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Eyelid Surgery

Clinical Policy Bulletins | Medical Clinical Policy Bulletins

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Last Review
03/19/2025
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Review History

Definitions

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Policy

Scope of Policy

This Clinical Policy Bulletin addresses eyelid surgery.

I. **Medical Necessity**

A. *Upper Lid Blepharoplasty*

Upper Lid Blepharoplasty is considered medically necessary for *any* of the following indications:

1. To correct prosthesis difficulties in an anophthalmia socket; *or*
2. To remove excess tissue of the upper eyelid causing functional visual impairment when the following criteria are met:

    a. Photographs* taken within the past 12 months in straight gaze show redundant eyelid tissue overhanging the upper eyelid margin or resting on or pushing down on the eye lashes; *and*
    b. Documentation of visual field testing** within the past 12 months, performed with and without the eyelid or brow taped, showing *both* of the following:

        i. A superior visual field of 30 degrees or less prior to taping; *and*
        ii. *Either* of the following after taping of the eyelids:

            i. an increase in superior visual fields of 12 degrees or more; *or*
            ii. a 30 percent or greater increase in superior visual fields; *or*

3. To relieve painful symptoms of blepharospasm; *or*
4. To treat peri-orbital sequelae of thyroid disease and nerve palsy, and peri-orbital sequelae of other nerve palsy (e.g., the oculomotor nerve).

Note: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

B. *Lower Lid Blepharoplasty*

Lower Lid Blepharoplasty is considered medically necessary for *any* of the following indications

1. To correct prosthesis difficulties in an anophthalmia socket; *or*

2. To relieve excessive lower lid bulk only if proper positioning of prescription eyeglasses is precluded and is secondary to conditions such as:

   a. Chronic systemic corticosteroid therapy;; *or*
   b. Dermatomyositis; *or*
   c. Graves' disease; *or*
   d. Myxedema; *or*
   e. Nephrotic syndrome; *or*
   f. Polymyositis; *or*
   g. Scleroderma; *or*
   h. Sjögren's syndrome; *or*
   i. Systemic lupus erythematosus.

Notes: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

Excess tissue beneath the eye rarely obstructs vision, so the lower lid blepharoplasty is rarely considered medically necessary for functional visual impairment.

C. *Upper Lid Ptosis Surgery*

Ptosis (blepharoptosis) repair for laxity of the muscles of the upper eyelid causing functional visual impairment when the following criteria are met:

1. Photographs* taken within the past 12 months of the individual looking straight ahead demonstrating the eyelid at or below the upper edge of the pupil; *and*
2. Documentation of visual field testing** within the past 12 months, performed with and without the eyelid or brow taped, showing *both* of the following:

   a. A superior visual field of 30 degrees or less prior to taping; *and*
   b. *Either* of the following after taping of the eyelids:

i. an increase in superior visual fields of 12 degrees or more; *or*

ii. a 30 percent or greater increase in superior visual fields; *and*

3. Documentation in the medical records of the margin reflex difference*** (distance from the upper lid margin to the reflected corneal light reflex at normal gaze) of 2 mm or less with the eyes in a straight gaze.

Note: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

D. *Brow Ptosis Surgery*

Brow ptosis repair for laxity of the forehead muscles causing functional visual impairment is considered medically necessary when the following criteria are met:

1. Photographs* taken within the past 12 months show the eyebrow below the supra-orbital rim; *and*
2. Documentation of visual field testing** within the past 12 months, performed with and without the eyelid or brow taped, showing *both* of the following:

   a. A superior visual field of 30 degrees or less prior to taping; *and*

   b. *Either* of the following after taping of the eyelids:

      i. an increase in superior visual fields of 12 degrees or more; *or*

      ii. a 30 percent or greater increase in superior visual fields; *and*

3. Brow ptosis is causing a functional impairment of upper/outer visual fields with documented interference with vision or visual field related activities such as difficulty reading due to upper eyelid drooping, looking through the eyelashes or seeing the upper eyelid skin.

Note: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

E. *Ectropion / Entropion Repair*

Eyelid ectropion or entropion repair is considered medically necessary to repair defects predisposing to corneal or conjunctival injury due to ectropion (eyelid turned outward), entropion (eyelid turned inward), or pseudo-trichiasis (inward direction of eyelashes due to entropion) when selection criteria are met.

