A PREGNANT WOMAN WİTH FLAWLESS SHAPED STELLATE CATARACT

Ömer **EKİCİ**[1]

[1]World Eye Hospital - Konya

ABSTRACT

Traumatic cataracts can develop following either penetrating or blunt ocular trauma. Cataracts can form rapidly or gradually following blunt trauma. One of the clinical presentations of blunt traumatic cataracts can be also star (stellate) or rosette-shaped appearance. Satellate cataract is uncommon. In this case, a 32-year-old pregnant patient, who was diagnosed with an almost perfect star-shaped stellate cataract due to the complaint of low vision that started after blunt trauma in the right eye, was presented.

Keywords: Blunt trauma, Pregnancy, Subcapsular opacification, Star shaped cataract,

KUSURSUZ ŞEKİLLİ YILDIZ KATARAKTI OLAN HAMİLE BİR KADIN

Ömer **EKİCİ**[1]

[1]Dünya Göz Hastanesi - Konya

ÖZET

Delici veya künt göz travmaları sonrasında travmatik katarakt görülebilir. Katarakt künt travmadan hemen sonra veya geç dönemde ortaya çıkabilir. Künt travma sonrası görülen kataraktların klinik belirtilerinden biri de yıldız (stellate) veya rozet şeklinde görülen lens opasitesidir. Satellat katarakt nadir görülür. Bu olguda, sağ gözde künt travma sonrası başlayan görme azlığı şikayeti nedeniyle kusursuza yakın yıldız şeklinde katarakt tanısı konulan 32 yaşında hamile bir hasta sunuldu.

Anahtar kelimeler: Gebelik, Künt travma, Subkapsüler opasifikasyon, Yıldız şekilli katarakt

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INTRODUCTION

Ocular trauma plays a crucial role in contributing to visual impairment, primarily linked to traumatic cataracts(1). Penetrating injury, blunt injury, electric shock, radiation exposure, ultraviolet (UV) light exposure and chemical damage can affect the crystalline lens in multiple ways.(2,3). Lens opacification can manifest either immediately following an injury or develop over the course of years(4). Cataracts that result from blunt trauma often display a characteristic stellate or rosette shaped appearance(5).

CASE REPORT

A 32-year-old pregnant woman applied to our clinic with low vision in her right eye. She was 29-weeks pregnant. 3 months ago, while she was sleeping, her 2-year-old child's heel hit her right eye hard. She did not receive any medical help and her vision in her right eye decreased over time.

Best corrected visual acuity (BCVA) was 0.3 with +6.00-2.00x175 in the right eye and 0.6 with +9.00-2.00x180 in the left eye. The results of the biomicroscopic examination showed an anterior subcapsular stellate cataract at the center of the lens in the right eye (Figure 1a, Figure 1b). The lens was clear in the left eye. The anterior lens capsule was intact in the right eye, and no additional examination findings indicative of trauma such as phacodonesis or iridodonesis were found. No pathological findings were observed in the fundus examination in both eyes. Axial length 21.63 mm on the right, 21.37 mm on the left; anterior chamber depth was 3.51 mm on the right and 3.40 mm on the left. Central corneal thickness was 601 μm in the right eye and 602 μm in the left eye (Figure 2). On detailed questioning, there was no history of electric shock, drug use, smoking, UV or ionising radiation exposure that she could remember in her lifetime. She had no history of systemic disease.

Since the patient was 29 weeks pregnant, surgery was recommended after birth. However, the patient stated that her current low vision was extremely disturbing and that she wanted to have surgery as soon as possible. After consultations regarding the fetus, cataract surgery was planned. Phacoemulsification surgery was performed on the right eye under topical anesthesia. There were no problems with the mother and fetus during and after the surgery.. No pathological conditions were encountered, especially in terms of the anterior capsule, posterior capsule and lens zonules. A monofocal toric intraocular lens was implanted.

On the first postoperative day examination, intraocular lens was centralized (Figure 3) and BCVA was 0.7 with +0,50-0.75x180. It was thought that there might be refractive amblyopia because the axial lengths in both eyes were below 22 mm. Topical levofloxacin was used 4 times a day for 2 weeks and topical dexamethasone was used 4 times a day for 1 month postoperatively. She was told to apply punctal compression for 2 minutes after instilling the drops to reduce the transfer of drugs into the systemic circulation.

The patient mentioned in the study provided informed consent, and all procedures were conducted in adherence to the principles outlined in the Declaration of Helsinki.

