

Rapid bilateral anterior capsule contraction following high myopic cataract surgeries: a case report

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Abstract

• We describe a rapid anterior capsule contraction following phacoemulsification and intraocular lens (IOL) implantation in an old woman with high myopia. The patient with high myopia complicated with cataract received phacoemulsification and IOL implantation bilaterally. The best-corrected visual acuity (BCVA) improved from 0.1 to 0.4 in the right eye and 0.5 in the left eye 1 week after surgeries. 5 weeks after surgery of the right eye and 4 weeks after surgery of the left eye, the patient complained blurred vision in the right eye. BCVA of the right eye was 0.06 and that of the left was 0.1. Slit-lamp examination revealed anterior capsule contraction in both eyes and a fully closed capsulorhexis opening in the right eye. The IOLs were centered but almost completely enclosed, with numerous linear fibrous folds radiating from the hick central fibrosis. We surgically excised the central part of the anterior capsule of the eyes with microscissors, resulting again in BCVA of 0.4 and 0.5 in the right and left eyes respectively. Anterior capsule contraction might appear much earlier than three months after phacoemulsification and IOL implantation surgery in case of high myopia complicated with cataract. Patients with high myopia receive cataract and IOL surgery should be monitored carefully for the rapid development of anterior capsule contraction.

• **KEYWORDS:** high myopia; cataract; phacoemulsification; anterior capsule contraction

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INTRODUCTION

Anterior capsule opacification is a clinical entity occurring approximately three months post-operatively with a considerably lower incidence than posterior capsule opacification^[1]. The combination of anterior capsule opacification with capsulorhexis phimosi and intraocular lens (IOL) decentration characterizes the capsule contraction syndrome (CCS)^[2]. Some previously reported risk factors contributing to CCS include the material of the IOL, the rectangular edges of the IOL and the size of the capsulorhexis and intracapsular ring implantation, pseudoexfoliation, retinitis pigmentosa (RP)^[3,4] and capsulorhexis decentration towards the mounted haptic^[2]. We report a 70-year-old high myopic patient complicated with cataract who developed anterior capsule contraction in both eyes only 4 weeks after uneventful cataract surgeries with implantation of acrylic IOL. The present report adds one risk factor which might expand the knowledge to further understand this uncommon syndrome.

CASE REPORT

A 70-year-old woman was diagnosed with high myopia and cataract in both eyes. The refraction was -23.00 -2.00×95° in the right eye and -21 -0.75×135° in the left. The axial lengths of the globes were 31.75mm in the right eye and 30.80 mm in the left. In both eyes, the best-corrected visual acuity (BCVA) was 0.1 and the intraocular pressure, 17mmHg. Slit-lamp examination showed a cortical and nuclear cataract in both eyes.

The patient had bilateral phacoemulsification under topical anesthesia with 1 week's interval between surgeries. Because of the existence of high myopia, a -1Diopter (the right eye) and a 2 Diopters (the left eye) IOLs were implanted respectively with 5 to 6 mm capsulorhexis. The acrylic IOLs with 6.25mm optics were placed in the capsular bags and well centered. There were no intraoperative complications, and all cortical materials and viscoelastics were removed completely. Both eyes received the standard postoperative anti-inflammatory treatment of Tobradex (Alcon) every 4 hours tapered over 3 weeks. The patient gained BCVA of 0.4

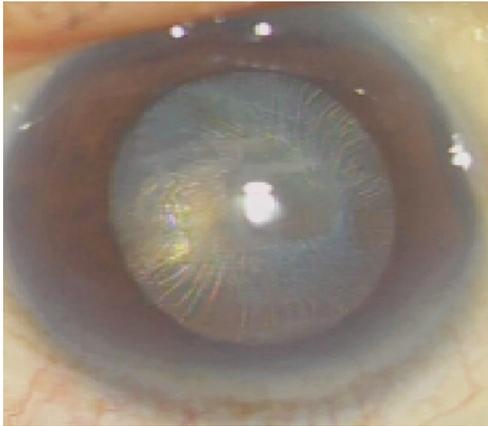


Figure 1 Five weeks after phacoemulsification and IOL implantation in the right eye

