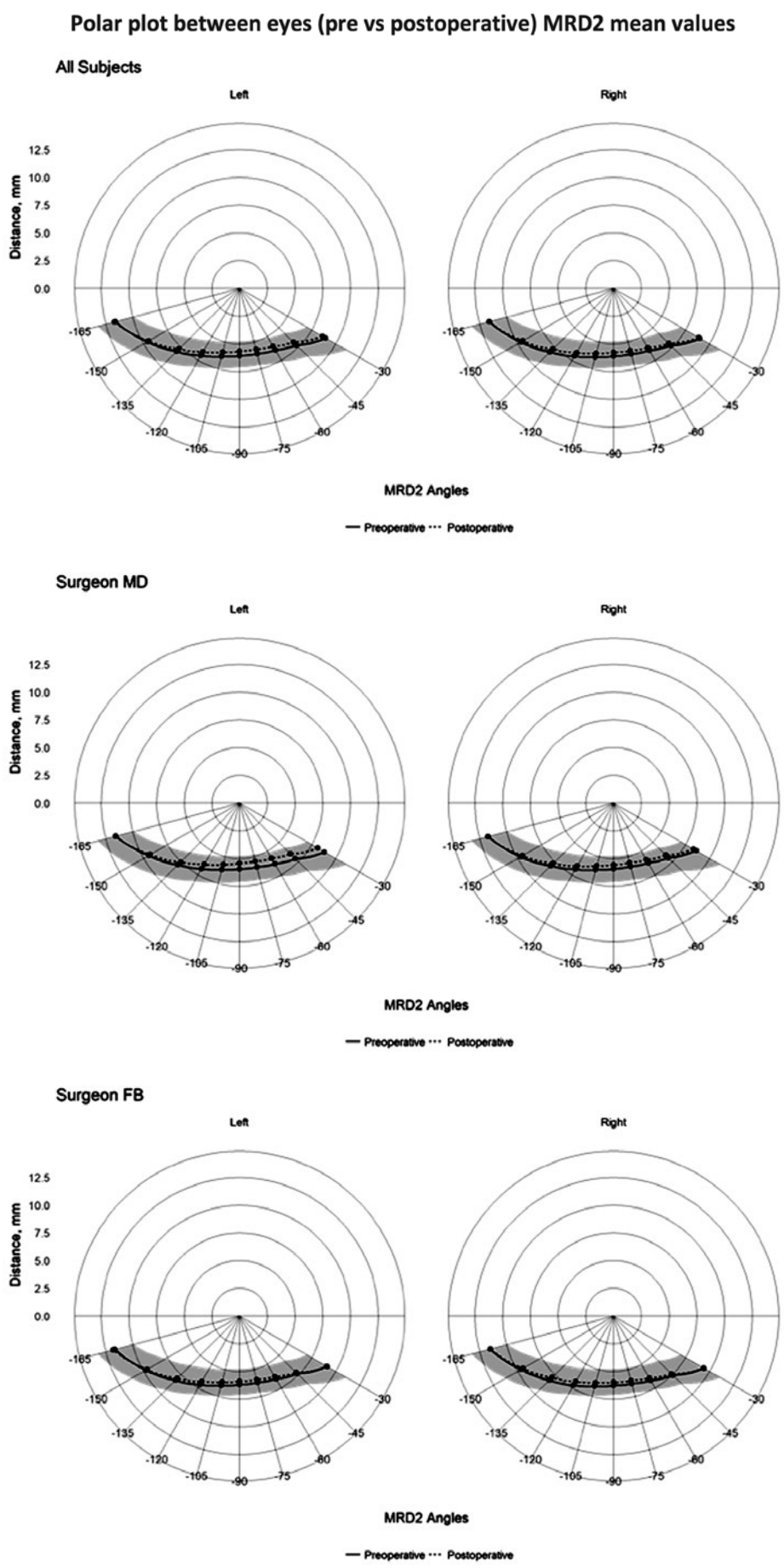
Polar plot between eyes (pre vs postoperative) MRD2 mean values
All Subjects
Left
Right
Distance, mm
12.5
10.0
7.5
5.0
2.5
0.0
-165
-150
-135
-120
-105
-90
-75
-60
-45
-30
MRD2 Angles
Preoperative
Postoperative
Surgeon MD
Left
Right
Distance, mm
MRD2 Angles
Preoperative
Postoperative
Surgeon FB
Left
Right
Distance, mm
MRD2 Angles
Preoperative
Postoperative

Figure 2.