1. Selection Criteria for Ectropion

Clear high-quality, clinical photographs* must document the presence of an ectropion, and corneal or conjunctival injury with *both* of the following:

a. Subjective symptoms including either excess tearing, or pain/discomfort; *and*
b. Any *one* of the following:

i. Corneal ulcer
ii. Exposure keratitis
iii. Kerato-conjunctivitis

2. Selection Criteria for Entropion

Clear high-quality, clinical photographs* must document:

Lid turned inward; and at least *one* of the following:

a. Trichiasis or irritation of cornea or conjunctiva; *or*
b. Subjective symptoms including either excessive tearing, or pain/discomfort.

Note: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

F. *Upper Eyelid Tightening Procedures*

Block resection or tarsal strip with lateral canthal tightening are considered medically necessary for members who have:

1. Refractory corneal or *c*onjunctival inflammation related to exposure from floppy eyelid syndrome.

Note: For members with unilateral disease meeting criteria for the above-listed procedures, surgery of the contralateral eye may be considered medically necessary to obtain symmetry.

* **Note:** Where medical necessity criteria indicate need for photographs, photos must be taken with the eyes not dilated or squinting. Photos are to be taken at eye level and depicting a frontal view. Photos must be of sufficient quality to show the light reflex on the cornea, and demonstrate the lid margins in relation to the pupil. Excess upper eyelid skin, upper eyelid ptosis, or brow ptosis can be present alone or in any combination, and each may require correction. If both a blepharoplasty and ptosis repair are requested, 2 photographs may be necessary to demonstrate the need for both procedures: 1 photograph should show the excess skin above the eye resting on the eyelashes, and a second photograph should show persistence of lid lag, with the upper eyelid crossing or slightly above the pupil margin, despite lifting the excess skin above the eye off of the eyelids with tape. If all 3 procedures (i.e., blepharoplasty, blepharoptosis repair, and brow ptosis repair) are requested, 3 photographs may be necessary.

** **Note:** A normal, unobstructed superior visual field measures approximately 45 to 50 degrees. A superior visual field of 30 degrees or less corresponds to a functional superior visual field loss. Surgery is indicated for persons with a superior visual field of 30 degrees or less if there is an increase of 12 degrees or more, or a 30 percent or greater increase, in superior visual fields after taping of the eyelids. This is illustrated by the following examples:

Example A: A visual field of 25 degrees that increases to 37 degrees after taping would meet visual field criteria for surgery.

Example B: A visual field of 30 degrees that increases to 39 degrees after taping would meet visual field criteria for surgery.

Visual field testing should be performed within the past 12 months. Visual field testing may be completely automated (such as Humphrey Visual Field), or performed by a technician with or without the assistance of a machine (such as Goldmann Perimetry). Both taped and un-taped visual fields need to be submitted for each eye for requested surgery.
*** **Note:** A margin to reflex distance (MRD) of 2 mm corresponds to a superior visual field impairment of 12-15 degrees. Thus, a baseline superior visual field of 30-35 degrees corresponds to an MRD of 2 mm.

G. *Congenital Ptosis Surgery*

Aetna considers surgical correction of congenital ptosis medically necessary to allow proper visual development in infants and children when the following criteria are met:

1. Infant or child has congenital ptosis (present at birth and detected within the first year of life); *and*
2. Ptosis interferes with field of vision (visual field testing not required); *and*
3. Child has abnormal head posture (e.g., head tilt or turn, chin up or chin down), amblyopia or strabismus.

II. Experimental, Investigational, or Unproven

A. *Periorbital Microcystic Lymphatic Malformation with Blepharoptosis*

Aetna considers intralesional bleomycin injection experimental, investigational, or unproven for the treatment of periorbital microcystic lymphatic malformation with blepharoptosis because its effectiveness has not been established.

B. *Combinational Therapies*

Aetna considers combined early (90 days after onset of facial palsy) lower eyelid surgery with neuromuscular retraining experimental, investigational, or unproven for synkinesis prevention after facial palsy because the effectiveness of this approach has not been established.

Aetna considers combined injection of platelet-rich fibrin and hyaluronic acid experimental, investigational, or unproven for the treatment of actinic elastosis of the lower eyelids because the effectiveness of this approach has not been established.

III. **Cosmetic**

Congenital Ptosis

Surgery is considered cosmetic if performed for mild ptosis that is only of cosmetic concern.

IV. **Related CMS Coverage Guidance**

This Clinical Policy Bulletin (CPB) supplements but does not replace, modify, or supersede existing Medicare Regulations or applicable National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs). The supplemental medical necessity criteria in this CPB further define those indications for services that are proven safe and effective where those indications are not fully established in applicable NCDs and LCDs. These supplemental medical necessity criteria are based upon evidence-based guidelines and clinical studies in the peer-reviewed published medical literature. The background section of this CPB includes an explanation of the rationale that supports adoption of the medical necessity criteria and a summary of evidence that was considered during the development of the CPB; the reference section includes a list of the sources of such evidence. While there is a possible risk of reduced or delayed care with any coverage criteria, Aetna believes that the benefits of these criteria – ensuring patients receive services that are appropriate, safe, and effective – substantially outweigh any clinical harms.

