Reoperation in Acquired Involutional Ptosis

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Postoperative upper lid asymmetry is a common problem following ptosis surgery. Recently we performed multiple ptosis operative procedures to correct lid asymmetry in the management of a patient with bilateral acquired upper eyelid ptosis. The patient’s eyelids were corrected successfully after five procedures. We retrospective-ly reviewed the treatment of this patient with unsatisfactory results. The medical literature was reviewed for further insight into the common problem of reoperation after ptosis surgery.

Key words: lid asymmetry, eyelid ptosis, reoperation

INTRODUCTION

During the last 25 years, there have been numerous clinical and anatomical studies published to guide the surgeon in obtaining a satisfactory result in involvional ptosis operations.1-5

Preoperative assessment of levator function and adjustment of lid height during surgery under local anesthesia can make ptosis surgery more predictable.3-5 However lid asymmetry due to overcorrection, undercorrection or contour deformity remains a challenging problem.

A case on a patient with ptosis who required multiple reoperations in order to obtain satisfactory result is presented.

A retroactive study was conducted on this patient’s treatment that resulted in unsatisfactory results to analyze the causes of difficulties and unpredictability. Medical literatures were reviewed for further insights into the common problems associated with reoperation after a ptosis surgery.

CASE REPORT

A 57-year-old woman was referred to the oculoplastic clinic on March 27, 1995, with the primary complaint of droopy eyelids, a condition that lasted for a few months. She had undergone a scleral buckling operation for retinal detachment of the left eye on October 11, 1978.

In the initial examination, the patient raised her brow for better vision. Bilateral upper eyelid ptosis was present with good levator function and elevated upper eyelid creases. She also exhibited moderate brow ptosis, excess skin in all four lids and bilateral lateral canthal dystopia with mild lateral canthal ligament laxity.
Table 1. Surgical procedures with results

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Surgical Procedures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9-7-95</td>
<td>External levator resection, OU&lt;br&gt;4 lid blepharoplasty&lt;br&gt;Lateral canthopexy, OU</td>
<td>Overcorrection, OU&lt;br&gt;MRD: 6 mm, OD&lt;br&gt;7.5 mm, OD</td>
</tr>
<tr>
<td>2</td>
<td>12-8-95</td>
<td>External levator recession,OU</td>
<td>Ptosis, OS&lt;br&gt;MRD: 5mm, OD&lt;br&gt;3.5 mm, OS</td>
</tr>
<tr>
<td>3</td>
<td>1-11-96</td>
<td>External levator resection,OS</td>
<td>Overcorrected left upper eyelid</td>
</tr>
<tr>
<td>4</td>
<td>1-16-96</td>
<td>External levator recession,OS (office procedure)</td>
<td>Rise again 7 days after procedure</td>
</tr>
<tr>
<td>5</td>
<td>2-8-96</td>
<td>External levator recession,OS&lt;br&gt;with regional steroid injection</td>
<td>MRD: 4 mm, OD&lt;br&gt;4.5 mm,OS</td>
</tr>
</tbody>
</table>

MRD: Marginal Reflex Distance in primary gaze position

A bilateral external levator aponeurotic repair was performed on September 7, 1995. Postoperatively, both eyelids were overcorrected, which required four additional surgical sessions to achieve lid symmetry. Details of the surgical procedures and results are listed in the Table 1.

DISCUSSION

After a ptosis surgery, revisions are performed for functionally, appearance or for both. Functional problems from overcorrection are related to exposure of the globe surface, while undercorrection can produce visual field deficit, feeling of heaviness, or sense of strain. How the patient perceives the unsatisfactory appearance from an excessively high or low lid margin can vary. It means there are no perfect level of lid height because some patient want narrow or wide palpebral fissure height.

Many preoperative and intraoperative factors influence the surgical result (Table 2).

Preoperative levator function and degree of ptosis are the most important factor of ptosis surgery. When operating on acquired ptosis, the surgeon should make an effort to avoid overcorrection. Because it is more likely in acquired cases which have good or moderate upper lid excursion.

The position of the eyebrow can greatly affect the upper eyelid position. The patient should possibly undergo a forehead or eyebrow lift before having the ptosis correction.