Approach to Brow Lifting

Say Now to the Brow

Julian D Perry MD

A popular TV show depicts brides shopping for wedding gowns and finally deciding on the perfect gown; there is no one size or style that matches the needs of every bride. Browlifting should be considered in the same way. The method of browlifting in each case should be tailored to the individual patient's needs.

Browlifting can be conceived as a compromise between the following elements: the amount of lift, contour of the brow, length of the incisions, location of the incisions, downtime, and cost. Before grouping browlifts as either "cosmetic" or "functional," it is important to realize that each type of browlift has an important cosmetic effect in that the incisions for each type of browlift occur on the face, and each type of browlift changes appearance. All surgical browlifts cause a scar. Some incision locations heal better than others, some scars can be more concealed by hair or other features than others.

Browlift approaches include transblepharoplasty, infra- or supraciliary, forehead rhytid, pretrichial, and posttrichial. The approaches use skin or muscle excision / transposition and/or the release of bony attachments to provide the lift, and they may include the use of an endoscope to release the bony attachments through smaller incisions.

Finding the right balance between brow height, contour, acceptable scarring, healing period, and cost represents a fundamental requisite in the art of browlifting. Several cases will be presented here. For each case, the patient's individual tolerances for each of the compromise elements will be reviewed. Listening to the patient's unique preferences allows the surgeon to calculate the optimal browlift approach, in turn allowing that patient to "say now to the brow."

Face and Neck Lift

Keys to Improving Facelift Regardless of Technique

Michael J Lee MD

I. Five Points of Focus
   A. Facial analysis and understanding of anatomy to know what your aesthetic goals are!
   B. Vectors of pull and sequence of fixation
   C. Managing skin tension
   D. Complimentary procedures to highlight projected points and fill hollows
   E. Difficult necks

II. Facial Analysis
   A. Skin damage and quality
   B. Areas of descent or ptosis
      1. Midface
      2. Jowls
      3. Neck
   C. Soft tissue: areas of fullness or atrophy
   D. Neck
      1. Active or platysma banding
      2. Subplastysma fat
      3. Submandibular glands

III. Points of Adhesion
   A. Parotid masseteric ligaments
   B. Zygomatic ligaments
   C. Maxillary / masseteric ligaments
   D. Mandibular ligaments
   E. Platysma–sternocleidomastoid (SCM)

IV. Techniques
   A. Plication: superolateral or vertical
   B. Deep plane: High and low superficial musculoaponeurotic system (SMAS)
   C. Suture suspension / minimal access cranial suspension (MACS) lift
   D. ± Anterior platysmaplasty

V. Excision or Plication?
   A. Face
      1. Heavy cheeks or submalar area: Excision is most optimal.
      2. Significant submalar atrophy or zygoma flattening: Plication
      3. Significant movement may require elevation of SMAS vs. plication due to tension or too much folding of tissue.
   B. Neck
      1. Heavy neck or submental area may benefit from excision.
      2. Significant laxity may require elevation vs. plication.
   C. Recovery time and risks
   D. Secondary facelifts: Scarring from previous surgeries may complicate excision of SMAS and may allow for a more robust lift from plication alone.

VI. Vertical vs. Superolateral Vectors
   A. Vertical lift addresses face and neck, whereas superolateral vector of face addresses face only.
   B. More reliable in the long term than superolateral plication
      1. Natural movements of the jaw tend to pull on suture line less than superolateral.
      2. Vertical lift bypasses more adhesions, and zygoma is a better point of fixation than the preparotid area.
   C. More natural; tends to distort or elongate the commissures of the mouth less than superolateral
   D. Augmentation of zygoma and subzygoma arch is more beneficial than augmentation of the parotid area.
   E. Asymmetric face may require each technique for different sides.

