CASE REPORT OLGU SUNUMU

DOI: 10.5336/ophthal.2024-105851

# A Case of Asymptomatic Retrocorneal Pigmentation due to Presumed Iris Cyst Rupture

## İris Kist Rüptürüne Bağlı Asemptomatik Retrokorneal Pigmentasyon Olgusu

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**ABSTRACT** A 22-year-old female patient underwent a routine ophthalmological examination. A hyperpigmented lesion measuring 3.9 mm×1.2 mm was noted on the endothelium of the inferotemporal quadrant of the cornea in the patient's right eye during the anterior segment examination. As the lesion was peripherally located, it did not affect visual acuity. A hyperreflective membrane was observed on the anterior segment optical coherence tomography in the area corresponding to the aforementioned endothelial lesion. The patient showed no signs of anterior segment inflammation, and intraocular pressure was within normal range. The patient was followed up with the diagnosis of retrocorneal pigmentation. During the 6-month follow-up period, there was no increase in pigmentation.

**Keywords:** Cornea; corneal endothelium; iris; iris cyst; optical coherence tomography

**ÖZET** Yirmi iki yaşında kadın hasta rutin göz muayenesi için başvurdu. Yapılan ön segment muayenesinde hastanın sağ gözünde kornea inferotemporal kadranda endotelde 3,9 mm×1,2 mm çapında hiperpigmente lezyon izlendi. Lezyon periferik yerleşimli olduğundan görme keskinliğine herhangi bir etkisi yoktu. Anterior segment optik koherens tomografide endotelde lezyona uyan bölgede hiperreflektif membran izlendi. Asemptomatik olan hasta takibe alındı. Altı aylık takiplerinde pigmentasyon alanında büyüme izlenmedi.

**Anahtar Kelimeler:** Kornea; korneal endotelyum; iris; iris kisti; optik koherens tomografi



Retrocorneal pigmentation may be attributable to anterior segment inflammation or may occur as a consequence of ocular surgery, trauma, chemical injury, neoplasm, or iris cyst rupture.[1] Vision loss may ensue due to central corneal involvement. The present case report details a case of retrocorneal pigmentation detected during a routine eye examination. As the pigmentation was located peripherally, it did not affect vision, and no further increase in pigmentation was observed during a 6-month follow-up period. Consequently, the patient was followed up with the diagnosis of retrocorneal pigmentation.

## CASE REPORT

A 22-year-old female patient presented to the Ophthalmology Department of Yüzüncü Yıl University Hospital for a routine eye examination. The ocular and systemic medical history of the patient was un-

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Peer review under responsibility of Turkiye Klinikleri Journal of Ophthalmology.

***Received:*** 29 Sep 2024 ***Received in revised form:*** 04 Feb 2025 ***Accepted:*** 04 Feb 2025 ***Available online:*** 02 Jul 2025

remarkable. Visual acuity was 20/20 in both eyes at the time of presentation. Biomicroscopy revealed an endothelial pigmentation of the cornea with a diameter of 3.9 mm×1.2 mm in the right eye (Figure 1). There were also 2 hypopigmented patches on the iris in the area corresponding to the lesion. There were also iris pigments on the crystalline lens (Figure 2). There were no transillumination defects of the iris. Her intraocular pressure was within the normal range. The gonioscopy showed an open angle. There was localized pigmentation in the angle and on the endothelium. Anterior segment optical coherence tomography showed a hyperreflective membrane on the endothelium (Figure 3). There was no increased pigmentation observed at 6 months follow-up. Treatment options were discussed with the patient. The diagnosis of retrocorneal pigmentation was confirmed. Written consent forms were obtained from the patient and her family for the publication of this report and images.

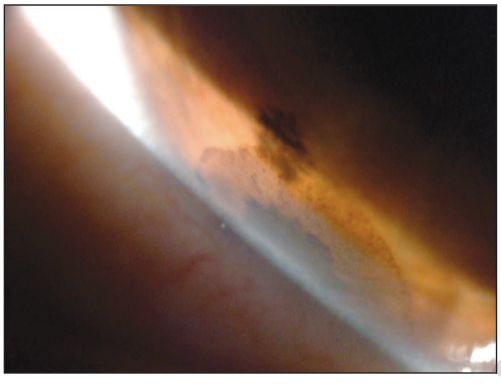

**FIGURE 1:** Slit-lamp photograph showing the corneal endothelial pigmentation

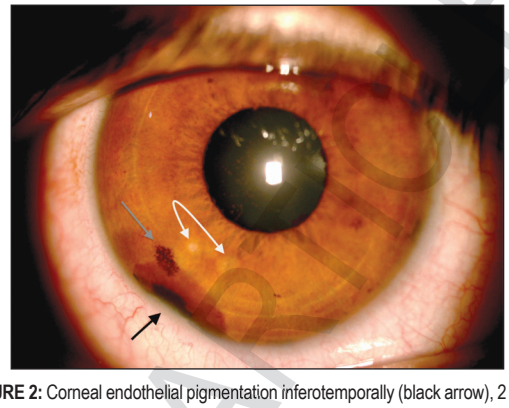

**FIGURE 2:** Corneal endothelial pigmentation inferotemporally (black arrow), 2 hypopigmented (white arrow) and one hyperpigmented spots (grey arrow) on the iris

