

A case of anti up turn syndrome after anterior transposition of inferior oblique muscle

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Antielevation syndrome (AES) is one of the postoperative complications of the inferior oblique muscle. It is manifested by strabismus at the time of surgery, limited upward rotation during external rotation, and hypertelorism of the contralateral anterior oblique muscle. It is often caused by inferior oblique anterior transposition (IOAT).

Case presentation

The patient, a 10-year-old male, visited our hospital in July 2022 because of exotropia for 2 years. Cornea reflected light of fixation, left eye -20°, eye movement left inferior oblique muscle hyperfunction. Prism examination: 33cm:od=os= -40pd, strabismus correction is recommended. In January 2023, the patient underwent anterior transposition of the left inferior oblique muscle + shortening of the left medial rectus muscle + recession of the left lateral rectus muscle (the specific operation volume is unknown). In early June 2023, he came to our hospital for reexamination. His head was tilted to the left, and the head tilt test was negative. Slit lamp: slight conjunctival scar can be seen in the inferior nasal and inferior temporal conjunctiva of the left eye; The cornea reflected light on the left eye was slightly low, and the left eye was alternately covered from lower to positive position. Eye movement: the left eye is limited in internal rotation, upward rotation and external upward rotation, and the inferior oblique muscle of the right eye is hyperfunctional (Fig. 1). Prism: 33cm: turn up 25°: r/120pd, first eye position r/15pd, turn down 25°: no obvious high or low eye position; Four hole lamp: near 4, far 2. The review in July was the same as before. According to the patient's medical history and surgical history, the diagnosis was: left eye anti upstroke syndrome. Although the patient had limited upstroke and hypertelorism of the right oblique muscle, the first eye position was not obvious, so no special treatment was done.



Figure 1 limited external upstroke of the left eye and hypertelorism of the inferior oblique muscle of the right eye

Discussion

Inferior oblique anterior transposition (IOAT) refers to the displacement of the distal end of the inferior oblique muscle to the front of the equator, which turns its original upward rotation into downward rotation, thereby weakening the original hyperfunction of the inferior oblique muscle. It is often used for diseases such as superior oblique muscle paralysis, inferior oblique muscle hyperfunction, dissociative vertical strabismus, etc. with the development of this operation, some scholars gradually found that the upward rotation was limited when the eye was rotated outward, accompanied by the contralateral right oblique muscle hyperfunction, And unilocular IOAT is more likely to occur, and this symptom is named "antielevation syndrome (AES)"^[1-2]. AES needs to be differentiated from superior rectus palsy, fat adhesion syndrome, inferior oblique adhesion syndrome and inferior oblique involvement syndrome. Combined with the patient's past medical history, surgical history and current medical history, the superior rectus palsy is excluded. The vertical deviation of fat adhesion syndrome is progressive, and the patient's vertical strabismus is stable, so it can be excluded. The inferior oblique muscle involvement syndrome generally shows that the limitation of intraocular upward rotation after external rectus surgery is more obvious, so it can be ruled out.

Zhang Lijun^[3] and others found that bilateral symmetric inferior oblique surgery is safer than monocular surgery. If AES occurs after IOAT, it needs to be analyzed and treated according to the eye position and vertical strabismus, that is, there is no vertical deviation in the original position, and the upward rotation is slightly limited, so it can not be treated. If vertical deviation occurs in the original position, and the contralateral eye is hyperfunctional, the contralateral eye IOAT surgery is required.

In conclusion, AES is a rare complication after inferior oblique muscle surgery, and correct selection of the indications for IOAT surgery is the key to avoid AES.

References

- [1] Liu PP, Fu J. The etiology and key points of prevention and treatment of counter-up-gaze syndrome [J]. Chinese Journal of Strabismus & Pediatric Ophthalmology, 2021, 29(2): 37-40.
- [2] Yang SQ, Guo X. Surgical treatment of counter-up-gaze syndrome after anterior transposition of the inferior oblique muscle [J]. Chinese Journal of Ophthalmology, 2013, 49(7): 604-608.
- [3] Zhang L, Feng XG, Li JH, et al. Report of a case: Counter-up-gaze syndrome [J]. Chinese Journal of Strabismus & Pediatric Ophthalmology, 2004, 12(4): 164-165, 155.