VII. Deep Plane SMAS vs. Plication
   A. May address midface better for high SMAS technique
   B. Fewer points of unnatural tension
   C. Longevity?
   D. Longer recovery / longer operative time / risks of nerve injury

VIII. Preoperative Markings

A. Zygomatic eminence

B. Anterior masseteric border with clenching

C. Mandibular ligament just lateral to premandibular sulcus

D. Ideal cervicomental crease

E. Submental incision posterior to the submental crease

F. Hyoid

G. Cricoid

H. Medial and lateral platysma bands

IX. Vertical Plication

Key is release of the platysma-SCM and platysma-parotid attachments.

X. Sequence of Fixation

A. If deep plane, then elevation first

B. Fixation of superior SMAS and midface. It is difficult to prevent a lateral sweep if there is not a smooth transition of tension from midface to jaw and neck.

C. Anterior platysmaplasty and myotomy if necessary; neck in neutral position

D. Posterior superior fixation at the mastoid last. If there is too much redundancy in the neck area, this is better corrected after midline plication anatomically to prevent bunching medially or at the midjaw.

XI. Managing Skin Tension and Removal

A. Progressive tension sutures vs. 2 points of tension

1. Traditional tension at the junction of the hair and preauricular area as well as the posterior superior occipital incision: The key is no tension on closure.

2. Multiple levels of fixation with a 4-0 Vicryl can minimize scarring and tension and decrease dead space, as well as early recurrence of skin laxity.

B. Composite flaps

1. Differential tension of skin and SMAS is not possible.

2. May result in wrinkle shift of neck wrinkles to the face based on vector pull

XII. Complimentary Procedures

A. Aging is not merely descent; most benefit from replacement of lost volume in key areas, such as tear trough, medial cheek, and submalar and premandibular areas.

B. Resurfacing procedures to address skin damage

XIII. Difficult Necks

A. Patient selection and managing expectations

B. Weight loss

C. Subplatysma surgery

D. Staged surgeries

XIV. Subplatysmal Surgery: All or Nothing?

A. Subplatysmal fat

B. Anterior digastric muscle shaving

C. Submandibular gland

XV. Key to Best Results

A. Perform facial analysis and know your aesthetic goals.

B. Use differential tightening and vectors to shape face.

C. Manage skin laxity and tension for scars.

D. Add complimentary procedures, specifically volume and resurfacing.

E. Perform detailed analysis and treatment of difficult necks.

Management of Eyelid Lacerations

Raymond I Cho MD

I. History
   A. Mechanism of injury
   B. Timing of injury
   C. Potential for contamination
   D. Pertinent medical history
   E. Prior ocular trauma/conditions
   F. Anticoagulation
   G. Tetanus status

II. Examination
   A. Rule out globe injury
   B. Rule out orbital injury (imaging if indicated)
   C. Rule out presence of foreign bodies
   D. Determine involved structures and extent of damage
      1. Partial- or full-thickness lid lacerations
      2. Canalicular involvement
      3. Canthal tendon involvement
      4. Orbital fat prolapse → potential damage to levator or other orbital structures

III. Surgical Repair
   A. Preoperative considerations
      1. Timing
      2. Location: ER, clinic, OR
      3. Anesthesia
      4. Antibiotics
      5. Involvement of other surgeons
   B. Operative strategy
      1. Irrigation
      2. Exploration – determine
         a. What you have to work with (unroll / stretch out the tissues)
         b. What needs to be reapproximated
         c. Whether anything needs to be replaced
      3. Anatomic checklist
         a. Tarsus
         b. Canaliculi
         c. Canthal tendons
         d. Orbital septum: *do not repair*
         e. Levator
         f. Anterior lamella
      4. Full-thickness lacerations
         a. Square tarsal edges
         b. Approximate lid margin: vertical mattress sutures
         c. Repair tarsus: partial-thickness sutures
         d. Repair anterior lamella
      5. Canalicular lacerations
         a. Stent canaliculus
         b. Approximate cut ends
         c. Resuspend medial canthal tendon if avulsed
         d. Repair remainder of laceration
      6. Tissue loss
         a. Apply basic principles of periocular reconstruction
         b. Minimize tissue debridement
         c. Full-thickness lid segments can be replanted.

