A 9-year-old female presented with a persistent large exodeviation in down gaze and blepharoptosis. She had orthotropia in her primary gaze and 40 prism diopters (PD) exotropia with hypertropia in her down gaze (Fig. 1). Stereopsis was 60 seconds of arc in primary gaze and no stereopsis on down gaze. The patient had previously undergone bilateral recession of the lateral rectus muscle (LR) of 8.2 mm and superior oblique muscle (SO) tenotomy for λ-pattern exotropia and bilateral SO overaction at a different hospital. Computed tomography revealed the absence of an inferior rectus muscle (IR) in the right eye and a severely hypoplastic IR in the left eye (Figs. 2A, B).

During surgery under general anaesthesia, the absence of a right IR was confirmed. Most muscle fibres were missing in the left IR (Fig. 2C).

The superior halves of the LR in both eyes were advanced to their original position, and the inferior halves were transposed inferiorly to the putative IR insertion. The MRs of both eyes were resected by 5 mm, and their inferior halves were transposed inferiorly in the same manner. Following the transposition, the exotropia in down gaze...
was reduced to 10 PD without disrupting fusion in the primary gaze (Fig. 3). The blepharoptosis was also improved.

Congenital absence of bilateral IR is a very rare condition. It can be overlooked and confused with other conditions. Our patient had surgery at a different hospital before the IR abnormality was recognized. Although the absence of an IR can be diagnosed with orbital imaging studies, we believe that it is more important to suspect severe IR underaction without apparent acquired cause.

Full tendon inferior transposition of the MR and LR with or without a superior rectus (SR) weakening procedure has been suggested in several studies. However, performing such a full-muscle transposition in our patient was complicated by her previously recessed LR, as well as her orthotropic ocular alignment in primary gaze. If full tendon transposition to the putative insertion of the IR had been performed on our patient, exotropia in primary gaze would have occurred. Therefore, we performed transposition surgery after advancement of the LR and resection of the MR to prevent exotropia in primary gaze. If a patient has binocular single vision, as in our case, a small amount of postoperative horizontal strabismus could induce intractable diplopia. Thus, we decided to perform a half instead of full tendon transposition to manage possible postoperative horizontal strabismus with the remaining superior half muscle.

We think the blepharoptosis was induced by a compensatory decrease of innervational input to the SR to prevent hyperdeviation of the eye. The transposition surgery increased innervation input to the levator and SR, and blepharoptosis improved subsequently.

We have reported a case of bilateral IR dysgenesis with persistent -pattern exotropia and blepharoptosis, and its surgical management. This surgical method was useful for the transposition of muscle previously operated on and is safe, especially for patients without suppression. In bilateral IR anomalies, blepharoptosis due to the compensatory decrease of innervational input should be ruled out before lid surgery.

**REFERENCES**


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