Case Report

Retained intracameral cotton fibers following phaco-vitrectomy

Christina Y. Weng, Weijie V. Lin¹, Joseph F. Morales

Abstract:
This report describes a 76-year-old female who presented with cotton fibers retained in the anterior chamber following a combined phaco-vitrectomy. These fibers did not cause any complications in her postoperative course. This observation has not been previously reported in association with a combined anterior segment-posterior segment surgery. Retained cotton fibers are typically inert and do not require intervention. However, this iatrogenic postoperative complication should be avoided if possible, and several approaches for how to do so are discussed.

Keywords:
Cotton fibers, cotton strands, intracameral foreign body, intraocular cotton, phaco-vitrectomy, surgical complication

INTRODUCTION
Retained cotton fibers can be found in the anterior chamber following anterior segment surgery. However, they are seldom reported despite occurring quite frequently, and there is hence limited data to guide management of these iatrogenic postoperative findings.¹ In this report, we describe a patient who underwent a combined cataract surgery with pars plana vitrectomy and was found to have two intracameral cotton fibers postoperatively.

CASE REPORT
A 76-year-old female was diagnosed with visually-significant cataract and epiretinal membrane (ERM) in her right eye. Her visual acuity (Va) was 20/50 with an intraocular pressure (IOP) of 14 mmHg in her right eye. She elected to undergo combined phacoemulsification of cataract with intraocular lens (IOL) implantation and pars plana vitrectomy (PPV) with membrane peel. Intraoperatively, the main corneal incision was created at 8 o'clock with paracenteses at the 12 and 6 o'clock positions. A limited anterior vitrectomy was performed due to a small posterior capsular rent, and a sulcus IOL was placed with optic capture. Triamcinolone acetonide confirmed absence of prolapsed vitreous. A single 10–0 nylon suture was used to close the main wound. After 25-gauge PPV/ERM peel was conducted, cannulae were removed and sclerotomies were noted to be watertight. Subconjunctival antibiotics and steroids were injected. Cotton-tipped applicators, surgical towels, and gauze were used throughout the entirety of the case.

On postoperative day one, the patient had Va 20/80 and IOP of 13 mmHg. There was 2+ cell in the anterior chamber (AC) with a well-centered IOL, but the view was limited by stromal edema. Dilated examination confirmed no vitreous cell. Topical trimethoprim/polymyxin B and difluprednate 0.05% 1 drop four times daily were commenced. Patient returned one week later with Va 20/40 and IOP of 17 mmHg. At that point, the cornea had cleared and two intracameral cotton fibers were noted at 2 [Figure 1] and 5 o’clock [Figure 2]. The inferior fiber abutted the inferior paracentesis while the superonasal fiber was trapped between the IOL and anterior capsule. A limited anterior vitrectomy was performed due to a small posterior capsular rent, and a sulcus IOL was placed with optic capture. Triamcinolone acetonide confirmed absence of prolapsed vitreous. A single 10–0 nylon suture was used to close the main wound. After 25-gauge PPV/ERM peel was conducted, cannulae were removed and sclerotomies were noted to be watertight. Subconjunctival antibiotics and steroids were injected. Cotton-tipped applicators, surgical towels, and gauze were used throughout the entirety of the case.

On postoperative day one, the patient had Va 20/80 and IOP of 13 mmHg. There was 2+ cell in the anterior chamber (AC) with a well-centered IOL, but the view was limited by stromal edema. Dilated examination confirmed no vitreous cell. Topical trimethoprim/polymyxin B and difluprednate 0.05% 1 drop four times daily were commenced. Patient returned one week later with Va 20/40 and IOP of 17 mmHg. At that point, the cornea had cleared and two intracameral cotton fibers were noted at 2 [Figure 1] and 5 o’clock [Figure 2]. The inferior fiber abutted the inferior paracentesis while the superonasal fiber was trapped between the IOL and anterior capsule. The anterior chamber had 1+ cell without a hypopyon. Vitreous cavity was clear. Topical drops were not tapered, and patient was followed weekly with no pain, decreasing inflammation, and improving Va. By postoperative month one, the patient had Va

How to cite this article: Weng CY, Lin WV, Morales JF. Retained intracameral cotton fibers following phaco-vitrectomy. Saudi J Ophthalmol 2020;34:129-30.

Department of Ophthalmology,
Baylor College of Medicine-
Cullen Eye Institute, 1977
Butler Boulevard, 1School
of Medicine, Baylor College
of Medicine, 1 Baylor Plaza,
Houston, TX 77030, USA

Address for correspondence: Christina Y. Weng,
1977 Butler Blvd, Houston, TX
77030, USA.
E-mail: christina.weng@bcm.edu

Submitted: 07-Oct-2018
Revised: 20-Jan-2019
Accepted: 20-Feb-2019
Published: 28-Dec-2020

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLPMedknow_reprints@wolterskluwer.com

© 2020 Saudi Journal of Ophthalmology | Published by Wolters Kluwer - Medknow
The incidence of post-cataract surgery intraocular cotton fibers has been reported by one study to be 6.4%.\(^1\) Cotton fibers can shed from items such as surgical towels, gauze, or cotton-tipped applicators which are frequently used in ophthalmic surgery. They may directly enter the eye through wounds or adhere to instruments that are introduced intraocularly. Retained cotton fibers have not been found to increase the risk of endophthalmitis nor do they seem to cause cystoid macular edema or corneal endothelial damage.\(^2\) However, induced recurrent iridocyclitis has been reported.\(^3\) We did not observe increased inflammation in our patient, but we did prolong her topical steroid course which may be a prudent consideration in similar cases.

To avoid migration of cotton fibers intraocularly, it may be advisable to avoid pressing directly over corneal wounds with cotton-tipped applicators. In combined cataract and vitreoretinal surgery, there is inevitably more manipulation of the globe which can cause wound gapes that draw in debris from the surgical field, so suturing larger corneal wounds may be beneficial in these cases. In this patient, the inferior fiber resided near the paracentesis wound which was likely its entry point; no fibers were found near the temporal wound closed with 10–0 nylon. Lastly, some operating rooms have elected to replace cotton-shedding materials with lint-free supplies.

To the authors’ knowledge, this case represents the first report of retained cotton fibers following combined cataract and vitreoretinal surgery. The consequences of retained intraocular cotton fibers are likely insignificant in most cases,\(^2,4\) but not well-understood due to the fact that they often go unrecognized. In our patient who has been followed for over two years, the fibers did not lead to any adverse effects. Still, prevention is ideal; if cotton fibers are retained intraocularly, surgical removal is rarely required, although careful monitoring for inflammation is warranted.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Shimada H, Arai S, Kawamata T, Nakashizuka H, Hattori T, Yuzawa M. Frequency, source, and prevention of cotton fibers in the anterior chamber during cataract surgery. *J Cataract Refract Surg* 2008;34(8):1389-92.
2. Yuen HK, Lam RF, Kwong YY, Rao SK, Lam BN, Lam DS. Retained presumed intraocular cotton fiber after cataract operation: Long-term follow-up with in vivo confocal microscopy. *J Cataract Refract Surg* 2005;31:1582-7.
3. Joshi RS. Recurrent iridocyclitis due to cotton fiber in anterior chamber. *Nepal J Ophthalmol* 2016;8(15):87-90.
4. Bakbak B, Gedik S, Ozturk BT, Koktekir BE, Gonul S, Yilmaz M. Quantitative assessment of anterior chamber inflammation in patients with retained presumed intraocular cotton fiber after phacoemulsification. *Ocul Immunol Inflamm* 2013;21(3):207-11.