Code of Federal Regulations (CFR): 42 CFR 417; 42 CFR 422; 42 CFR 423.

Internet-Only Manual (IOM) Citations: CMS IOM Publication 100-02, Medicare Benefit Policy Manual; CMS IOM Publication 100-03 Medicare National Coverage Determination Manual.

Medicare Coverage Determinations: Centers for Medicare & Medicaid Services (CMS), Medicare Coverage Database [Internet]. Baltimore, MD: CMS; updated periodically. Available at: Medicare Coverage Center (https://www.cms.gov/medicare/coverage/center?redirect=/center/coverage.asp). Accessed November 7, 2023.

V. **Related Policies**

For oxymetazoline hydrochloride opthalmic solution (Upneeq) refer to pharmacy benefit plan.

See also:

- CPB 0031 - Cosmetic Surgery (../1_99/0031.html).

Applicable CPT / HCPCS / ICD-10 Codes

Code	Code Description
Blepharoplasty:	
CPT codes covered if selection criteria are met:	
15820	Blepharoplasty, lower eyelid
15821	with extensive herniated fat pad [excess tissue beneath the eye rarely obstructs vision so lower lid blepharoplasty is rarely covered for this indication]
15822	Blepharoplasty, upper eyelid

Code	Code Description
15823	with excessive skin weighing down lid
Other CPT codes related to the CPB:	
21280	Medial canthopexy
21282	Lateral canthopexy
61330	Decompression of orbit only, transcranial approach
67414	Orbitotomy without bone flap (frontal or transconjunctival approach); with removal of bone for decompression
67445	Orbitotomy with bone flap or window, lateral approach (e.g., Kroenlein); with removal of bone for decompression
67950	Canthoplasty (reconstruction of canthus)
ICD-10 codes covered if selection criteria are met:	
C44.101 - C44.1992	Other and unspecified malignant neoplasm of skin of eyelid, including canthus
D21.0	Benign neoplasm of connective and other soft tissue of head, face and neck [Medial or lateral canthus]
H02.001 - H02.059	Entropion and trichiasis of eyelid
H02.831	Dermatochalasis of right upper eyelid
H02.834	Dermatochalasis of left upper eyelid
H04.201 - H04.219	Epiphora unspecified as to cause and due to excess lacrimation
H05.89	Other disorders of orbit [Endocrine exophthalmos]
Z85.828	Personal history of other malignant neoplasm of skin [medial or lateral canthus]
Z86.018	Personal history of other benign neoplasm [medial or lateral canthus]
Ptosis repair:	
CPT codes covered if selection criteria are met:	
67900	Repair of brow ptosis (supraciliary, mid-forehead or coronal approach)
67901	Repair of blepharoptosis; frontalis muscle technique with suture or other material (e.g., banked fascia)

Code	Code Description
67902	frontalis muscle technique with autologous fascial sling (includes obtaining fascia)
67903	(tarso) levator resection or advancement, internal approach
67904	(tarso) levator resection or advancement, external approach
67906	superior rectus technique with fascial sling (includes obtaining fascia)
67908	conjunctivo-tarso-Muller's muscle-levator resection (e.g., Fasanella-Servat type)
67909	Reduction of overcorrection of ptosis
Other CPT codes related to the CPB:	
11900 - 11901	Injection, intralesional
92081 - 92083	Visual field examination [not routinely necessary for excess upper eyelid skin, upper eyelid ptosis, or brow ptosis]
ICD-10 codes covered if selection criteria are met:	
H02.401 - H02.439	Ptosis of eyelid [causing functional visual impairment]
Q10.0	Congenital ptosis [moderate to severe]
Intralesional bleomycin injection:	
HCPCS codes not covered for indications listed in the CPB:	
J9040	Injection, bleomycin sulfate, 15 units
ICD-10 codes not covered for indications listed in the CPB:	
I89.9	Other specified noninfective disorders of lymphatic vessels and lymph nodes [peri-orbital microcystic lymphatic malformation with blepharoptosis]
Q15.8	Other specified congenital malformations of eye [peri-orbital microcystic lymphatic malformation with blepharoptosis]
Combinational therapies:	
CPT codes not covered for indications listed in the CPB:	
Combined lower eyelid surgery with neuromuscular retraining, combined injection of platelet-rich fibrin and hyaluronic acid- no specific code	
0232T	Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed

Code	Code Description
Other CPT codes related to the CPB:	
0232T	Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed
15820	Blepharoplasty, lower eyelid
15821	Blepharoplasty, lower eyelid; with extensive herniated fat pad
97112	Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities
HPCPS codes not covered for indications listed in the CPB:	
G0460	Autologous platelet rich plasma (PRP) or other blood-derived product for nondiabetic chronic wounds/ulcers (includes, as applicable: administration, dressings, phlebotomy, centrifugation or mixing, and all other preparatory procedures, per treatment)
P9020	Platelet rich plasma, each unit
ICD-10 codes not covered for indications listed in the CPB:	
G51.0	Facial palsy
G51.8	Other disorders of facial nerve [synkinesis]
L57.8	Other skin changes due to chronic exposure to nonionizing radiation [actinic elastosis]
P11.3	Facial palsy due to birth injury
Ectropion repair:	
CPT codes covered if selection criteria are met:	
67914	Repair of ectropion; suture
67915	thermocauterization
67916	excision tarsal wedge
67917	extensive (eg, tarsal strip operations)
ICD-10 codes covered if selection criteria are met:	
H02.101-H02.139	Ectropion of eyelid
H02.151 - H02.159	Paralytic ectropion
Q10.1	Congenital ectropion

Code	Code Description
Entropion repair:	
CPT codes covered if selection criteria are met:	
67921	Repair of entropion; suture
67922	thermocauterization
67923	excision tarsal wedge
67924	extensive (eg, tarsal strip or capsulopalpebral fascia repairs operation)
ICD-10 codes covered if selection criteria are met::	
H02.001 - H02.039	Entropion of eyelid
Q10.2	Congenital entropion

Background

Blepharoplasty refers to surgery to remove excess skin and fatty tissue around the eyes. Blepharochalasis is a term used to refer to loose or baggy skin (dermatochalasis) above the eyes, so that a fold of skin hangs down, often concealing the tarsal margin when the eye is open. In severe cases, excess skin and fat above the eyes can sit on the upper eyelid and may obstruct the superior field of vision. Blepharochalasis may cause pseudoptosis (false ptosis), where the patient has a normal ability to elevate the eyelid, but bagging skin above the eye overhangs the eyelid margin, resembling ptosis. In some cases, excess skin around the eye may cause the eyelashes to turn in and to irritate the eye, or turn outward, resulting in exposure keratitis.

Surgical removal of these overhanging skin folds may improve the function of the upper eyelid and restore peripheral vision. Blepharoplasty is also performed for cosmetic reasons to improve a sagging, tired appearance, and is the second most common aesthetic procedure

performed by plastic surgeons. For coverage of this procedure, photographs in straight gaze should show sagging tissue above the eyes that is resting on or pushing down on the eyelashes.

Blepharoplasty to remove excess tissue either above or below the eyes may also be medically necessary and covered to correct prosthesis difficulties in an anophthalmia socket, to repair defects caused by trauma or tumor-ablative surgery, to correct an entropion (inward turned eyelid) or ectropion (outward turned eyelid), to treat peri-orbital sequelae of thyroid disease and nerve palsy, and to relieve painful blepharospasm.

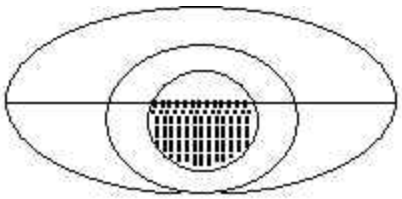
Ptosis (also called blepharoptosis) is the term for drooping of one or both upper eyelids. This may occur in varying degrees from slight drooping to complete closure of the involved eyelid. In the most severe cases, the drooping can obstruct the visual field and cause positional head changes. There are 2 types of ptosis: acquired and congenital.

Acquired ptosis is more common. Congenital ptosis is present at birth. Ptosis may occur because the levator muscle's attachment to the lid is weakening with age. Acquired ptosis can also be caused by a number of different things, such as disease that impairs the nerves, diabetes, injury, tumors, inflammation, or aneurysms. Congenital ptosis may be caused by a problem with nerve innervation or a weak muscle. Drooping eyelids may also be the result of diseases such as myotonic dystrophy or myasthenia gravis. The primary symptom of ptosis is a drooping eyelid. Adults will notice a loss of visual field because the upper portion of the eye is covered. Children who are born with a ptosis usually tilt their head back in an effort to see under the obstruction. Some people raise their eyebrows in order to lift the lid slightly and therefore may appear to be frowning.