Orbital Fractures

Breaking the Mold: Orbit Fractures Revisited

Vikram D Durairaj MD

CASE PRESENTATION

I. Pediatric Orbital Fractures
   A. Presentation
   B. Indications for repair
   C. Surgical approach
   D. Choice of Implant
II. ZMC Fracture
   A. Presentation
   B. Indications for repair
   C. Surgical Approach
   D. Late repair
III. Combined Medial Wall / Orbital Floor Fracture
   A. Surgical approach
   B. Choice of implant

Orbital Foreign Bodies

The Obvious and Not So Obvious

Hui Bae Harold Lee MD

I. Introduction

Orbital trauma with either orbital or intraocular foreign bodies carries significant risk of periocular or orbital infection. Vegetative matter further increases the rate and severity of the infection.

II. Metallic Intraorbital Foreign Bodies (IOrbFBs)

A. The obvious

The more posterior the metallic FB, the poorer the visual outcome.[1]

B. The not so obvious

In the United States, ammunition for air-powered firearms (typically in the form of BB pellets) is typically steel coated with a zinc (Daisy; Chicago, IL) or copper (Crossman; East Bloomfield, NY) alloy and may not need to be removed surgically.[1]

III. Vegetative IOrbFBs

A. The obvious

1. Wooden FB size inversely correlates with time of presentation. In Tas and Top's case series of 32 patients, 72 hours or more had passed before patients presented with wooden FBs that were less than 2 cm in size.[2]
2. Vegetative IOrbFBs should be removed urgently.

B. The not so obvious

1. A common misunderstanding about wooden IOrbFBs is that they have a high or higher incidence of fungal infection.
2. To improve the context of revealing the FB, the window width should be increased to at least 1000 Hounsfield units (HU) to increase the background signal of the orbital fat.

IV. Conclusions

A. Remove anteriorly located IOrbFBs.

B. Leave posterior IOrbFBs.

C. Remove vegetative IOrbFBs whenever possible.

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Robbing Peter to Pay Paul: Approach to Reconstructing Periocular Defects

Tamara R Fountain MD

Introduction

Tissue defects around the eyes may be the result of tumor resection or trauma. Whatever and wherever the defect, the decision about how to close (or not close) the wound is dependent on a number of variables—there is rarely only one option available to a creative surgeon.

Reconstruction of Defects Not Involving the Lid Margin

Direct closure, adjacent tissue flaps, and skin grafts are all options for these wounds. Closure must take into account the resulting tension, and care must be taken to avoid tension that would distort the lid margin.

Reconstruction of Eyelid Margin Defects

Small defects (up to 33%) may be closed directly, while moderate (up to 50%) and large defects will require reformation of both an anterior skin layer and a posterior mucous membrane layer. At least one of these layers must retain its own blood supply.

Reconstruction of Medial Canthal Defects

The medial canthus is a complex area to reconstruct because of topography, the importance of the medial canthal tendon, and the presence of the lacrimal drainage system. Options in this region include direct closure, adjacent tissue flaps, and full-thickness skin grafts. It is also one area where secondary intention healing can be particularly successful. Surgical planning must allow for reconstruction of the lacrimal drainage system where indicated, whether at initial repair or at a later date.

Conclusion

Repairing periocular defects requires an appreciation of anatomy and function. There is often more than one option to achieve surgical success, and the ultimate choice will depend on location and size of the defect, patient age, and surgeon experience or preference. An appreciation of basic principles and experience with multiple closure techniques will enable the ophthalmic surgeon to confidently restore form and preserve function in this complex periocular area.