Table 2. Factors influencing initial surgical upper lid position

<table>
<thead>
<tr>
<th>Preoperative</th>
<th>Intraoperative</th>
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<tbody>
<tr>
<td>Levator function and degree of ptosis</td>
<td>Operative lid height</td>
</tr>
<tr>
<td>Ignored eyebrow ptosis and forehead ptosis</td>
<td>Anesthetic agent</td>
</tr>
<tr>
<td>Extraocular muscle balance and function</td>
<td>Attachment of levator muscle ; site and suture material</td>
</tr>
<tr>
<td>Patient anxiety</td>
<td>Intraoperative lid evaluation in extreme upgaze</td>
</tr>
<tr>
<td>Age of patient</td>
<td>Patient’s position</td>
</tr>
<tr>
<td>Failure to recognize the tarsal shift phenomenon</td>
<td>Operating room light</td>
</tr>
<tr>
<td></td>
<td>Technical difficulties</td>
</tr>
</tbody>
</table>

Physiologic upper lid excursion is directly related to the vertical rotational capacity of the eye. The superficial heads of the vertical rectus muscles affect the adjacent eyelid position. Any strabismus, especially the vertical, should be managed before a ptosis operation.

Providing a complete explanation of the surgical procedure to the patient is helpful in decreasing the patient’s anxiety during operation. Patient anxiety may widen the lid fissure secondary to increased sympathetic tone.

Anderson et al. explained that a normal
Whitnall's ligament that acts as the suspensory ligament of the eyelid and as a fulcrum for levator action is a prerequisite for the correction of ptosis by aponeurotic surgery.

If the surgeon recognizes the tarsal shift phenomenon preoperatively, he may reduce the chance of undercorrection, recurrences and temporal overcorrection.6

Intraoperative variables are different from patient to patient, thus causing some inconsistent results.

Linberg analyzed the linear relationship between operative lid position and the lid position one week and 3 months postoperatively. When the palpebral fissure height was significantly greater than 10 mm, a slight postoperative rise was observed, but when less than 10 mm, a slight postoperative fall was observed.3

The surgeon should be aware that the local anesthetic agent may affect the operative upper eyelid position by paralysing not only the retracting effect of the levator and Muller's muscle but also the protracting action of the orbicularis oculi muscle. The surgeon should place minimal anesthetic anteriorly in the subcutaneous space to minimize its effect on the levator function and be aware that return of orbicularis function after instillation of local anesthetic will result in about 1-2 mm of lid drop postoperatively.

During the operation, the surgeon should be sure to clean the tarsal plate where the sutures are placed. It is preferable to separate the pretarsal orbicularis muscle from the tarsal plate because the levator attachment to the epitarsal tissue, rather than the tarsus itself, may result in an insecure attachment and an undercorrection. Nonabsorbable sutures have a few advantages in ptosis surgery. Absorbable sutures may not be sufficient to prevent aponeurosis disinsertion or slippage back from tarsus. Sufficient scar tissue may not always form between the edges of the aponeurosis and tarsus as the suture degrade with absorbable suture material. Another advantage of nonabsorbable suture is easy to find location of the levator aponeurosis within the sutures during a revision procedure, when needed.

Similar to the upper lid margin position in primary gaze and in closure, the lid position in the extreme upgaze gives another indication of symmetry, contour and exposed postoperative height. In unilateral ptosis surgery, the operative side should 1-2 mm higher than the normal side in upgaze.4

Despite some inconvenience, it is recommended to evaluate operative lid position in sitting position as well as in the supine position in difficult cases. Because the upper lid level may be higher in the supine position. Examination in the supine position allows herniated periorbital fat to return into the orbit. It also allows evaluation without the need for mechanical forces due to the weight of a ptotic brow and dermatochalasis. The surgeon should control the lights in the operating room using a foot pedal, if available. Bright overhead lights or some other type of surgical discomfort may provoke squinting of the patient's eye unconsciously during operative lid height adjustment.

Improvement in surgical techniques and elucidation of the exact causes of ptosis reoperations can decrease the incidences of such frustrating results. The inexperienced surgeon should keep in mind in identifying and repairing rarefactions of the levator aponeurosis. How do you imagine the surgeon's mind to say several times "We need a more surgery to correct your lid asymmetry."? For more satisfactory results, the surgeon should make note of the factors which are fully described in this article.

REFERENCES