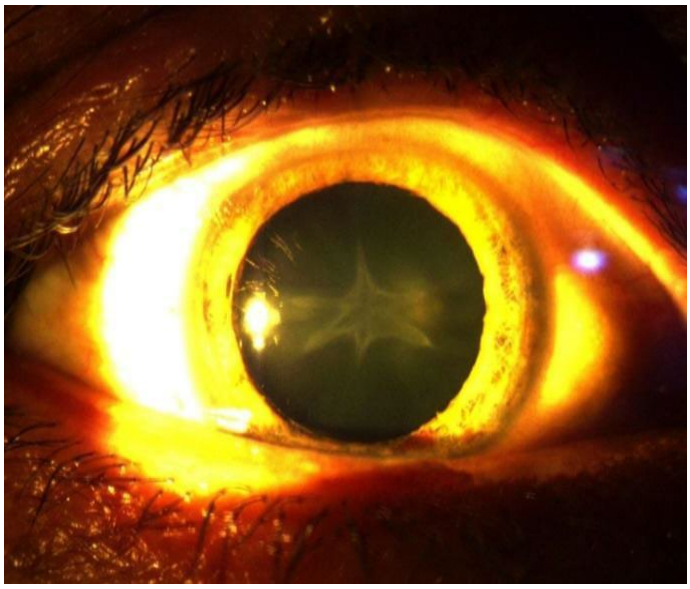

Figure 1a. The slit lamp examination of the anterior subcapsular stellate cataract

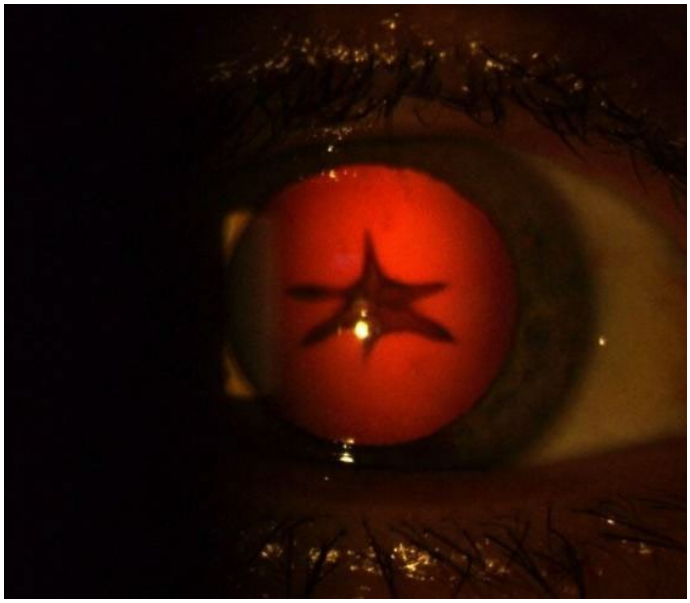

Figure 1b. Slit lamp examination under retroillumination of the stellate cataract.

OD right — IOL calculation — **OS** left

Eye status

OD (right)	OS (left)
LS: Phakic	LS: Phakic
Ref: ---	Ref: ---
LVC: Untreated	LVC: Untreated
Target ref.: plano	Target ref.: plano
VS: Vitreous body	VS: Vitreous body
VA: ---	VA: ---
LVC mode: -	LVC mode: -
SIA: +0.25 D @ 0°	SIA: +0.25 D @ 0°

Biometric values

OD (right)	OS (left)
AL: 21.63 mm (!) SD: 22 µm	AL: 21.37 mm SD: 6 µm
ACD: 3.51 mm SD: 6 µm	ACD: 3.40 mm SD: 6 µm
LT: 3.65 mm SD: 38 µm	LT: 3.73 mm SD: 9 µm
WTW: 12.5 mm	WTW: 12.1 mm
SE: 41.73 D SD: 0.01 D K1: 40.46 D @ 178°	SE: 41.30 D SD: 0.01 D K1: 39.70 D @ 2
ΔK: -2.62 D @ 178° K2: 43.08 D @ 88°	ΔK: -3.33 D @ 2° K2: 43.03 D @ 92
TSE: 41.98 D SD: 0.04 D TK1: 40.71 D @ 177°	TSE: 41.44 D SD: 0.03 D TK1: 39.87 D @ 2
ΔTK: -2.62 D @ 177° TK2: 43.33 D @ 87°	ΔTK: -3.28 D @ 2° TK2: 43.15 D @ 92

OD (right)

K — Alcon SN60WF — - SRK®/T - (A const.: 119.00)		TK — Alcon SN60WF — - Haigis - (A0: -0.769 A1: +0.234 A2: +0.217)	
IOL (D)	Ref (D)	IOL (D)	Ref (D)
+30.50	-0.84	+32.00	-0.86
+30.00	-0.46	+31.50	-0.49
+29.50	**-0.09**	**+31.00**	**-0.12**
+29.00	+0.28	+30.50	+0.24
+28.50	+0.64	+30.00	+0.60
+29.38 Emmetropia		+30.83 Emmetropia	

K — Alcon SN60WF — - Hoffer® Q - (pACD: +5.64)		K — Alcon SN60WF — - Holladay 1 - (SF: +1.84)	
IOL (D)	Ref (D)	IOL (D)	Ref (D)
+32.00	-0.90	+31.00	-0.64
+31.50	-0.53	+30.50	-0.27
+31.00	**-0.17**	**+30.00**	**+0.09**
+30.50	+0.19	+29.50	+0.45
+30.00	+0.54	+29.00	+0.80
+30.76 Emmetropia		+30.12 Emmetropia	

