Case Report

Bilateral Traumatic Anterior Crystalline Lens Dislocation by Watersplash during Songkran Festival: Case Report

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Objective: *To report a case of bilateral anterior dislocated crystalline lens from water splash during the Songkran festival.*
Material and Method: *A healthy 46-year-old woman with a previous history of having water thrown to her face at the Songkran festival complained of acute bilateral painful visual loss. On examination, visual acuity was 0.1 OD, 0.2 OS, and both eyes revealed anterior dislocated crystalline lens with blood in anterior chamber. Her intraocular pressure (IOP) was 8 mmHg OD and 47 mmHg OS. She was initially treated with medication for controlling IOP and inflammation. Eventually, she underwent pars plana vitrectomy, pars plana lensectomy, and scleral-fixated intraocular lens (SF-IOL) in both eyes.*
Results: *The dislocated lens was successfully removed and visual acuity was 0.7 OD and 0.9 OS at 9 months follow-up.*
Conclusion: *Water splash can be associated with anterior lens dislocation and secondary glaucoma. Awareness, careful examination, and prompt referral to an ophthalmologist can prevent complications and preserve the patient's vision.*

Keywords: *Traumatic anterior lens dislocation, Water splash, Songkran festival*

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Injuries to the eye following blunt injury can cause tissue separation. This can result in a characteristic splitting or tearing of the tissues such as pupillary tears, iridodialysis, angle recession, cyclodialysis, meshwork tears, ruptured zonules, or retinal dialysis from sudden compressive deformation of the globe. It then displace the cornea and the anterior sclera posteriorly with a compensatory expansion of the globe in the equatorial direction[1]. In case of ruptured zonules, lens dislocation occurred. Lens luxation into the anterior chamber is rare compared with luxation into the vitreous body and can cause more severe complications such as corneal edema, acute glaucoma, and uveitis. Thus, anteriorly dislocated crystalline lens should always be removed[2,3].

Songkran is a Thai traditional New Year, known as the "Water Festival", and people believed that water will wash away bad luck. The most obvious celebration of Songkran is the throwing of water. The throwing of water originated as a way to pay respect to people, by gently pouring a small amount of lustral water on other people's hands as a sign of respect. However, this is now becoming a "water war". People roam the streets with containers of water or water guns, or post themselves at the side of roads with a garden hose and drench passersby. Occasionally, accidents as well as injuries attributed to extreme behavior, such as water being thrown in the faces of people riding in vehicles, occurs.

Herein, the authors report a case of bilateral traumatic anterior crystalline lens dislocation with corneal touch and secondary angle closure glaucoma by water splash during the Songkran festival.

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Case Report

A 46-year-old Thai woman presented to the emergency Department at Chiang Mai University Hospital complaining of acute bilateral painful visual

loss after the Songkran festival. She stated that water was thrown in her face while sitting in moving car. She had blurred vision and pain immediately after trauma and went to the emergency room of a nearby hospital. The general practitioner administered only steroid and antibiotic eye drop and sent her back home. Later, she suffered increasing pain and blurred vision especially in her left eye, so she came to Chiang Mai University Hospital. She had no underlying disease. Her vital signs were normal and systemic examination was within normal limits. Visual acuity was 0.1 OD and 0.2 OS. Slit-lamp examination revealed conjunctival chemosis, iris touched cornea nasally, mild degree of vitreous in anterior chamber, and crystalline lens dislocated anteriorly with bloodstains in both eyes (Fig. 1). The intraocular pressure (IOP) was 8 mmHg OD and 47 mmHg OS. Fundus examination revealed Berlin's edema in both eyes and subretinal hemorrhage in the right eye. She had no underlying disease and no allergic reaction to any kind of medication. She was treated with topical corticosteroid both eyelids. To control IOP, the authors administered 0.5% timolol and 0.15% brimonidine eye drops every 12 hours in the left eye and systemic acetazolamide (250 mg) every 6 hours. Two days later, IOP decreased to 20 mmHg and she underwent pars plana vitrectomy (PPV), pars plana lensectomy (PPL), and scleral-fixated IOL (SF-IOL) on the left eye. Three weeks after the accident, IOP was increased to 42 mmHg on her right eye. Her IOP could be controlled with 0.5% Timolol bid, 0.15% Brimonidine bid, and 0.005% Latanoprost hs. Visual acuity remained 0.2 OD so she refused surgery. However, three months later, her visual acuity decreased to counting finger due to more anterior displacement of crystalline lens and traumatic cataract. She underwent pars plana vitrectomy (PPV), pars plana lensectomy (PPL), and scleral-fixated (SF-IOL) on her right eye. After the operations, anti-glaucoma drugs could be tapered and 0.5% timolol was the only eye drop used for controlling IOP on the left eye. At 9 months follow-up, best-corrected visual acuity was 0.7 OD and 0.9 OS.