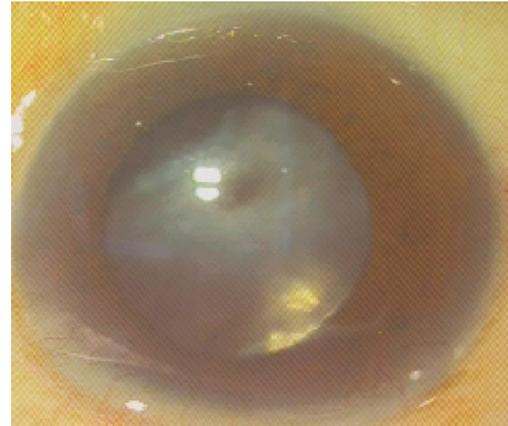


Figure 2 Four weeks after phacoemulsification and IOL implantation in the left eye

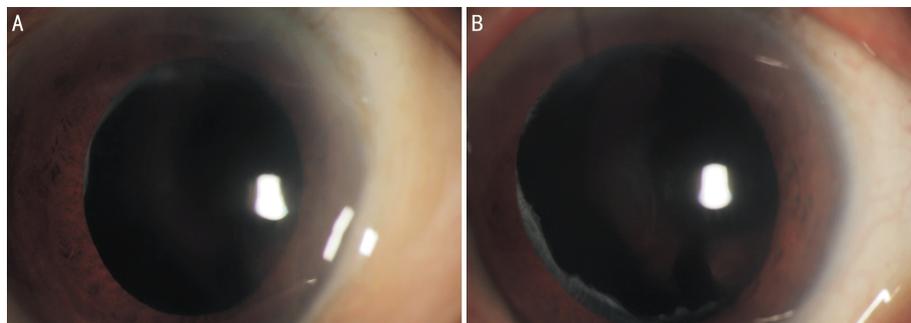


Figure 3 One week after central excision of the contracted anterior capsule A: Right eye; B: Left eye

(the right eye) and 0.5 (the left eye) 1 week after surgeries. Five weeks after surgery, the patient reported blurred vision in the right eye. Slit-lamp examination revealed anterior capsule contraction in both eyes and a fully closed capsulorhexis opening in the right eye. The IOLs were centered but almost completely enclosed, with numerous linear fibrous folds radiating from the hick central fibrosis (Figure 1, 2). We surgically excised the central part of the anterior capsule of the eyes with microscissors (Figure 3A, B), resulting again in BCVA of 0.4 and 0.5 in the right and left eyes respectively.

DISCUSSION

Continuous curvilinear capsulorhexis is the most common technique for opening the anterior lens capsule during phacoemulsification. Postoperatively, however, a small-diameter capsulorhexis may result in progressive shrinkage or complete closure of the anterior capsule opening as a result of lens epithelial cell proliferation and fibrosis. This phenomenon has been referred to as capsule contraction syndrome [5]. Associated conditions include pseudoexfoliation syndrome and other diseases of zonular weakness such as high myopia, uveitis, pars planitis, myotonic dystrophy, diabetes mellitus, advanced age, and retinitis pigmentosa [6]. The present case is a typical one of high myopia complicated with cataract. The characteristics

of CSS in the present case are the location of capsular fibrous contraction existed in anterior capsule only. After excision of central anterior fibrous capsules, the posterior capsule remained intact and transparent (Figure 3A, B). This implies the capsular contractions only affect anterior capsules in the cases of high myopia shortly after surgery, unlike those cases of CCS which have a complete capsule contraction and IOL dislocation, and have been extensively discussed [2,6,7]. We suppose the rectangular edge design of the acrylic IOLs implanted might play an important role in prevention of posterior capsular contraction. The author believes that early surgical involvement may also be beneficial to prevent further capsule fibrosis and IOL dislocation.

In review of our case records of the last 24 months, a total 56 eyes of cataract complicated with high myopia received phacoemulsification and acrylic IOL implantation surgeries. An average follow-up of these cases ranged from 3 to 22 months. The present case is the only one with anterior capsule contraction. We believe that CCS is an uncommon complication of cataract surgery. If risk factors such as exfoliation syndrome, diabetes mellitus, uveitis, retinitis pigmentosa, zonulolysis during surgery and the existence of high myopia are present, careful follow-up is necessary to prevent possible anterior capsule contraction.

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