Traumatic total iridectomy with “pseudo-iris”

Carlos Rocha-de-Lossada, Rodríguez-Calvo-de-Mora Marina, Rachwani Rahul, Borroni Davide1, Santos O. Álvaro, Hernando-Ayala Carlos

Abstract:
Blunt trauma may cause a wound in the site of the cataract incision in patients that have received this surgery, even decades after the procedure. The opening of the incision seems to avoid globe rupture, acting as a “liberating valve”. We report a case of a 92-year-old woman with advanced dry macular degeneration who is referred to our department after suffering a blunt trauma in her left eye with a nightstand. She was diagnosed of a traumatic total iridectomy due to iris extrusion through a 2.75 mm cataract incision after injury and vitreous hemorrhage, sparing an intact intraocular lens and capsular bag, plus peripheral remnants of cortical material in the capsular bag and anterior capsule opacity resembling “pseudoiris”. After the vitreous hemorrhage was completely resolved she referred no photophobia. Consequently, although a bad visual acuity of the patient could mitigate patient’s photophobia, we believed that her “pseudoiris” plays an important role in diminishing the possible symptoms of photophobia.

Keywords:
Aniridia, photophobia, pseudoiris, traumatic iridectomy, wound

INTRODUCTION

Cataract surgery is the most common surgical procedure performed worldwide.1 The continuous evolution of the technique provides safe and reproducible visual outcomes using sutureless and progressively smaller corneal incisions.2-6 When eyes that have undergone previous cataract surgery receive a blunt trauma, even decades after the procedure, the wound is usually located in the area of the previous cataract incision. The opening of the incision seems to avoid globe rupture, acting as a “liberating valve”.3,4,7,8 We report the case of a traumatic total iridectomy due to iris extrusion through a 2.75 mm cataract incision after blunt trauma, with the distinct feature of an intact intraocular lens (IOL) and capsular bag, plus peripheral remnants of cortical material in the capsular bag and anterior capsule opacity that resemble a “pseudoiris”. Although there have been previous publications of previous cases of traumatic expulsive iridodialysis with sparing of the IOL and capsular bag,2,3,5-8,10 our case seems to be the first to report a “pseudoiris”.

CASE REPORT

We report a 92-year-old woman that is referred to our department after suffering a blunt trauma in her left eye (OS) with a nightstand. Her chief complaint was decreased visual acuity OS. Her personal history accounted for diabetes mellitus and high-blood pressure. The only remarkable previous surgical procedure was bilateral cataract surgery six years ago. Best-corrected visual acuity (BCVA) OS was light perception. Slit-lamp examination showed flat anterior chamber, complete hyphema and positive Seidel test in the area of the main incision of the cataract surgery. She was scheduled for urgent suture of the wound and anterior chamber blood evacuation. Postoperatively, topical prednisolone, cycloplegic and moxifloxacin eye drops were prescribed. One week after the trauma, BCVA OS was hand-motion (1 m). Hematic remnants could still be found in the anterior chamber. A dense vitreous hemorrhage impaired fundus exploration. Ultrasound echography ruled out retinal detachment. Intraocular pressure (IOP) was 34 mmHg and a combination of brinzolamide and timolol were added to the previous treatment. One month after the trauma, BCVA OS was still hand-
motion (2 m). The patient referred subjective improvement and absence of photophobia. Hyphema was resolved and total iridectomy could be observed, with the distinct feature of an intact IOL and capsular bag, along with peripheral remnants of cortical material in the capsular bag and anterior capsule opacity that resembled a “pseudoiris” in a dilated pupil [Figures 1 and 2]. The rest of the anterior chamber examination was normal. Over time, vitreous hemorrhage was gradually subsiding, and some retinal structures could be ascertained. Hence a new echography was performed, and retinal detachment was ruled out again. Four months after the trauma, BCVA OS was 0.1 (Snellen), anterior segment was quiet and vitreous hemorrhage was completely resolved, allowing us to observe a dry macular disease, justifying the low BCVA [Figure 3]. The patient did not complain of photophobia.

