

SHORT COMMUNICATION**Case report**

Posterior capsule opacification and wrinkling in a case of capsular bag distension

J. DURIG, L. ZOGRAFOS

University Eye Clinic, Hôpital Jules Gonin, Lausanne - Switzerland

ABSTRACT: We describe a complication following anterior neodymium: YAG laser capsulotomy in a case of capsular bag distension which was diagnosed 21 months after cataract extraction with phacoemulsification and in-the-bag lens implantation. An anterior neodymium: YAG capsulotomy was performed and immediately after this the posterior capsule collapsed and wrinkled, causing a marked decrease in visual acuity that necessitated posterior neodymium: YAG capsulotomy. (*Eur J Ophthalmol* 1999; 9: 66-7)

KEY WORDS: Phacoemulsification, Capsulorhexis, Capsular bag, Distension

Accepted: December 2, 1998

INTRODUCTION

Capsular bag distension has been recently described as a complication of cataract extraction with phacoemulsification, continuous curvilinear capsulorhexis, and in-the-bag lens implantation (1, 2). Although the etiology is not yet completely understood, its treatment consists of anterior (1) or posterior (3) capsulotomy.

Case Report

A 63-year-old man underwent cataract extraction in his left eye by phacoemulsification through a continuous curvilinear capsulorhexis followed by in-the-bag lens implantation. He had previously been treated with beta-blockers for high intraocular pressure, with pseudoexfoliation syndrome. When examined by us 21 months after surgery, best corrected visual acuity in his left eye was 20/25 with spheric -5.25. Intraocular pressure measured by applanation tonometry was 16 mm Hg with his usual medications (timolol and aceclidine twice a day). The cornea was clear but a few tiny endothelial precipitates were noted. The anterior chamber was narrow with one-plus flare. The pupil was slightly eccentric and, when dilated, the intraocular lens appeared to be pushed forward,

especially in the superonasal quadrant. The continuous curvilinear capsulorhexis appeared to be adherent to the optic of the intraocular lens, which was covered by a thin, translucent membrane and a few pigment deposits. The posterior capsule was clear and situated far behind the intraocular lens. The bag was distended (Fig. 1) and contained a few tiny particles.

Neodymium:YAG laser capsulotomy was done and a hole was made, using three pulses of 3,2 mJ, in the anterior capsule at the eight o'clock position, outside the intraocular lens optic. A few milliliters of transparent liquid immediately escaped from the hole and the capsular bag collapsed, the anterior chamber deep-

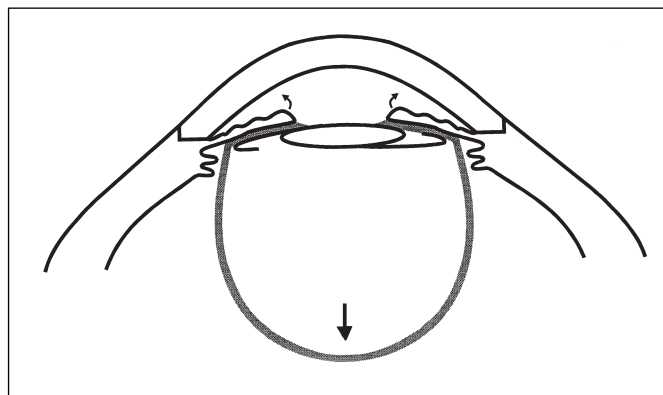


Fig. 1 - Schematic presentation of capsular bag distension syndrome.

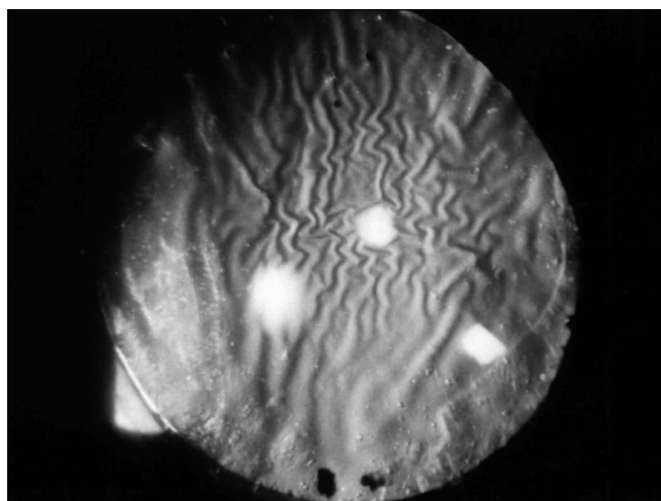


Fig. 2 - *Wrinkled and opaque posterior capsule in contact with the intraocular lens after anterior capsulotomy for capsular bag distension syndrome.*

ened and the intraocular lens moved backwards into a normal position. One day after treatment, best corrected visual acuity dropped to 20/200 with a spherical correction of -2. The anterior chamber was deep and had only minor inflammation; intraocular pressure was 18 mm Hg. The posterior capsule was in contact with the intraocular lens and was markedly wrinkled and opaque (Fig. 2). At follow-up three weeks later, the situation was unchanged: the posterior capsule remained wrinkled and did not stretch, and visual acuity had not improved. Posterior neodymium: YAG capsulotomy was then performed, and four hours later visual acuity had improved to 20/20 with -2.5 spherical correction.

DISCUSSION

Capsular bag distension was first described by Davison in 1990 (1). It occurs in about 1% of patients following phacoemulsification and in-the-bag lens implantation when the continuous curvilinear capsulorhexis is smaller than the optic intraocular lens. Two different mechanisms have been proposed: the first increased osmotic pressure in the bag due to trapped viscoelastic (3) or proteins produced by residual lens epithelial cells (1, 4), the anterior capsule opening being hermetically sealed by adhesion of the optic intraocular lens to the continuous curvilinear capsulorhexis margin; the second theory is that the bag is

distended at the time of surgery during the anterior chamber filling maneuver (1), and suggests that the intraocular lens acts like a valve within the capsulorhexis opening.

This condition has been described after implantation of various types of intraocular lenses. (1-3) The consequences, beside bag distension, are myopia induced by anterior displacement of the implant, and shallowing of the anterior chamber, with a possible increase in intraocular pressure due to partial closure of the angle. (1) Treatment consists of close observation for patients who are asymptomatic, or posterior/anterior neodymium: YAG capsulotomy for those who are symptomatic.

This case of capsular bag distension shows that a distended and apparently clear posterior capsule can abruptly become markedly opaque and wrinkled when it collapses after neodymium: YAG capsulotomy.

In our case, a primary posterior capsulotomy seemed to be the treatment of choice.

Reprint requests to:
Jacques Durig, M.D.
University Eye Clinic
Hôpital Jules Gonin
Avenue de France 15
CH-1004 Lausanne, Switzerland

REFERENCES

1. Davison JA. Capsular bag distension after endophacoemulsification and posterior chamber intraocular lens implantation. *J Cataract Refract Surg* 1990; 16: 99-108.
2. Holtz SJ. Postoperative capsular bag distension. *J Cataract Refract Surg* 1992; 18: 310-7.
3. Omar O, Eng CT, Chang A, Durcan FJ, Liss RP, Stark BI. Capsular bag distension with an acrylic intraocular lens. *J Cataract Refract Surg* 1996; 22: 1365-7.
4. Eifrig DE. Capsulorhexis-related lacteocruemnesia. *J Cataract Refract Surg* 1997; 23: 450-4.