

# Ultrasonic Biomicroscopic Examination of Free Floating Cyst in the Anterior Chamber

Ön Kamarada Serbest Dolaşan Kistin Ultrasonik Biomikroskopik Muayenesi

Mustafa ÇELİK<sup>1</sup>, Özgül ALTINTAŞ<sup>2</sup>, Nurşen YÜKSEL<sup>3</sup>, Berna ÖZKAN<sup>4</sup>, Levent KARABAŞ<sup>2</sup>

Case Report

Olgu Sunumu

## ABSTRACT

A 66 year old patient referred to our glaucoma clinic for high intraocular pressure in the left eye. The patient had a history of trabeculectomy in his right eye 7 years ago. A free floating cyst was observed in the anterior chamber in biomicroscopic evaluation. The cyst was lighter than the humor aqueous in specific gravity and was changing position with the head movements. The cyst was also evaluated using the ultrasound biomicroscopy. We observed that the cyst disappeared spontaneously during the follow up.

**Key Words:** Anterior chamber, free floating cyst, ultrasound biomicroscope.

## ÖZ

Altmış altı yaşında erkek hasta sol gözünde yüksek göziçi basıncı nedeni ile glokom polikliniğimize sevk edildi. Hastanın hikayesinde 7 yıl önce sağ gözünden geçirilmiş trabekülektomi mevcuttu. Biyomikroskopik muayene sırasında sağ gözün ön kamarasında serbest olarak dolaşan bir kist tespit edildi. Kist hümor aközden daha hafifti ve baş hareketleri ile yer değiştirmekte idi. Kist ultrason biyomikroskop ile değerlendirildi. Takiplerde kistin kendiliğinden kaybolduğu tespit edildi.

**Anahtar Kelimeler:** Ön kamera, hareketli kist, ultrasonik biyomikroskop.

*Glo-Kat 2009;4:250-252*

## INTRODUCTION

Anterior chamber cysts may be congenital in origin or may develop as a complication of penetrating trauma, inflammation or intraocular surgery. Asymptomatic, small and stable cysts may be observed. The distinction of the cyst can be made easily by ultrasound biomicroscope (UBM). We present a case with a free floating cyst in the anterior anterior chamber who had undergone trabeculectomy 7 years ago.

**Geliş Tarihi : 10/06/2009**

**Kabul Tarihi : 14/09/2009**

**Received : June 10, 2009**

**Accepted : September 14, 2009**

- 1- Kocaeli Üniversitesi Tıp Fakültesi, Göz Hastalıkları AD, Kocaeli, Uz. Dr.
- 2- Kocaeli Üniversitesi Tıp Fakültesi, Göz Hastalıkları AD, Kocaeli, Doç. Dr.
- 3- Kocaeli Üniversitesi Tıp Fakültesi, Göz Hastalıkları AD, Kocaeli, Prof. Dr.
- 4- Kocaeli Üniversitesi Tıp Fakültesi, Göz Hastalıkları AD, Kocaeli, Yrd. Doç. Dr.

- 1- M.D., Kocaeli University Faculty of Medicine, Department of Ophthalmology Kocaeli/TURKEY  
CELİK M.,
- 2- M.D. Associate Professor, Kocaeli University Faculty of Medicine, Department of Ophthalmology Kocaeli/TURKEY  
ALTINTAŞ Ö., ozgulaltintas@yahoo.com  
KARABAŞ L., lkarabas@superonline.com
- 3- M.D. Professor, Kocaeli University Faculty of Medicine, Department of Ophthalmology Kocaeli/TURKEY  
YÜKSEL N., nursencemre@e-kolay.net
- 4- M.D. Asistant Professor, Kocaeli University Faculty of Medicine, Department of Ophthalmology Kocaeli/TURKEY  
ÖZKAN B., berna.ozkan@kocaeli.edu.tr

**Correspondence:** M.D. Asistant Professor, Berna ÖZKAN  
Kocaeli University Faculty of Medicine, Department of Ophthalmology Kocaeli/TURKEY

## CASE REPORT

A 66 year-old-man who had undergone trabeculectomy from his right eye seven years ago was referred to our glaucoma clinic. Examination of the patient revealed a visual acuity of 0.7 in his right eye and counting fingers from 2 meters in his left eye. Intraocular pressure was 12 mmHg in the right eye without medication, and 30 mmHg in the left eye with latanoprost once a day and combination of dorzolamide 2%-timolol 0.5% twice a day. The bleb was elevated and diffuse in appearance, cornea was clear in biomicroscopic examination. In the examination of the anterior chamber we noticed a round, free floating cyst behind the superior border of peripheral iridectomy in his right eye (Figure 1). The cyst was lighter than the aqueous in specific gravity. When the patient was in supine position, it was seen under the corneal endothelium. When he was examined in the upright position, the cyst was observed behind the iridectomy located at 12 o'clock. There was no sign of any inflammation in the anterior chamber. Gonioscopy did not reveal any abnormality. There was nuclear sclerosis in both eyes. The cup-disc-ratio was 0.8 in right eye, and there was glaucomatous optic atrophy in the left eye.

Ultrasonic biomicroscopic examination of the right eye revealed a free floating round, thin walled cyst with heterogenous internal reflectivity. Its diameter was measured approximately 1 mm while it was under corneal endothelium (Figure 2a-b). The cyst was mobile with postural changes (Figure 3a-b).

The patient underwent trabeculectomy in his left eye in the following month. During postoperative follow up of left the eye, we noticed that the free floating cyst in the anterior chamber in right eye disappeared spontaneously.

