Minimally invasive strabismus surgery for horizontal rectus muscle reoperations

Daniel Mojon

AIMS: To study if minimally invasive strabismus surgery (MISS) is suitable for rectus muscle reoperations. METHODS: The study presents a series of consecutive patients operated on by the same surgeon at Kantonsspital St Gallen, Switzerland with a novel MISS rectus muscle reoperation technique. Surgery is done by applying two small radial cuts along the muscle insertion. Through the tunnel obtained after muscle separation from surrounding tissue, a recession, advancement or plication is performed. RESULTS: In 62 eyes of 51 patients (age 35.4 (SD 16.3) years) a total of 86 horizontal rectus muscles were reoperated. On the average, the patients had 2.1 strabismus surgeries previously. Preoperative logMAR visual acuity was 0.38 (0.82) compared with 0.37 (0.83) at 6 months (p>0.1). On the first postoperative day, in the primary gaze position conjunctival and lid swelling and redness was hardly visible in 11 eyes, discrete in 15 eyes, moderate in 11 eyes and severe in 15 eyes. One corneal dellen and one corneal erosion occurred, which both quickly resolved. The preoperative deviation at distance for esodeviations (n = 15) of 12.5 (8.5) degrees decreased to 2.6 (7.8) degrees at 6 months (p<0.001). For near, a decrease from 12.0 (10.1) degrees to 2.9 (1.6) degrees was observed (p<0.001). The preoperative deviation at distance for exodeviations (n = 35) of -16.4 (8.5) degrees decreased to -7.9 (6.5) degrees at 6 months (p<0.005). For near, a decrease from -16.5 (11.4) degrees to -2.9 (1.5) degrees was observed (p<0.005). Within the first 6 months, only one patient had a reoperation. At month 6, in four patients a reoperation was planned or suggested by us because of unsatisfactory alignment. No patient experienced persistent diplopia or necessitated a reoperation because of double vision. Stereovision improved at month 6 compared with preoperatively (p<0.01). CONCLUSIONS: The study demonstrates that a small-cut, minimal dissection technique allows to perform rectus muscle reoperations. The MISS technique seems to reduce conjunctival and lid swelling in the direct postoperative period.