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The goal of blepharoptosis repair is to elevate the eyelids to an acceptable level while maintaining proper contour, lid crease, and final symmetry of eyelid height to within 0.5 mm. Müller's muscle-conjunctival resection (MMCR) (Putterman and Urist 1975) predictably attains these goals because the correction is consistently titratable according to published (Dresner 1991) or personal nomograms. MMCR is the preferred approach to raise an eyelid by 2.5 mm or less in patients with a positive phenylephrine test.

With the goal of using the operation that is most predictable for the condition, it is useful to have a number of tools in your armamentarium. Patients with good levator function who do not respond to phenylephrine are better served with either a modified Fasanella-Servat (Samimi et al. 2013) or a levator aponeurotic repair. Occasionally, one can get a good result with a MMCR in a patient with a negative test; however, the result is not predictable. The Fasanella-Servat works well in patients with a negative phenylephrine test, so we recommend it for patients with 2.5 mm or less of ptosis. For greater

than 2.5 mm of ptosis with a negative test, we usually perform a levator aponeurotic repair.

Pearl 1. The Phenylephrine Test

The phenylephrine test is used to determine whether the patient is a candidate for MMCR. We perform the 2.5 % phenylephrine test in only one eye—the more ptotic eye or an arbitrary eye, if ptosis is equal. This serves four purposes: it determines whether a patient is a candidate for MMCR, demonstrates to the patient more evidently what he or she may look like after surgery, unmasks contralateral ptosis in the fellow eye secondary to Hering's law of equal innervation, and minimizes post-test visual obscuration by leaving one eye undilated.

If the patient is a candidate for MMCR and has bilateral ptosis, the resection amount of both eyelids is calculated from the MRD1 to the desired final eyelid height from the nomogram below. If contralateral ptosis is revealed with the uniocular phenylephrine test, either a smaller resection is performed on the previously ptotic eyelid or bilateral surgery is planned.

We have found that phenylephrine testing one eyelid is sufficient for bilateral surgery as the predictability of MMCR surgery is usually symmetric in acquired ptosis when the more ptotic eyelid exhibits a positive phenylephrine response. If the phenylephrine test is positive, we use a 4:1 resection to desired lift ratio, with up to 10 mm resection. For example, a patient with an MRD of

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Table 192.1 Nomogram for MMCR in phenylephrine test-positive patients

Elevation desired (mm)	MMC resection (mm)
1.0	4
1.5	6
2.0	8
3.0	10

0.5 and 1.5 would be treated with MMCR of 10 and 6 with a goal of ending up with post-op MRD result of 3 and 3. If necessary, the lid height can be augmented post-operatively using a modified Fasanella in the office.

Pearl 2. The Resection Nomogram

If the patient is a candidate for MMCR with a positive phenylephrine test, then the amount of resection is planned according to the preoperative MRD1 and the desired final eyelid position (Table 192.1). Dresner (1991) has reported his full nomogram, which will be briefly summarized here. Generally, for every 1 mm of desired elevation, 4 mm of Müller's muscle and conjunctiva are resected. Modifications to this nomogram are made for 3 mm of desired elevation, positive phenylephrine response of only 1.5 mm instead of 2 mm, and congenital ptosis.

Level of Phenylephrine Response

There is not a direct correlation between the level of phenylephrine response and the amount of MMCR resection. If the response to phenylephrine is 2 mm or greater, the phenylephrine test is considered "positive," and one uses the nomogram as described above. If the response is slightly less than 2 mm, such as 1.5 mm, the resection amount can be increased by 1 mm. In Horner's syndrome, sometimes the response can be 4 mm or greater. We still will resect about 8 mm for 2 mm of Horner's ptosis. However, we rarely use MMCR for congenital ptosis. In our hands, a modified Fasanella-Servat is more predictable than a MMCR for up to 2.5 mm of congenital ptosis.

References

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