Discussion

Etiologies of the anterior dislocation of crystalline lens include traumatic, hereditary, pseudoexfoliation syndrome, and spontaneous dislocation. Hereditary forms can be associated with systemic diseases (*e.g.*, Marfan's syndrome, homocystinuria, Weil-Marchesani syndrome, and Lipoid protenosis). Traumatic dislocation can be the cause in more than 50% of cases[4]. Blunt trauma to the orbit may distort globe in an anterior or posterior direction causes shortening of that meridian, with simultaneous equatorial scleral stretching, resulting in zonular dehiscence with consequent lens subluxation or complete dislocation[5]. This dislocation can occur anteriorly, posteriorly, or subconjunctival[6,7].

Lens dislocation into the anterior chamber can cause more severe complications such as corneal edema, acute angle closure glaucoma, and uveitis. In the presented case, the patient had marked decreased vision at presentation with significantly elevated IOP in both eyes, which resulted from anterior displacement of crystalline lens and pupillary block. Medical therapy with anti-glaucoma medications should be initially attempted. Later, the surgery can be done to improve the vision, relieve intractable pupillary block glaucoma, and alleviate iris-lens-cornea touch.

In the presented case, the authors chose the pars plana vitrectomy (PPV), pars plana lensectomy

Fig. 1 Anterior segment photograph demonstrates anterior crystalline lens dislocation in both eyes (arrows show the edge of lens)

(PPL), and scleral-fixated IOL (SF-IOL) because this closed chamber technique reduces the risk of expulsive intraocular hemorrhage from suddenly decreasing IOP, diffuse corneal endothelial damage from chafing of the lens against corneal endothelium, and avoid significant postoperative corneal astigmatism from large corneal or limbus incisions. In addition, the dislocated lens in the presented patient was displaced to a more posterior location during supine position making the possibility for pars plana lensectomy.

The cause of hyphema is bleeding from iris or ciliary body during trauma, which was spontaneously resolved in the presented patient. In posterior segment trauma, Berlin's edema and subretinal hemorrhage were also spontaneously resolved without sequel.

Several ocular traumas such as hitting by a golf club, ice hockey, fist, or airbag[8-11] can cause lens subluxation/dislocation into various sites. However, as far as the authors' knowledge, anterior lens dislocation associated with water splash has never been reported. Awareness, careful examination (including best-corrected visual acuity, pupil reaction, anterior chamber depth, lens status, IOP, and fundus examination), and prompt referral to the ophthalmologist can make early diagnosis and treatment, which can prevent complications and preserve the patient's vision. People should be educated to wear goggles to prevent such avoidable serious disorders.

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เลนส์ตาเคลื่อนมาข้างหน้าทั้ง 2 ข้างจากการโดนน้ำสาดในประเพณีสงกรานต์

ภารดี คุณาวิศรุต, ชุมพล อินทรเทศ, เกษรา พัฒนพิฑูรย์

***วัตถุประสงค์**: เพื่อรายงานผู้ป่วยเลนส์ตาเคลื่อนมาข้างหน้าทั้ง 2 ข้างจากการโดนน้ำสาดในประเพณีสงกรานต์*
***รายงานผู้ป่วย**: ผู้ป่วยหญิง อายุ 46 ปี มีอาการปวดตาและตามัวทั้ง 2 ข้าง หลังจากโดนน้ำสาดที่บริเวณหน้าในประเพณีสงกรานต์ ตรวจตาพบระดับการมองเห็นลดลงเหลือ 0.1 ในตาขวา และ 0.2 ในตาซ้ายพบมีการเคลื่อนของเลนส์ตามาข้างหน้าร่วมกับมีเลือดอยู่ในช่องหน้าลูกตาทั้ง 2 ข้าง ความดันลูกตา 8 มิลลิเมตรปรอทในตาขวาและ 47 มิลลิเมตรปรอทในตาซ้าย ผู้ป่วยได้รับการรักษาด้วยยาในตอนแรกเพื่อควบคุมความดันลูกตาและการอักเสบ ต่อมาจึงได้รับการผ่าตัดน้ำวุ้นลูกตา เอาเลนส์ที่เคลื่อนออก และใส่เลนส์แก้วตาเทียมในตาทั้ง 2 ข้าง*
***ผลการรักษา**: การผ่าตัดประสบผลสำเร็จ และระดับการมองเห็นเพิ่มขึ้นเป็น 0.7 ในตาขวาและ 0.9 ในตาซ้าย เมื่อติดตามผลที่ 9 เดือน*
***สรุป**: การโดนน้ำสาดอาจทำให้เกิดการเคลื่อนที่ของเลนส์ตาและอาจเกิดภาวะต้อหินแทรกซ้อน การตระหนักการตรวจตาอย่างละเอียดและส่งต่อไปยังจักษุแพทย์สามารถป้องกันโรคแทรกซ้อนและรักษาระดับการมองเห็นไว้ได้*