OS (left)

K — Alcon SN60WF — - SRK®/T - (A const.: 119.00)		TK — Alcon SN60WF — - Haigis - (A0: -0.769 A1: +0.234 A2: +0.217)	
IOL (D)	Ref (D)	IOL (D)	Ref (D)
+31.50	-0.58	+33.50	-0.74
+31.00	-0.20	+33.00	-0.37
+30.50	**+0.17**	**+32.50**	**+0.00**
+30.00	+0.54	+32.00	+0.37
+29.50	+0.91	+31.50	+0.73
+30.73 Emmetropia		+32.51 Emmetropia	

K — Alcon SN60WF — - Hoffer® Q - (pACD: +5.64)		K — Alcon SN60WF — - Holladay 1 - (SF: +1.84)	
IOL (D)	Ref (D)	IOL (D)	Ref (D)
+33.50	-0.86	+32.50	-0.67
+33.00	-0.49	+32.00	-0.30
+32.50	**-0.13**	**+31.50**	**+0.07**
+32.00	+0.23	+31.00	+0.43
+31.50	+0.59	+30.50	+0.79
+32.32 Emmetropia		+31.59 Emmetropia	

Figure 2. Biometry reports.

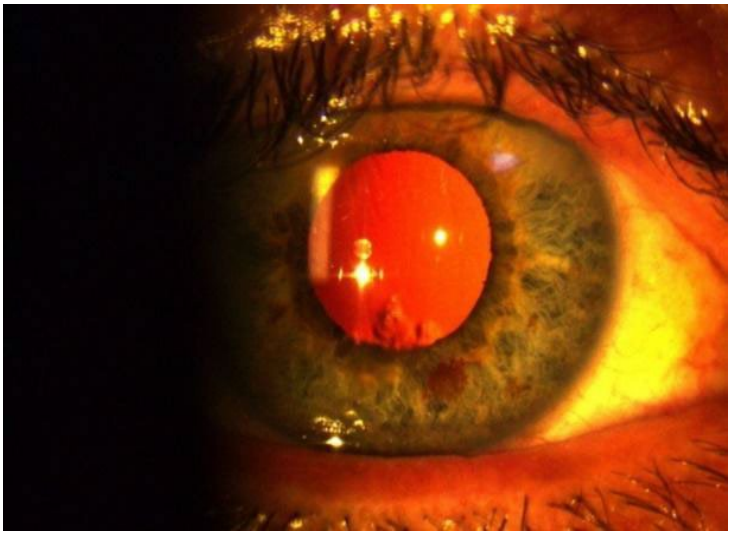

Figure 3. Postoperative next day (Intraocular lens)

DISCUSSION

Ocular trauma frequently results in significant vision impairment. Each year, 55 million ocular injuries are reported, resulting in approximately 1.6 million cases of vision loss attributed to traumatic cataracts(1,3).

Traumatic cataracts can manifest through either the direct rupture and deformation of the lens capsule or through impact-induced equatorial streching. These changes are caused by a number of factors that transmit traumatic stress energy to the contralateral part of the eye(6).

In instances of penetrating trauma, development of a traumatic cataract may occur instantly upon contact of the penetrant object with the lens(7). Blunt trauma can cause cataracts in the absence of capsular damage due to the forces exerted during the initial injury or the following inflammation(8). Electric shock can result in either diffuse milky-white opasification or the formation of multiple snowflake-like opacities. Chemical trauma can manifest when a foreign substance such as thallium, naphthalene, galactose and lactose, penetrates the eye and disrupts the structure of the lens(3,9). Exposure to ionizing radiation, often utilized in the treatment of ocular tumors or during cardiac interventions, has a potential to damage and rupture the lens. Ultraviolet radiation, on the other hand, can lead to true exfoliation of the lens capsule, subsequently resulting cataract(10,11)

Both slit lamp biomicroscopy and a dilated fundus examination are necessary and should be conducted. It is essential to identify indications of zonular defects which may encompass phacodonesis, focal iridodonesis, vitreous prolapse, and lens subluxation, although these indications are not always obvious(12). Capsular integrity, adequacy of zonule fibers,

existence of synechiae and vitreous extrusion must be considered when choosing a surgical approach(13).

The surgical intervention for traumatic cataracts demands a complex procedure, necessitating meticulous and thoughtful deliberation(11). The lens capsule and zonules are commonly susceptible to damage, leading to an increased risk of intraoperative issues, incluiding capsular tear, intraoperative lens displacement and vitreous loss(14). The morphological characteristics of cataracts play a major part in determining the choice of surgical approach and subsequently the final visual results(7) In a study comparing patients with open and closed globe injuries who were matched for similar features, the achievement of acceptable visual acuity after traumatic cataract surgery was markedly better in cases with open injuries(15).

Educating patients on the adoption of precautionary measures to prevent eye trauma is crucial. This includes the use of protective equipments like glasses and eye shields, minimizing exposure to environments with potential risks, and avoiding potential harm from infrared or ultraviolet rays(16)

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