Diagnosis of ptosis is usually made by observing the drooping eyelid. Ptosis is usually treated surgically. Surgery can generally be done on an outpatient basis under local anesthetic. For minor drooping, a small amount of the eyelid tissue can be removed. For more pronounced ptosis the approach is to surgically shorten the levator muscle or connect the lid to the muscles of the eyebrow. Or, the aponeurosis can be re-attached to the tarsal plate if it had separated. Correcting the ptosis is usually done only after determining the cause of the condition.

Ptosis (blepharoptosis) repair for laxity of the muscles of the upper eyelid causing functional visual impairment is covered when photographs in straight gaze show the eyelid margin across the midline or at the most 1 or 2 mm above the midline of the pupil (see Figure).

Figure: Diagram of upper lid margin crossing the pupil



To demonstrate the medical necessity of both blepharoplasty and ptosis (blepharoptosis) repair, 2 sets of photographs may be needed. One set of photographs (front and side views) should demonstrate the excess skin above the eyes resting on the eyelashes. A second set of photographs should be taken with the excess skin lifted off of the eyelashes (such as by taping the excess skin to the forehead), and demonstrating persistence of ptosis with the lid margin across the midline of the pupil or 1 to 2 mm above the pupil midline.

Brow ptosis refers to sagging tissue of the eyebrows and/or forehead. In extreme cases, brow ptosis can obstruct the field of vision. Brow ptosis is caused by aging changes in the forehead muscle and skin, which leads to weakening of these tissues and sagging of the eyebrows. Brow ptosis is treated surgically with the specific operation being based on the amount and location of the brow ptosis.

Brow ptosis surgery is usually performed under local anesthesia as an outpatient procedure. Excess skin and muscle is excised and the deep tissues are sutured together. Brow ptosis repair for laxity of the forehead muscles causing functional visual impairment is covered when photographs show the eyebrow below the supra-orbital rim.

Often brow ptosis coexists with eyelid ptosis and dermatochalasis; in these cases, ptosis surgery and blepharoplasty may be performed at the time of the brow ptosis surgery. The medical necessity of each surgical procedure may need to be demonstrated with separate photographs: 1

photograph should show the eyebrow below the supra-orbital rim, a second photograph with the sagging forehead lifted up in order to see the sagging tissue above the eye resting on the eyelashes, and then a third with the sagging tissue lifted off of the eyelid in order to see the persistent lid lag (ptosis).

Canthoplasty, also known as inferior retinacular suspension or lateral retinacular suspension, involves tightening the muscles or ligaments that provide support to the outer corner of the eyelid. This procedure may be medically necessary where drooping of the outer corner of the eyelid interferes with vision.

Visual field testing measures the entire scope of vision by creating an individual "map" of each eye. With one eye covered, the individual responds to light and/or various intensities of movement by pushing a button, allowing the computer to generate a map of the visual fields. Testing may be completely automated or performed by a technician with or without the assistance of a machine. Testing the central 24 degrees or 30 percent of the visual field is most commonly used.

Visual field testing alone is not sufficient to determine the presence of excess upper eyelid skin, upper eyelid ptosis, or brow ptosis. A patient could cause a visual field defect by lowering their lids during the test. Photographs that document eyelids crossing the pupils provide additional support for the need of surgery.

If visual field tests are performed, the tests should show loss of 2/3 or greater of a visual field in the upper or temporal areas documented by computerized visual field studies, with visual field restored by taping or holding up the upper lid.

An UpToDate review on ptosis (Lee, 2013) states that "In patients with third nerve [oculomotor nerve] palsy, an interval of 6 to 12 months before surgical intervention is advised because many will have spontaneous recovery. Similarly, patients with MG [myasthenia gravis] should have stable disabling ptosis for several months on maximal medical therapy before considering surgical therapy".