**Discussion**

Traumatic expulsion of the iris in pseudophakic patients after a blunt trauma has been previously described by other authors,[2-15] regardless of the type of cataract incision: Sutureless 5 × 3.5 mm scleral tunnel with intact IOL and capsular bag;[9] clear corneal 4 mm × 2 mm incision with intact IOL and capsular bag;[17] and clear corneal 4.1 × 1.3 mm with negative incision Seidel test and partially protruded capsular bag.[3] The physiopathology of the iris extrusion through the previous cataract surgery incision is not fully understood. The following mechanism has been proposed: the blunt trauma creates a sudden increase of IOP that opens the surgical wound and enables a rapid outflow of aqueous humor. At a certain point, the flow of aqueous humor causes the iris to “plug” and seal the wound (Bernouilli’s effect), thus increasing the IOP. If this IOP rise is dramatic enough, it can cause the disinsertion and expulsion of the entire iris through the incision (traumatic iridectomy). Once the IOP is back to normal levels, the incision can be self-sealed again. Some authors claim that the foldable IOL can absorb the impact of the blunt trauma, preventing capsular rupture and expulsive hemorrhage.[5,10] The iris could remain in the anterior chamber, be expelled through a new incision or through a previous incision. In the present case, it seems clear that the iridectomy happened through the old cataract incision, given the absence of other wounds and the positive Seidel test in the main incision. Aniridia is known to cause photophobia and glare due to the absence of the iris protection.[6,16]

In conclusion, we report the case of a traumatic total iridectomy due to iris extrusion through a 2.75 mm cataract incision after blunt trauma, with the distinct feature of an intact IOL and capsular bag, plus peripheral remnants of cortical material in the capsular bag and anterior capsule opacity that resemble a “pseudoiris” in a dilated pupil. There have been previous publications of traumatic expulsive iridodialysis with sparing of the IOL and capsular bag, but, to the best of our knowledge, our case seems to be the first to report a “pseudoiris”.

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**Conflicts of interest**

There are no conflicts of interest.
REFERENCES

1. Ting DSJ, Rees J, Ng JY, Allen D, Steel DHW. Effect of high-vacuum setting on phacoemulsification efficiency. JCRS 2017;43:1135-9.
2. Oltra EZ, Chow CC, Lunde MW. Bilateral traumatic expulsive aniridia after phacoemulsification. MEAOJ 2012;19:334-6.
3. Navon SE. Expulsive iridodialysis: An isolated injury after phacoemulsification. J Cataract Refract Surg 1997;23:805-7.
4. Blomquist Preston H. Expulsion of an intraocular lens through a clear corneal wound. J Cataract Refract Surg 2003;29:592-4.
5. Muzaffar W, O’Duffy D. Traumatic aniridia in a pseudophakic eye. J Cataract Refract Surg 2006;32:361-2.
6. Walker NJ, Foster A, Apel JJ. Traumatic expulsive iridodialysis after small-incision sutureless cataract surgery. J Cataract Refract Surg 2004;30:2223-4.
7. Ball J, Caesar R, Choudhuri D. Mystery of the vanishing iris. J Cataract Refract Surg 2002;28:180-1.
8. Prabhu A, Nayak H, Palimar P. Traumatic expulsive aniridia after phacoemulsification. Indian J Ophthalmol 2014;62(3):371-2.
9. Ball JL, McLeod BK. Traumatic wound dehiscence following cataract surgery: A thing of the past. Eye (Lond) 2001;15:42-4.
10. Mikhail M, Koushan K, Sharda RK, Isaza G, Mann KD. Traumatic aniridia in a pseudophakic patient 6 years following surgery. Clin Ophthalmol 2012;6:237-41.
11. Blomquist PH. Expulsion of an intraocular lens through a clear corneal wound. J Cataract Refract Surg 2003;29:592-4.
12. Hurvits LM. Late clear corneal wound failure after trivial trauma. J Cataract Refract Surg 1999;25:283-4.
13. Kahook MY, May MJ. Traumatic total iridectomy after clear corneal cataract extraction. J Cataract Refract Surg 2005;31:1659-60.
14. Prabu A, Nayak H, Palimar P. Traumatic expulsive aniridia after phacoemulsification. Indian J Ophthalmol 2007;55:232-3.
15. Sheth HG, Laidlaw AH. Traumatic aniridia after small incision cataract extraction. Cont Lens Anterior Eye 2006;29:163-4.
16. Katz BJ, Digre KB. Diagnosis, pathophysiology, and treatment of photophobia. Surv Ophthalmol 2016;61:466-7.