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VIEWPOINT
Cosmetic

Complete Release of High-riding Septum and Constricted Fibers with Fat Graft for Congenital Depressed Upper Eyelid with Multiple Creases

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The orbital septum originates from the periosteum of the orbital rim and attaches to the levator aponeurosis, which is located approximately 4.44 and 3.71 mm from the superior tarsal border in Asian and White individuals, respectively.[1] The insertion point of the septum affects both the contour and function of the upper eyelid.[2] In this report, we first used the term "high-riding septum" to indicate the abnormal location of the septum, which indicates a deep-sulcus deformity beneath the superior orbital rim. Congenital high-riding septum inevitably combined with severe depression, multiple creases, and mild blepharoptosis of the upper eyelid. The anatomical findings and surgical techniques for this challenging deformity are illustrated through a typical case.

A 31-year-old woman presented for consultation for double eyelid surgery in June 2018. Physical examination revealed the above-mentioned deformities of her upper eyelids (Fig. 1). (**See figure 1, Supplemental Digital Content 1**, which shows a deep-sulcus caused by high-riding septum and multiple creases caused by constricted fibers. **http://links.lww.com/PRSGO/C854**.) The surgery proceeded with redundant skin resection under local anesthesia, and then upward dissection was performed behind the orbicularis oculi muscle (OOM). During the dissection, fine preseptum constricted fibers, which caused multiple eyelid creases, were observed and completely released. A thick high-riding septum beneath the superior orbital rim, which hindered levator excursion and resulted in mild blepharoptosis, was noted and incised completely. The orbital fat pads were released into the retro-OOM depressed region. Any tethered fiber interfering with levator excursion during the downward traction test was also completely released. Infraumbilical fat was then harvested through a direct skin incision, sliced into small particles with fine scissors, and precisely grafted into the retro-OOM space. Finally, double eyelid and wound closure were performed. Postoperative follow-up at 2 years revealed favorable outcomes without blepharoptosis (Fig. 2). (**See figure 2, Supplemental Digital Content 2,** which shows the complete release of the preseptal constricted fibers and the high-riding septum performed, then re-positioning of the fat pads to the retro-orbicularis oculi muscle space and free-fat graft that was done to restore the eyelid volume. **http://links.lww.com/PRSGO/C855**.)

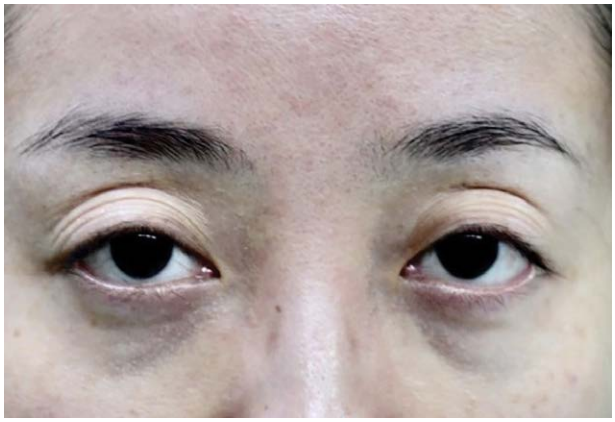

Fig. 1. A 31-year-old woman presented with severe contour depression with multiple creases and a deep sulcus beneath the superior orbital rim, as well as mild blepharoptosis in her upper eyelids.

Severe congenital depression with multiple creases of the upper eyelid anatomically indicates abnormal connections between the levator aponeurosis and the eyelid skin by many constricted fibers through the intermediate OOM. It is not the same as senile sunken eyelids, which only has volume insufficiency without these constricted fibers. In 2020, Zhao et al referred to these fibers as preorbital septum fibers.[3,4] These constricted fibers should be completely cut to provide an adequate and smooth space for fat grafting. Because the short and thick high-riding septum is

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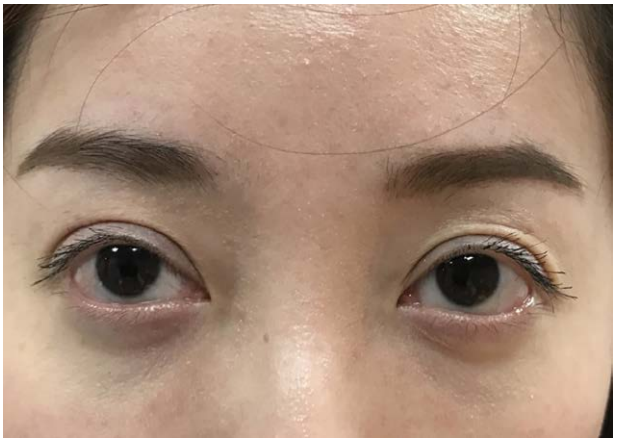

Fig. 2. Complete release of the constricted fibers and high-riding septum combined with orbital fat pad release and direct fat graft from the infraumbilical area were performed. Follow-up at 2 years after surgery showed satisfactory results without blepharoptosis.

tightly inserted into the levator aponeurosis, levator excursion is limited, which results in mild-to-moderate blepharoptosis. Therefore, complete release of these constricted fibers and the high-riding septum is the most important procedure, not only for providing adequate space for fat grafting to restore the eyelid volume and ablation of the abnormal creases, but also for blepharoptosis correction. Periumbilical fat block grafting is preferable for correcting severely sunken eyelids.[5] Free-fat injection without releasing the constricted fibers and the high-riding septum inevitably results in irregular eyelid contours with multiple folds.

In conclusion, the crucial step for treating severe congenital depression with multiple creases of the upper eyelid is complete release of the high-riding septum and constricted fibers, combined with direct free-fat grafting and orbital fat pad repositioning into the retro-OOM space.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

PATIENT CONSENT

The patient provided written consent for the use of her image.

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