Hollander and associates (2019) noted that various functional outcomes after upper blepharoplasty have been reported in the literature. In a systematic review, these investigators examined the literature to evaluate the objective and subjective functional effects of upper blepharoplasty. After a systematic search of 4 search engines (PubMed, Embase, Cinahl and Cochrane), any study on objective and subjective (patient reported) functional outcome after upper blepharoplasty was subjected to a quality assessment for possible inclusion in the review. The intervention was defined as a solitary surgical upper blepharoplasty containing the removal of skin, with or without the removal of a strip of orbicularis oculi muscle and/or upper orbital fat. Eligible studies were randomized controlled trials (RCTs), controlled trials, cohort studies and case series (n of greater than or equal to 10). A total of 3,525 studies were assessed, of which 28 studies were included in this systematic review. Favorable outcomes after an upper blepharoplasty were reported and included enlarged visual field, enhanced quality of life (QOL) related to fewer headaches and improved vision. Furthermore, sensitivity of the eyelids decreased, with differences in recovery. Outcomes for eyebrow height, astigmatism, contrast sensitivity and eyelid kinematics were not consistent between the studies. No meta-analysis could be performed due to the limited scope of included studies and the great variety in outcomes and blepharoplasty techniques. The authors concluded that upper blepharoplasty was accompanied by a great variety of beneficial functional outcomes including an increased visual field and improvement in headache- and vision-related QOL. Moreover, these researchers stated that further research is needed, especially where results were conflicting (effects on eye dryness and eyebrow height) and/or the data were limited (contrast sensitivity, astigmatism).

Hollander and colleagues (2020) stated that although upper blepharoplasty is a common cosmetic surgical intervention, a better scientific understanding of the aesthetic results and the preferred surgical technique to achieve the best aesthetic results is still needed. These investigators carried out a systematic search using 4 search engines (PubMed, Embase, CINAHL, and Cochrane) to identify any study on the aesthetic outcome of a solitary upper blepharoplasty; these were subjected to quality assessment for possible inclusion. Eligible studies were RCTs, controlled studies, cohort studies, and case series (n of greater than or equal to 10). A total of 4,043 studies were examined, of

which 26 were included. Aesthetic outcomes included patient-reported outcome measures, scarring, eyebrow height, tarsal platform show, and panel or expert evaluation; meta-analysis was not possible. Patients were generally satisfied with the aesthetic result and scar formation after an upper blepharoplasty. The amount of tarsal platform showed increases, which positively affected the aesthetics. The eyebrow appeared to move down slightly. The surgical technique used (skin only or skin/muscle removal) did not influence patient satisfaction or the physician-assessed aesthetic outcomes. Patients were generally satisfied after an upper blepharoplasty. The authors concluded that the optimal design of the skin excision is still a matter of debate, especially when addressing lateral hooding; further objective research is advised.

Botulinum Toxin Type A (Botox)-Induced Ptosis

King (2016) noted that in aesthetic medicine, ptosis is almost exclusively related to the inadvertent injection of botulinum toxin type A (Botox) into an unwanted area leading to muscle weakness and a resultant droop, especially in the hands of an inexperienced injector. Depending on the area treated, ptosis can affect the brow resulting in a lowering of the eyebrows, which produces a poor cosmetic result but can also lead to a significant descent of the eyebrows that may interfere with vision. Upper lid ptosis may occur when treating the glabellar complex and Botox diffuses through the orbital septum and affects the lid elevator muscle either as it traverses the pre-periosteal plane, or the toxin may track along tributaries of the superior ophthalmic vein. This may result in a drooping of the upper lid with the patient unable to fully open the eye, a poor cosmetic result that may interfere with normal vision.

For individuals being considered for ptosis repair surgery, they should not have had botulinum toxin type A (Botox) injection in the forehead in past 6 months.

Intralesional Bleomycin Injection

Yang et al (2015) stated that peri-orbital microcystic lymphatic malformations (LM) can cause severe symptoms, such as blepharoptosis, amblyopia, chemosis, strabismus, diminished vision, and blindness. In a retrospective study, these researchers evaluated the clinical outcome in

peri-orbital microcystic LM patients with blepharoptosis who underwent surgical treatment combined with intralesional bleomycin injection. A total of 9 patients diagnosed as peri-orbital microcystic LM with blepharoptosis were included in this study. All of them underwent surgical treatment and bleomycin injection from January 2010 to January 2014. The lesion was resected through the lower eyebrow and/or a coronal incision at the first stage, and levator resection was performed at the second stage. Any persistent lesion or its recurrence was managed by intralesional bleomycin injection. Blepharoptosis and visual obstruction were corrected in all patients. Mean follow-up was 24.6 months; 6 patients had recurrence during follow-up; and 2 patients who had partial eyelid closure after the second stage surgery recovered in 3 months. Amblyopia, astigmatism, and strabismus were not improved after treatment. All patients had excellent aesthetic improvement and corrected blepharoptosis. The authors concluded that resection through a lower eyebrow and coronal incision and levator resection performed in 2 stages can quickly correct the visual impairment caused by peri-orbital microcystic LM with blepharoptosis. They stated that intralesional bleomycin injection is a promising adjunctive therapy for residual or recurrent lesions after surgery.

