ICL implantation in a patient with primary thrombocytosis

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Primary thrombocytosis is a clonal proliferative disease of hematopoietic stem cells, which belongs to a kind of bone marrow proliferative tumor. Its annual incidence is (1.2-3.0) / 100000, and women are slightly more than men. Clinically the platelet count of peripheral blood is significantly increased, which is often accompanied by thrombosis or bleeding tendency [1]. The case reported in this paper provides clinical experience for preoperative evaluation and surgical safety of ICL surgery in patients with primary thrombocytosis.

Case presentation

1.General Information

The patient is a 37 year old female with refractive error in both eyes for more than 20 years. Primary thrombocytosis has been untreated for more than 10 years; No other systemic complications; History of two cesarean sections; There was no familial genetic disease.

2.Examination Information

VOD 0.06, Vos 0.04; Computer optometry: od:-11.25d-1.00*170 → 1.0; Os:-11.75d-0.50*50 → 1.0-. Slit lamp examination: the cornea of both eyes was transparent, the iris texture was clear, the peripheral part of the lens was punctate cloudy, and the vitreous was slightly cloudy. Anterior chamber depth: right eye 3.08mm, left eye 3.03mm; Corneal thickness: 552mm in the right eye and 555mm in the left eye; Corneal endothelial count: 2676mm2 in the right eye and 2771mm2 in the left eye; Intraocular pressure: 11.3mmhg in the right eye, 12.3mmhg in the left eye; UBM (ciliary sulcus distance): right eye 12.08mm/12.55mm, left eye 12.03mm/12.53mm; UBM (angle to angle): right eye 11.38mm, left eye 11.59mm; Master (white to white value): right eye 12.0mm, left eye 11.9mm; Pentacam (white to white value): right eye 11.8mm, left eye 11.7mm; Lens thickness: 4.23mm in the right eye and 4.20mm in the left eye. Blood routine: platelets 1344*109 /l, white blood cells 10.13*109/l; Partial thromboplastin time: 33.3s, the rest of the test results were normal.

3.Diagnosis

1. refractive error in both eyes 2. vitreous opacity in both eyes 3. primary thrombocytosis

4.Treatment

The patient is highly myopic and needs posterior chamber intraocular lens (ICL) implantation. The patient has low vision requirements and chooses non astigmatic crystals. The patient requests to retain the myopia degree, and the binocular spherical lens is under corrected by -0.50d.

Consultation and treatment of primary disease: the superior physician and hematologist consult and recommend the treatment of primary thrombocytosis. After the peripheral platelet decreases to 300 ~ 500*109/l, ICL implantation is performed. Interferon injection: intramuscular injection of interferon 180 every 2 weeks μ G (660000 u/0.5ml), and the blood routine was reviewed every 3 weeks. After 2 months, the patient's platelet decreased to 252*109/l. After consultation with the operating doctor of our hospital, the right eye operation can be performed first after 1 month of platelet stability. The preoperative test results of the patients were within the normal range after 3 months

Operation design and Implementation: the right eye was operated on first, and the left eye was operated on the next day after no adverse reactions. The lens model of the right eye is 13.2, diopter: -11.00d, placed obliquely. Two hours after surgery in the right eye: mild corneal edema, anterior chamber flicker (+), arch height of about 2 / 3CT. One day after surgery: corneal edema subsided, anterior chamber flicker (- +), visual acuity 0.8, intraocular pressure 10mmhg, arch height 120 μ M. Intraocular lens alignment was performed 2 days after surgery, and the oblique position was changed to the horizontal position. The arch height of the patient was about 1ct 2h after the alignment. 1D after repositioning: arch height 250 μ M. Considering the ideal arch height of the patient, the left eye surgery was performed the next day. Left eye surgery design: crystal model: 13.2, diopter: -11.50d, horizontal placement. 2h after surgery in the left eye: mild corneal edema, anterior chamber flicker (+), arch height 350 μ M. 1D after surgery: visual acuity 1.0, intraocular pressure 10mmhg, arch height 240 μ M.

5.Treatment outcomes, follow-up, and outcomes

Reexamination 1 month after surgery: right eye: visual acuity 0.8, intraocular pressure 14mmHg, arch height 160 μ M; Left eye: 1.0, intraocular pressure 14mmHg, arch height 170 μ M. The arch height of the patients was maintained at 200 μ M, without adverse reactions.

Discussion

ICL lens implantation can effectively improve the naked eye vision and quality of life of high myopia patients, which has the advantages of minimally invasive, reversible and high safety [2]. The incision of ICL implantation is small, but it is still an intraocular operation, with risks of intraoperative bleeding, infection, iris or lens damage. For this patient, the risk of intraoperative and postoperative bleeding is great. Preoperative blood routine and urine routine tests are needed to evaluate the patient's physical condition. Primary thrombocytosis has bleeding or thrombophilia, and preoperative control of the number of platelets is particularly important. When the test results are within a reasonable range, the implementation of ICL implantation, but as an invasive operation, it is still necessary to avoid intraoperative complications as much as possible to ensure the safety of the operation. Regular follow-up and close observation of the patient's ocular condition and original disease control are still needed after surgery. The postoperative arch height of the patient was low, and the arch height of the right eye after adjustment did not meet the expectation. Considering that the patient's lens sagittal height was high, but the preoperative UBM examination

did not measure the sagittal height of both eyes, resulting in the low arch height of both eyes after surgery. As an important part of ICL implantation, UBM requires a detailed measurement and evaluation of various influencing factors affecting the postoperative crystal position. And fully communicate with patients about possible postoperative situations before operation to obtain patients' understanding and recognition.

References

[1] Zhou Y, Zheng X. Short-term observation of postoperative visual quality of ICL V4 c correction of ultra-high myopia [J]. International Journal of Ophthalmology, 2015 (9): 1615-1617.

[2] Li Y, You J, Mao Y, et al. Analysis of clinical characteristics and the efficacy and safety of long-acting interferon in non-elderly patients with essential thrombocythemia [J]. Internal Medicine Theory and Practice, 2020, 15(5): 332-336.