## DISCUSSION

In this case, there was no history of ocular surgery, trauma, or chemical injury. In addition, there were 2 hypopigmented patches in the iris area corresponding to the lesion on the endothelium. Therefore, retrocorneal pigmentation secondary to ruptured iris cyst was considered. In morphologic studies of cases with retrocorneal pigmentation, 4 different cell types have been described. These are iris pigment epithelial cells, iris stromal melanocytes, corneal endothelial cells with phagocytized pigment granules, and pigmented macrophages.[2] The mechanism of the development of retrocorneal pigmentation can be divided into a proliferative and a non-proliferative type. In proliferative type, there is continuous pigment production by proliferation of iris pigment epithelium or iris stromal melanocytes. This leads to widespread iris atrophy and staining of the posterior surface of the cornea. In the non-proliferative type, the melanin pigment is phagocytosed by corneal endothelial cells or macrophages settle on the posterior surface of the cornea after absorption of the free pigment.[3] In this case, the peripheral retrocorneal pigmentation had no effect on vision. In addition, the patient did not want surgical intervention. Therefore, no histologic examination was performed. In our case, there was no his-

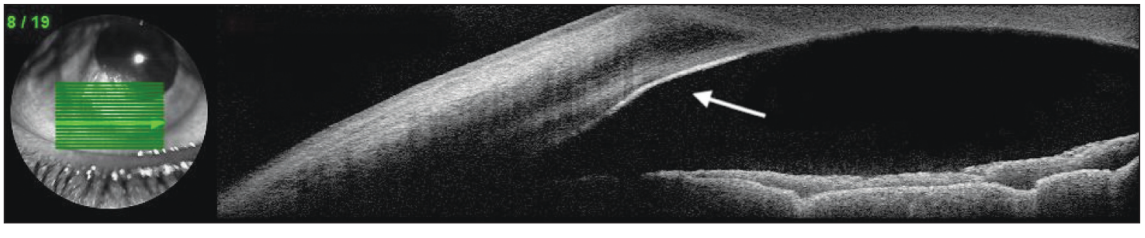


**FIGURE 3:** Anterior segment optical coherence tomography showing thin hyperreflective membrane on endothelium (white arrow)

tory of ocular surgery or trauma. There were 2 hypopigmented patches on the iris in the area corresponding to the area of retrocorneal pigmentation. Therefore, we decided that the retrocorneal pigmentation was caused by ruptured iris cyst. Iris cysts are divided into 2 types: primary iris cysts and secondary iris cysts. Primary iris cysts are congenital. They may be of epithelial or stromal origin. Secondary iris cysts may develop as a result of trauma, ocular surgery, drug use or neoplasia.[4] Primary iris cysts are often asymptomatic. However, secondary iris cysts may cause complications such as secondary glaucoma, uveitis, and corneal edema.[5] Hall et al. reported a case of a spontaneous rupture of an iris stromal cyst after a follow-up of 6 months. After the rupture, the size of the cyst decreased and there was significant contact with the endothelium.[6] In another case of inclusion cyst development as a result of trauma, the cyst ruptured spontaneously. Following the rupture, there was an increase in the intraocular pressure. Concurrently, anterior uveitis and corneal edema developed.[7]

Consequently, iris cyst rupture may manifest asymptomatically, as evidenced in this case, or it may precipitate complications, including uveitis, secondary glaucoma, and corneal edema. Therefore, in cases of iris cysts, patients should be informed of the treatment options and potential complications and should undergo close monitoring.


### *Source of Finance*

*During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.*


### *Conflict of Interest*

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

### *Authorship Contributions*

***Idea/Concept:*** *Muhammed Batur;* ***Design:*** *Veysi Yıldız;* ***Control/Supervision:*** *Veysi Yıldız, Muhammed Batur;* ***Data Collection and/or Processing:*** *Veysi Yıldız, Muhammed Batur, Kübra Karataş;* ***Analysis and/or Interpretation:*** *Veysi Yıldız, Muhammed Batur, Erbil Seven, Serek Tekin;* ***Literature Review:*** *Veysi Yıldız, Muhammed Batur;* ***Writing the Article:*** *Veysi Yıldız, Muhammed Batur;* ***Critical Review:*** *Veysi Yıldız, Muhammed Batur, Erbil Seven, Serek Tekin;* ***References and Fundings:*** *Veysi Yıldız, Muhammed Batur, Erbil Seven, Serek Tekin;* ***Materials:*** *Veysi Yıldız, Muhammed Batur, Erbil Seven, Serek Tekin;* ***Other:*** *Kübra Karataş.*



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