Eyelid Surgery for Upper Visual Field Improvement

On behalf of the American Society of Plastic Surgeons, a group of experts from different disciplines was convened to develop guidelines for the management of upper visual field impairments related to eyelid ptosis and dermatochalasis (Kim et al, 2022). The objective was to provide evidence-based recommendations to improve patient care. A multi-disciplinary group of experts representing their specialty organizations was selected. They carried out a systematic review including topics regarding documentation of the underlying cause for visual field impairment, selection of an appropriate surgical repair, assessment of the type of anesthesia, the use of adjunctive brow procedures, and follow-up assessments. The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) methodology process was employed to examine the relevant studies. Clinical practice recommendations were developed using BRIDGE-Wiz (Building Recommendations In a Developers' Guideline Editor) software. Each topic area was assessed. A clinical recommendation was made, and the

relevant literature was discussed. The authors concluded that the review of the literature revealed varied complication rates and diverse treatment modalities for the correction of upper visual field deficit. Strong recommendations could not be rendered in most topic areas because of a paucity of methodologically sound studies in the literature. These investigators stated that more rigorously designed studies are needed to examine outcomes of interest, with fewer sources of potential error or bias. Level of Evidence = V.

The guideline provided the following recommendations:

- The workgroup suggests that surgeons perform concurrent upper eyelid blepharoplasty and ptosis correction in patients presenting with ptosis and dermatochalasis (excess upper eyelid soft tissue hooding). (Low level of evidence; weak recommendation)
- The workgroup suggests that surgeons perform upper eyelid blepharoplasty in patients presenting with dermatochalasis without underlying ptosis. (Low level of evidence; weak recommendation)
- It is an option for surgeons to perform adjunctive brow surgery in patients presenting with dermatochalasis and co-existing brow and upper eyelid ptosis. (Low level of evidence; option)
- It is an option for surgeons to perform levator plication or levator advancement for patients presenting with upper eyelid ptosis. (Very low level of evidence; option)

Upper Eyelid Blepharoplasty

Rodrigues et al (2023) noted that upper eyelid blepharoplasty is a surgical procedure that aims to correct the typical changes that occur with aging to the peri-orbital area. The outcomes of this surgery are aesthetic, as well as functional. Many studies have described an impact on the cornea, intra-ocular pressure (IOP), dry eye syndrome, and visual quality. In a systematic review , these investigators compared the different surgical techniques and their outcomes. They carried out a literature review via online databases PubMed, Web of Science, Clinicaltrials.gov, and CENTRAL libraries. Information was collected regarding the surgery techniques and the functional and aesthetic outcomes as well as complications of the interventions. A total of 6 types

of upper blepharoplasty surgery were studied. Data were analyzed using Cochrane RevMan. A total of 20 studies were included in this systematic review and 9 in the meta-analysis. These researchers presented results on IOP, central corneal thickness (CCT), flattest keratometry, steepest keratometry, corneal astigmatism, visual acuity (VA), Schirmer test 1 and 2, tear film break-up time 9TBUT), and the ocular surface disease index questionnaire, according to type of surgery. This meta-analysis showed no significant results. The authors concluded that no significant results were found; however, many studies reported an impact of upper blepharoplasty surgery in the outcomes studied. Only a small number of complications were reported, and patients were satisfied with the aesthetic outcomes. Level of Evidence = III.

Small-Incisional Techniques for Double-Eyelid Blepharoplasty

Yu et al (2023) stated that small-incisional double-eyelid surgery has increasingly gained popularity. In the published studies, the number of incisions, the debulking method, and the pre-tarsal fixation differ significantly among studies. In a systematic review, these researchers examined the different techniques and compared their surgical results and complications. They carried out a literature review using the PubMed and Cochrane databases from their inception to June 1, 2022. Clinical studies of small-incisional blepharoplasty with available full-text and extractable data were included and were grouped depending on the number of incisions. The number, length, and location of the incisions, debulking method, fixation technique, and skin closure were concluded. The complications were statistically analyzed and compared. A total of 13 studies and 4,177 patients were eligible for reviewing, among which 5 studies (2,460 patients) described single-incisional technique, 2 studies (645 patients) described 2-incisional technique, 5 studies (700 patients) described 3-incisional technique, and 1 study (372 patients) described 4-incisional technique. Through the small incisions, the pre-tarsal soft tissue can be removed as appropriate, and the pre-tarsal fixation can be firm and exact. Both the 1- and 3-incisional studies had a pooled total complication rate of 5 %; and a pooled fold-loss rate of 2 %. No significant difference was found between groups. The authors concluded that the small-incisional techniques offered a simple, safe, and reproducible approach to double-eyelids. It reduced post-operative

recovery time and allowed a tenacious fixation. The fold-loss rate and other complication rate were acceptable when compared with the non-incisional and full-incisional techniques. Level of Evidence = III.