## DISCUSSION

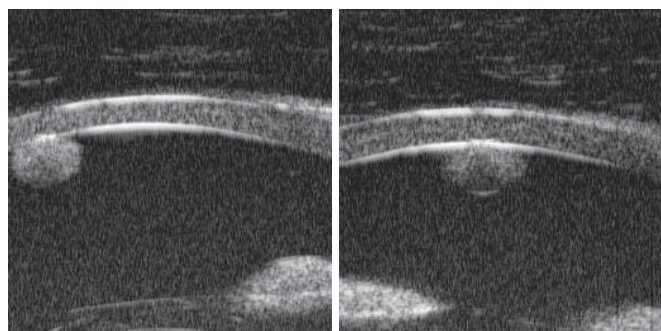
Free floating anterior chamber cysts have been reported sporadically.<sup>1,2</sup> Cystic lesions occurring within the anterior segment may be classified as primary and secondary. Primary cysts are developmental in nature. They are epithelial-lined spaces which involve a portion of the



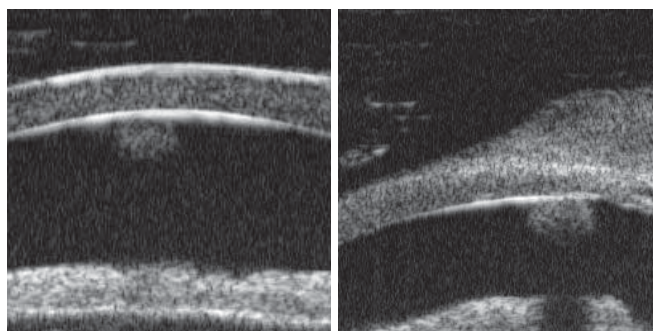
**Figure 1:** Gonioscopic view of the cyst resting in the superior border of peripheral iridectomy.

iris and have no recognizable etiology. A primary cyst can be further classified according to its histological origin, that is, one derived from the epithelium of the iris and the ciliary body, and another derived from the iris stroma.<sup>3</sup> Secondary cysts occur as a result of implantation of epithelial cells from the ocular surface, metastatic or parasitic lesion, or long term use of miotics.<sup>4</sup> Among the secondary cysts, epithelial inclusion cysts usually occur after penetrating ocular injuries or incisional ocular surgery. Various surgical procedures including cataract surgery, penetrating keratoplasty, radial keratotomy, and glaucoma surgery may predispose a patient to the formation of epithelial inclusion cysts.<sup>5</sup> The two types of cysts have different clinical courses. Primary cysts maintain their original state without an increase in size and complications, while secondary iris cysts may increase in size and may be accompanied by complications.

Free floating cyst do not need any intervention when they remain stable and asymptomatic. If the cyst enlarges and causes complications, it may require treatment. The complications of the cyst may include secondary glaucoma, pupillary obstruction, iridocyclitis, corneal decompensation, loss of vision, and intractable pain. The most common treatment recommendations are mitomycin injection into cyst, needle aspiration, endodiathermy, Nd-



**Figure 2:** a) UBM image of a free floating round, thin walled cyst and heterogenous internal reflectivity with a diameter approximately 1 mm touching corneal endothelium. b) UBM image of a free floating round, thin walled cyst and heterogenous internal reflectivity with a diameter approximately 1 mm touching corneal endothelium.



**Figure 3:** a) Changes in the cyst's position in the anterior chamber. b) Changes in the cyst's position in the anterior chamber.

YAG laser and surgical excision.<sup>1,6</sup> Surgical removal must be considered only for rapid enlargement or significant reduction in endothelial cell count.<sup>2</sup>

UBM can distinguish the nature of cyst giving detailed information on internal structure, reflectivity and shape.<sup>2,7</sup> We think that the cyst in our patient may be originated from implantation of ocular surface epithelium of the bleb region. We also hypothesize that it might be filled with the combination of hypoechoic material corresponding to fluid and degenerated epithelial cells, and by medium -echoic material with a hyperechoic core that corresponds to the inflammatory debris and cholesterol crystals. As a result the cyst had a heterogenous internal reflectivity. Interestingly, the content of the present cyst was lighter than aqueous in specific gravity, different from previous cysts reported in literature.<sup>1</sup>

---

## REFERENCES/KAYNAKLAR

---

1. Öner HF, Kaynak S, Koçak N, et al.: Management of free floating iris cysts in the anterior chamber: A case report. *Eur J Ophthalmol.* 2003;13:212-214.
2. Figus M, Ferretti C, Benelli U, et al.: Free-floating cyst in the anterior chamber: Ultrasound Biomicroscopic reports. *Eur J Ophthalmol.* 2003;13:653-655.
3. Shields JA.: Primary cysts of the iris. *Trans Am Ophthalmol Soc.* 1981;79:771-809.
4. Finger PT, McCormick SA, Lombardo J, et al.: Epithelial inclusion cyst of the iris. *Arch Ophthalmol.* 1995;113:777-780.
5. Verma L, Ray M, Sharma N et al.: Presumed epithelial inclusion cyst of the iris seven years after radial keratotomy. *Cornea.* 2002;21:709-711.
6. Baykara M, Şahin S, Ertürk H.: Free iris cyst in the anterior chamber. *Ophthalmic Surg Lasers Imaging.* 2004;35:74-75.
7. Pavlin CJ, McWhae JA, MCGowan HD, et al.: Ultrasound biomicroscopy of anterior segment tumors. *Ophthalmology.* 1992;99:1220-1228.