Anophthalmic Socket Reconstruction

Expansion and Contraction: Managing the Opposing Forces of the Anophthalmic Socket

John D Ng MD

I. Ideal Anophthalmic Socket Conditions
   A. Good volume
   B. Good motility
   C. Moist, healthy, and sufficient surface area
   D. Good fornices
   E. Normal lid tension and positions

II. Socket Contraction
   A. Findings
      1. Poor volume
      2. Poor motility
      3. Decreased surface area
      4. Dry socket
      5. Shallow fornices
      6. Tight lids
   B. Causes
      1. Inflammation
      2. Infection
      3. Trauma
      4. Repeated surgery
      5. Smoking
      6. Diabetes
      7. Radiation
      8. Long-term poor prosthetic care

III. Managing Contracted Volume

   Assess health and vascularization of socket (appearance, texture and malleability, scar density)

   A. If healthy:
      1. Implant exchange
      2. Volume augmentation
   B. If not:
      1. Dermis fat graft
      2. Muscle flap (temporalis muscle)
   C. If severely contracted, microvascular free flap and anaplastic prosthesis may be needed.

IV. Managing Contracted Fornices

   Assess health and vascularization of lids and fornices (appearance, texture, rigidity, malleability)

   A. If healthy:

      Options include stretching with conformers, grafting with acellular dermis matrix, and amniotic membrane.

   B. If less healthy:

      Options include lip / buccal mucosal grafts, hard palate grafts.

   C. Fornix reconstruction sutures ± fornix bolsters
   D. Long-term bolster tarsorrhaphy to decrease early contraction

V. Adjunct Therapy
   A. 5-fluorouracil
   B. Mitomycin C
   C. Steroid injection

VI. General Principles
   A. Avoid excessive dissection.
   B. Reconstruction may need to be staged.
   C. Sometimes doing less is better.
   D. Some sockets are not salvageable enough to fit an ocular prosthetic, and other options need to be considered such as anaplastic prostheses.

VII. Summary

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Complicated Eyelid and Fornix Reconstruction

Thomas E Johnson MD

I. Anophthalmic Socket Contracture
   A. Shortened fornices
   B. Inability to maintain ocular prosthesis
   C. Inability to close eyelids over prosthetic eye
   D. Drying of prosthesis
   E. Entropion with trichiasis

II. Causes of Contracture
   A. Chronic inflammations
   B. Chronic infections
   C. Poor prosthesis hygiene
   D. Prior radiation therapy
   E. Prior trauma with scarring
   F. Thermal or chemical injuries

III. Prevention
   A. Regular prosthesis hygiene and changing
   B. Timely and appropriate treatment of inflammations and infections
   C. Continuous wear of prosthetic eye

IV. Treatments
   A. Entropion repair with tarsal fracture procedures
   B. Mucous membrane grafting
   C. Fornix-deepening sutures
   D. Pressure conformers

An Ocular Surface Specialist's Approach to the Tearing Patient

Stephen C Pflugfelder MD

Tearing is a frequent complaint in certain ocular surface diseases. Cases highlighting relevant features and treatment of these conditions will be presented.

I. Ocular Rosacea

A. Meibomian keratoconjunctivitis accompanies facial rosacea in 35% of cases.[1,2]

B. Symptoms: tearing, burning, and redness that are worse in the morning[3]

C. Signs

1. Lid margin hyperemia, telangiectasia, and notching
2. Marginal keratitis, opacity, and neovascularization
3. May have MG ductal metaplasia
4. Conjunctival injection, papillary reaction, and punctal edema are common.
5. Elevated inferior tear meniscus height (TMH)[3,4]

D. Treat with topical and oral anti-inflammatory therapy, preservative-free dexamethasone initially, meibomian gland directed therapy, intense pulsed light[5-9]

II. Conjunctivochalasis

A. Most common cause of ocular irritation that doesn't respond to conventional therapy

B. Prevalence increases with age[10-12]

C. Commonly accompanied by tearing[13]

D. Lid parallel folds are key diagnostic sign. Often have anteriorly displaced Marx line and elevated inferior TMH.[13,14]

