

Ptosis Surgery: Complications that might happen

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Abstract

Ptosis refers to drooping of the upper eyelid or narrowing of the palpebral fissure. There are so many etiologies postulated for this problem due to either congenital or acquired causes. Various techniques described to correct the pathology based on degree of ptosis and levator function. None of these though are absolutely safe. Complications happen either intra-operatively, early post-operatively or even at late stage. Safety measures are needed to reduce such complications. These include precise knowledge of detailed anatomy and experienced procedural surgical skills.

In this review, we are highlighting on the most important complications that happen during or after these procedures.

Introduction

Ptosis refers to drooping of the upper eyelid or narrowing of the palpebral fissure. There are two main classifications of ptosis depending on the etiology, either congenital or acquired. It is considered to be congenital if present at birth or if it is diagnosed within the first year of life. Once happened beyond the first year of life, then considered to be an acquired in nature. Over years, several methods are described to handle this problem none of them though is a 100% safe and effective in achieving functional and cosmetic results. Complications might happen any time during the procedure itself or after which can be arranged from mild to visual threatening ones. Recognition of these complications earlier on is necessary in order to handle them properly and avoid serious draw back.

Corneal abrasion: Corneal abrasion might result from inadvertent placement of sutures either through the tarsus or conjunctival surface. It is mandatory to evert the lid after each suture placement to check that a suture is not exposed. Attention should be given to the globe and cornea during dissection and suture placement in term of protection. Using a contact lens corneal protector or lid plate should be considered. In a report of 77 patients by Mercandette et al., three suffered corneal abrasion.⁽¹⁾

Exposure keratitis: This problem is more common in patients who have undergone ptosis repair with frontalis sling surgery. Mild exposure keratitis is common during the first few weeks after surgery. Corneal exposure was found to be 100% in early post-op period in a study by Anderson et al.⁽²⁾

Although the epithelium heals quickly in children, usually causing no problem, but corneal staining might persist and can be significant in adults. In these patients tear function must be reevaluated. Usually tear replacement, ointments and lid closure at night provide adequate protection. Placement of temporary punctal plugs can be considered if the problem persists. The

parents must be informed before surgery that the eyes will remain open to some extent when the child is sleeping and that temporary protection is necessary.

Peaking of the lid: If the tarsus is left intact after levator resection procedure, then this problem rarely seen. However, abnormal lid contour might happen if the sutures are unevenly placed. The problem might happen also in case if suturing is directly to the tarsus in one area and to pretarsal tissues in another. In such situations and to obtain the best result and better outcome, reoperation may be necessary. Operations in which the tarsus is resected partially produce a much higher frequency of lid contour problems and are therefore no longer advocated.⁽³⁾

Overcorrection: There are probably two main reasons behind this problem in congenital ptosis repair, either due to an unintentional suturing of the lid to the Whitnall ligament or to a shortened orbital septum. It might be easy to produce this problem in acquired ptosis especially if levator resection is done rather than simple repair in a patient for example who is having levator dehiscence. Needless to say that this problem was more frequent in case if levator muscle is resected using an anterior approach. Cates and Tyers et al. reported overcorrections in 7% of cases in their study.⁽⁴⁾

Early postoperative overcorrection can be managed easily by massaging the lid 4-5 times daily and can continue for several months to achieve the maximum effect. Another maneuvers to overcome the problem is by stretching the lid in a downward fashion or using Desmarres retractor to pull the lid.

In case if overcorrection persists and temporizing measure didn't alleviate the problem then levator recession may be necessary to bring the lid to its normal contour and height. In general, the amount of recession is equal to the amount of lid retraction.

Under correction: Usually under correction encounters more in practice than overcorrection. The postulated etiologies are; inadequate resection of the levator, insufficient advancement, loosening of sutures or

dissolution of absorbable sutures and large postoperative hematomas. If levator function is still good, then repeat levator procedure can be performed with no problem, but if poor then frontalis suspension will be the procedure of choice in these patients. Under corrections in 19% of cases were seen at 6 months in a study by Cates and Tyers et al.⁽⁴⁾

Eyelid contour abnormalities: Traditionally three sutures are placed to connect the tarsus to levator. These are nasally, mid-pupillary and laterally. In order to provide an optimal result, they are usually placed 2 to 3 mm below the superior tarsal border and 3 to 4 mm apart. If the defect presents in the early postoperative period, simple suture replacement can be performed.