Combed Early Lower Eyelid Surgery with Neuromuscular Retraining for Synkinesis Prevention After Facial Palsy

Di Stadio et al (2024) stated that facial synkinesis (FS) is a distressing sequela of facial palsy (FP) characterized by involuntary, simultaneous movements of facial muscles occurring during voluntary facial expressions. Treatment of synkinesis is challenging, and preventive methods are needed. These researchers examined the effectiveness of physical facial nerve rehabilitation (PFNR) therapy alone versus PNFR with early eyelid surgery to correct lagophthalmos and prevent the onset of synkinesis. A total of 25 outpatients were randomized to receive either PFNR alone (neuromuscular retraining and Kabat proprioceptive neuromuscular facilitation) or PNFR and early (90 days after FP onset) eyelid surgery (involving a conservative oculoplastic correction for lagophthalmos with epiphora or ectropion). Comprehensive otolaryngological assessments and magnetic resonance imaging (MRI) were carried out. Synkinesis progression was measured using Another Disease Scale (ADS) at baseline, 3-, 6-, 12-, and 24-months post-treatment. Data were analyzed with ANOVA, τ-test, Chi-square analyses. Patients undergoing eyelid surgery with PFNR showed faster ($p < 0.001$) and better recovery of facial movements ($p < 0.05$) than patients receiving PFNR alone comparing T0 and T12 ($p < 0.0001$). No synkinesis were observed in the PFNR plus surgery group while 37 % of patients in PFNR alone had synkinesis ($p = 0.03$). At 24 months, none of the patients in the surgery group presented synkinesis. The authors concluded that combining early surgical treatment of paralytic lagophthalmos or epiphora with PFNR accelerated functional recovery and reduced synkinesis in patients with FP compared to facial rehabilitation alone. Moreover, these researchers stated that further investigations in larger populations with long-term follow-up are needed.

Combined Injection of Platelet-Rich Fibrin and Hyaluronic Acid for the Treatment of Actinic Elastosis of Lower Eyelids

Nagaja et al (2024) noted that rejuvenating the skin on the lower eyelids is often complicated. Treatment alternatives that have been practiced in the past had several complications. Furthermore, they were not completely effective in addressing skin aging or actinic elastosis symptoms such as dark circles under the eyes. In a case-series study, these researchers described a minimally invasive therapy approach that improved the afore-mentioned issues. This trial included 5 patients (4 women and 1 man); ages ranging between 21 to 40 years who were treated for dark circles under the eyes, volume deficiencies, and excess skin around the lower eyelids. Subjects were injected twice at 1-month intervals with a combination of injectable platelet-rich fibrin (iPRF) and hyaluronic acid (HA). They were examined on the day of treatment and 1 month after the 2nd injection. A progressive improvement in the esthetic outcome and a high level of patient satisfaction were observed. Apart from the predicted visible swelling right after the iPRF injection, the outcomes have shown that a series of iPRF with HA injections in the lower eyelid region was a safe, pain-free, and rapid therapeutic option for actinic elastosis. These investigators noted that this case-series study demonstrated the benefits of the novel combination injection of iPRF and HA for the treatment of actinic elastosis without any adverse effects and satisfactory results. Moreover, these researchers stated that studies on a larger scale on larger populations using different parameters are needed to standardize this procedure (e.g., standardization of photographic documentation). In addition, this trial did not have any particular follow-up period as the development, progression, and remission are subjected to multiple factors like sleep cycle, exposure to sunlight, stress, diet, etc. The improvement in all cases was observed in a 2-week timeline. Furthermore, the stability of the treatment cannot be exactly determined since the remission is largely dependent on the subjective factors and how the individual manages the same.

Glossary of Terms

Term	Definition
Blepharoplasty	Surgical repair or reconstruction of the eyelid
Brow ptosis	Drooping of the eyebrow
Corneal light reflex	Reflection of light off of the corneas
Ectropion	Eyelid turned outward
Entropion	Eyelid turned inward
Margin to reflex difference	Distance between the upper eyelid margin and the corneal light reflex
Ptosis surgery	Surgery to tighten the muscles of the drooping eyelid or eyebrow
Superior visual field	Upper half of visual field
Upper lid ptosis	Drooping of the upper eyelid
Visual field	Area that a person is able to see with fixed gaze

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