E. Treat with thermocautery or excision (paste, pinch, cut)[11,15,16]

III. Allergy

A. Tearing may be due to chemosis or punctal / canalicular edema (acute) or fibrosis / stenosis (chronic).

B. Signs: injection, tearing, papillary reaction, tarsal fibrosis in chronic cases, punctal edema / stenosis

C. Treat with antihistamine / mast cell stabilizers, topical preservative-free dexamethasone initially, calcineurin inhibitors for atopic / vernal keratoconjunctivitis (AKC/VKC), pulse oral steroids in severe cases[17-19]

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Pouty Punctum and Crowded Canaliculus

Meredith Saylor Baker MD

I. Anatomy of the Proximal Lacrimal System

A. Lacrimal puncta: Two small, round or oval openings on each eyelid

1. Anomalies: agenesis, accessory, etc.
2. Small, slightly posterior → approximation to globe

B. Lacrimal canaliculi: Two on each eyelid (superior and inferior)

1. Vertical ~2 mm ampullae
2. Horizontal ~8 mm
   a. Ninety percent unite to form the common canaliculus, which opens to the lacrimal sac.
   b. But that means 10% do not (Rosenmuller valve at junction of common and lacrimal sac).

C. Lacrimal sac and beyond will be addressed by future talks.

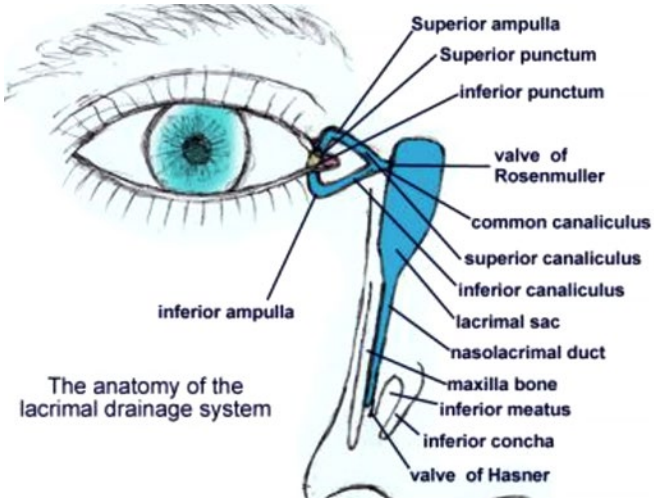

Figure 1. The lacrimal system.

II. Case 1

An 88-year-old white female patient was referred for a ptosis and blepharoplasty and appears to have left inferomedial eyelid edema, erythema (which has been going on "forever" according to her daughter).

Figure 2. "Pouty" punctum.

A. History: "Lacrimal Line-up" or "Allen Asks"

1. "Mechanical": Previous trauma or surgery including punctal plugs (or sinus surgery)
2. "Medication": Previous glaucoma meds, chemotherapy, radioactive iodide
3. "Misc.": Infection, autoimmune, etc.

B. Exam: Slit lamp → pouty punctum with mucopurulent drainage (hold on probing and irrigation due to appearance of "active infection")

C. Treatment: Canaliculotomy with curettage (micro, path, ?stent, postop meds)

III. Case 2

A 45-year-old white female patient, who has seen 3 providers, was referred for chronic redness of the lower lid as well as ocular irrigation and epiphora on the left.

A. History: Multiple punctal plugs "many" years ago

B. Exam: Unable to probe or irrigate the left lower; "soft stop." Left upper, right upper and lower normal, with hard stop and no reflux on irrigation.

C. Treatment: OR—canaliculus "cut-down" and "pigtail" stent

Figure 3. Pigtail probe.