Entropion: This complication can be easily noticed after large resections of the muscle especially if accompanied by shortening of the posterior lamella. Temporizing measure such as downward massage of the lid can be used, after which surgery can be contemplated if the problem persists. Shortening the anterior lamella by excising a spindle of skin above the incision can be done. The skin below the incision is then undermined, advanced upwards on the tarsus, and held at the desired level with three or four fine chronic catgut sutures which evert the lashes.⁽⁵⁾

Ectropion: Can occur if the anterior lid lamella is shortened too much or if the skin crease is created too high. It may also follow a posterior approach operation if the sutures are brought out close to the lashes and tied too tightly. The skin below the incision should be undermined, recessed on the tarsus, and sutured at a lower level conversely to an entropion correction.⁽⁵⁾

Lagophthalmos: Majority of patients will have difficulty closing their eyelids at night especially in the first few weeks after the surgery. Medical management includes; eye lubrication and lid taping at night as needed. Silicone rods will allow the eyelid to close more easily because of their elastic nature.

Conjunctival prolapse: Occasionally occurs due to postoperative oedema. If it cannot be replaced with a squint hook, it can be kept moist with an antibiotic ointment. Alternatively, it can be held in place with double-armed sutures passed from the conjunctival fornix and tied on the eyelid skin. If resistant to these forms of treatment, the prolapsed tissue can be simply excised at the lid margin.⁽⁶⁾

Loss of eye lashes: May follow any ptosis procedure if the lower skin flap is undermined too far and the lash follicles are damaged. If this occurs a lash graft taken from the brow may be attempted. However, prevention is better than cure and any dissection of the lower skin flap should stop when the lash follicles are barely visible.

Hemorrhage: May similarly occur after any operation. It is usually anterior and not a risk to vision but any haematoma may loosen sutures and affect the final lid level and contour.

Postoperative diplopia: Direct damage to the superior rectus muscle in most of the time will bring this problem although in rare cases the superior oblique muscle might be involved as well. Very rarely it may occur after direct nerve damage.

Infection: Although quite rare, but may happen especially with frontalis suspension procedures, since an avascular, possibly foreign material is introduced. This implanted foreign material may elicit a noninfectious inflammatory reaction as well. Great care should be taken to avoid introducing cilia or other foreign material into the operative site during placement of the fascia or silicon probe. Treatment of the infection might include usage of the appropriate antibiotics or even removal of the foreign material if necessary.⁽⁶⁾

Late granulomatous inflammatory reaction: This reaction can usually be observed around suture materials. A suture abscess needs to be ruled out. Once over, then treatment is conservative with warm compresses and antibiotic-steroid combination ointments if superficial, followed by steroid injection at the site, with or without removal of the inciting material and fistulous tract. PTFE slings produced the lowest incidence of recurrence (15% compared to 30% from other materials). Nylon slings produced the best cosmetic results.⁽⁷⁾

Recurrence: The recurrence rate of ptosis after frontalis suspension was found to be 26% after 20 months postoperatively.⁽⁷⁾ A series of 69 ptotic eyelids corrected with Whitnall Sling without tarsectomy, 20/69 (31%) of eyelids considered previously satisfactory, became unacceptable and required reoperation, hence tarsectomy is recommended together with Whitnall Sling.⁽²⁾

Conclusion

Regardless of the technique used to correct ptosis, several authors report difficulty in achieving functional and cosmetic results. In order to achieve an acceptable goal, Safety measures can be taken into considerations. These include precise knowledge of detailed anatomy and experienced procedural surgical skills. Early recognition of the complications is necessary to avoid a disastrous visual threatening problems.

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