To the Editor: Blepharoptosis is a disease commonly seen in the Asian population, defined as an abnormal lower upper eyelid margin that is <2.0 mm above the midpoint of the pupil when a person looks straightforward. Surgical corrections are often needed because severe blepharoptosis may cause visual problems such as visual field compromise, hindered vision, or even amblyopia. For mild-to-moderate ptosis with levator function over 5 mm, various surgical procedures can be applied, such as the Müller muscle conjunctival resection, shortening of the levator palpebrae, or levator muscle advancement. However, most of these procedures may cause common complications such as overcorrection or undercorrection. Hence, we came up with a modified surgical procedure to fix the mild-to-moderate ptosis, while overcorrection and other complications were rarely observed.

Between August 2012 and August 2016, 102 mild-to-moderate blepharoptosis patients (174 eyelids) received the modified levator aponeurosis shortening surgeries in our department. The patients’ cohort had a mean age of 24.6 years (range from 15 to 48 years) and included 46 males (45%) and 56 females (55%). We evaluated the ptosis severity by measuring the prolapse distance of the upper eyelid (or eyelids) and the levator muscle function. The drooping upper eyelids were from the margin of the pupil to the first 1.0–4.5 mm (mean 3.2 mm). The levator muscle functions were all >5 mm (range: 5–9 mm; mean: 6.8 mm).

We designed a double-eyelid line according to the principle of blepharoplasty or the contralateral eyelid (unilateral blepharoptosis). We designed a double-eyelid line according to the principle of blepharoplasty or the contralateral eyelid (unilateral blepharoptosis). When we designed a double-eyelid line according to the principle of blepharoplasty or the contralateral eyelid (unilateral blepharoptosis), we divided the orbicularis muscle into the upper eyelid(s) was achieved. Then, we sutured the complex and adjusted the position until the desired height, and contour of the upper eyelid were almost consistent with the contralateral eye to achieve an esthetic goal. When we designed a double-eyelid line according to the principle of blepharoplasty or the contralateral eyelid (unilateral blepharoptosis), we divided the orbicularis muscle into the upper eyelid(s) was achieved. Then, we sutured the complex and adjusted the position until the desired height, and contour of the upper eyelid were almost consistent with the contralateral eye to achieve an esthetic goal.

When we implemented surgeries for unilateral ptosis patients, we disinfected the whole face and maintained the normal eye in our surgery field. When we released the adhesion, we asked the patient to open both eyes to make sure that the upper eyelid position of the affected side was nearly consistent with the contralateral eye to achieve an esthetic goal.

To remove the levator complex, we first removed approximately 3 mm of the anterior tarsal fascia to expose it. Then, we conservatively cut off the levator complex based on the calculation and adjusted the position until the desired height, and contour of the upper eyelid(s) was achieved. Then, we sutured the complex onto the tarsal plate at three places: interior, medial, and lateral. Finally, blepharoplasty was performed using several separate sutures of the upper eyelid skin. Although slight overcorrection during surgery might be necessary due to the intraoperative swelling effect caused by anaesthesia, no complications such as overcorrection or undercorrection were observed during an average of 2.4 years (from 6 months to 5 years) follow-up period [Figure 1d and 1e].

While satisfactory results could be achieved by current blepharoptosis surgical procedures, complications were inevitable due to the unpredictable nature of ptosis surgery.

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In our modification, the most notable part is to fully release the orbital fat adhesion at first and then remeasure the prolapse distance of the upper eyelid and the function of levator muscle intraoperatively in the supine position. We believe that the adhesion between the posterior wall of orbital septum and orbital fat could drag the levator aponeurosis-Müller muscle complex backward and upward as the complex and orbital fat are adjacent structures. By releasing the adhesion, we diminished the effect of the drag force to make the measurement more accurate. Thus, complications such as overcorrection or undercorrection can be avoided.

This modified surgical procedure using levator-muscle complex has increased the success rate and reduced the probability of complications when compared to the conventional levator-muscle complex surgeries.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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