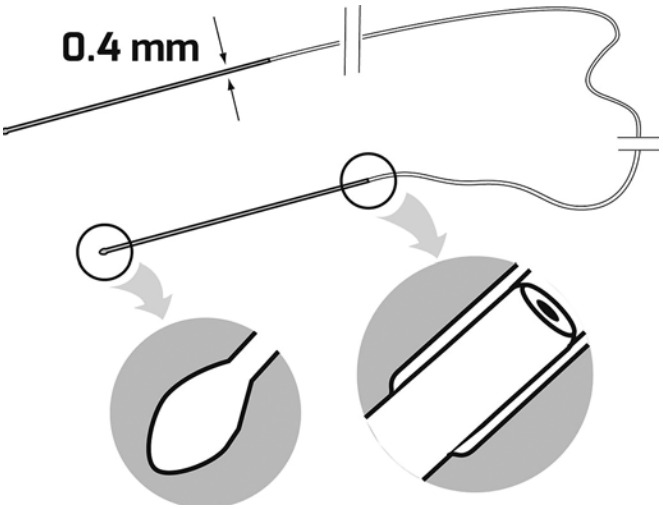

Figure 4. Bicanalicular stent.

IV. Case 3

A 53-year-old female patient with a history of thyroid eye disease (status post radioactive iodine, I-131) presented with bilateral epiphora.

A. History: I-131

B. Exam: Probing on right showed a hard stop, confirming patency of the upper and lower canaliculi, but complete nasolacrimal duct obstruction (discussed more in the future). Probing on left showed lower canalicular stenosis and partial nasolacrimal duct obstruction.

C. Treatment: Thorough preoperative counseling, followed by:

1. External dacryocystorhinostomy with stents on the right
2. Bicanalicular probing and stenting on the left

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Battling the Obstructed Duct

Roger A Dailey MD

Lacrimal outflow obstruction causing chronic or intermittent epiphora is a common and sometimes perplexing problem to correctly diagnose and manage. In this presentation, I plan to review our standard approach to diagnosis and management of the common lower and upper lacrimal outflow problems. I will specifically review endoscopic dacryocystorhinostomy (DCR) and endoscopic conjunctivodacryocystorhinostomy (CDCR). I will also present a more detailed discussion of recent changes in the Jones tube design, as well as how to manage the tube postoperatively in the office. Using these methods, we have seen remarkably successful results in the reduction and/or elimination of symptomatic tearing, with minimal significant complications.

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Something Lurking Beyond: Lacrimal Sac Tumors

Erin M Shriver MD

I. Lacrimal Sac Tumors

A. Usually primary, rare compared to other orbital tumors

B. Most commonly of epithelial origin

C. Squamous papilloma (most common), then squamous cell carcinoma, and non-Hodgkin B-cell lymphoma

II. Lacrimal Sac Papillomas

A. Three types: squamous, transitional cell, and mixed cell

B. Two main growth patterns: exophytic and endophytic (higher rate of recurrence or malignant transformation)

C. The majority of squamous papillomas are associated with HPV (types 6 and 11).

D. Recurrence has been reported to be approximately 50% and usually occurs in area of previous excision.

E. Half of inverted papillomas progress into invasive carcinomas if untreated.

III. Lacrimal Sac Carcinomas

A. Arise de novo (most common) or from a papilloma

B. Squamous and transitional cell carcinomas are the most common.

C. Other types include adenocarcinoma, oncocytic adenocarcinoma, mucoepidermoid, poorly differentiated, and adenoid cystic carcinoma.

IV. Presentation

A. May be confused with dacryocystitis

B. A neoplasm of the lacrimal sac is usually progressive, firm, often superior to the medial canthal tendon.

C. Rarely associated with inflammatory signs, fluctuance, or purulent discharge

D. Hemolacria is more common in malignant than in benign lacrimal sac neoplasms.

E. It is important to determine if the nasolacrimal duct or canaliculi are involved.

V. Diagnosis

A. Imaging modalities include CT, MRI, and dacryocystogram; initially well-circumscribed within lacrimal sac walls

B. Biopsy: Avoid creating a bony ostium if suspicion for a lacrimal sac tumor.

VI. Management

A. Varies depending on the clinical presentation, radiologic findings, and pathologic diagnosis

B. Primary neoplasms should be managed by complete surgical resection, as should papillomas because of their malignant potential.

C. Orbitotomy, orbital exenteration, nasolacrimal duct resection, ethmoidectomy, medial maxillectomy, radiation, and/or chemo, depending on the diagnosis and extent of the tumor

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