
SHORT COMMUNICATION

Case report

Free-floating cyst in the anterior chamber: Ultrasound biomicroscopic reports

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PURPOSE. *To report a free-floating dislodged pigmented cyst in the anterior chamber and to describe the ultrasound biomicroscopic (UBM) features of the lesion.*

METHODS. *Case report.*

RESULTS. *A 26-year-old man presented with noise in his left eye in the prone position. Slit-lamp examination revealed a small pigmented mass lesion at the 6 o'clock position in the anterior chamber, slowly moving with changing head postures. UBM revealed an unfixed dislodged pigmented cyst with a thin wall and no internal reflectivity, changing its shape from ovoid to circular. Five years later, the anterior segment does not show any modification and the cyst has not changed in size or appearance.*

CONCLUSIONS. *Cysts of the iris pigment epithelium arise in the posterior iris layer. They may be central, midzonal, peripheral, or dislodged. Dislodged cysts may be repositioned and fixed or free-floating in the vitreous or in the anterior chamber. Surgical removal must be considered only for a rapid enlargement or significant reduction in endothelial cell count. UBM can distinguish solid from cystic lesions, giving detailed information on internal structure, reflectivity, shape, and thickness. (Eur J Ophthalmol 2003; 13: 653-5)*

KEY WORDS. *Free-floating cyst, Ultrasound biomicroscopy, Iris cyst, Iris tumor*

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INTRODUCTION

Primary iris pigment epithelium cysts occur spontaneously and are defined as epithelial lined structures that arise in the posterior iris layer (1, 2). They may be central, midzonal, peripheral, or dislodged. Dislodged cysts may be repositioned and fixed in the angle in the anterior chamber or free-floating in the vitreous or in the anterior chamber (2, 3). The occurrence of a free-floating dislodged cyst in the anterior chamber, although unusual, is not extremely rare. To our knowledge, no data exist in the literature on

ultrasound biomicroscopic (UBM) features of an unfixed dislodged pigmented cyst in the anterior chamber. The aim of this report is to describe the UBM features of these lesions.

Case report

A 26-year-old man was referred to our observation because of noise in his left eye in the prone position. Slit-lamp examination revealed a normal external eye, conjunctiva, and cornea; the pupil was round, readily reacting to light and accommodation.

A small pigmented mass lesion was detected at the 6 o'clock position in the anterior chamber, slowly moving with changing head postures (Fig. 1). Use of a Goldmann gonioscens did not reveal a stalk area of origin and the angular structures were normal in appearance,

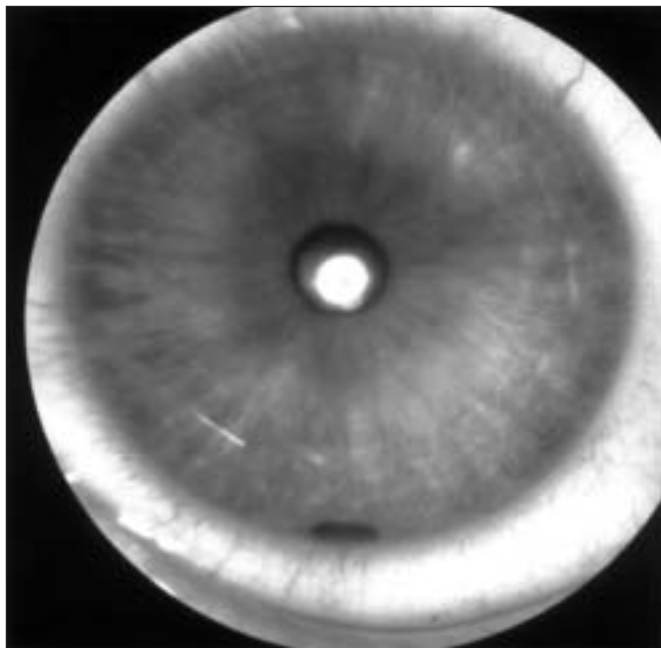


Fig. 1 - Small pigmented mass lesion at 6 o'clock position in the anterior chamber.

with no evidence of pigmented amounts. Intraocular pressure was 15 mmHg.

UBM examination was performed with a Humphrey 840 instrument, using a 50 MHz probe and an immersion technique.

UBM examination revealed a free-floating pigmented cyst with a thin wall and no internal reflectivity, with a diameter of approximately 1 mm. When the patient's head moved, the cyst floated up along the iris from the angle to the pupillary zone, throughout the anterior chamber, changing its shape from ovoid to circular (Fig. 2).

The endothelial cell count showed a normal cellular density (2530 cells/mm²) in both eyes.

After 5 years of follow-up, the anterior segment does not show any modification and the cyst has not changed in size or appearance.

DISCUSSION

Dislodged iris pigment epithelium cysts are usually unilateral and solitary; they vary in color, being clear to brown, and are oval to round (2). Free-floating cysts are usually asymptomatic; surgical removal must be considered only for a rapid enlargement or a significant re-

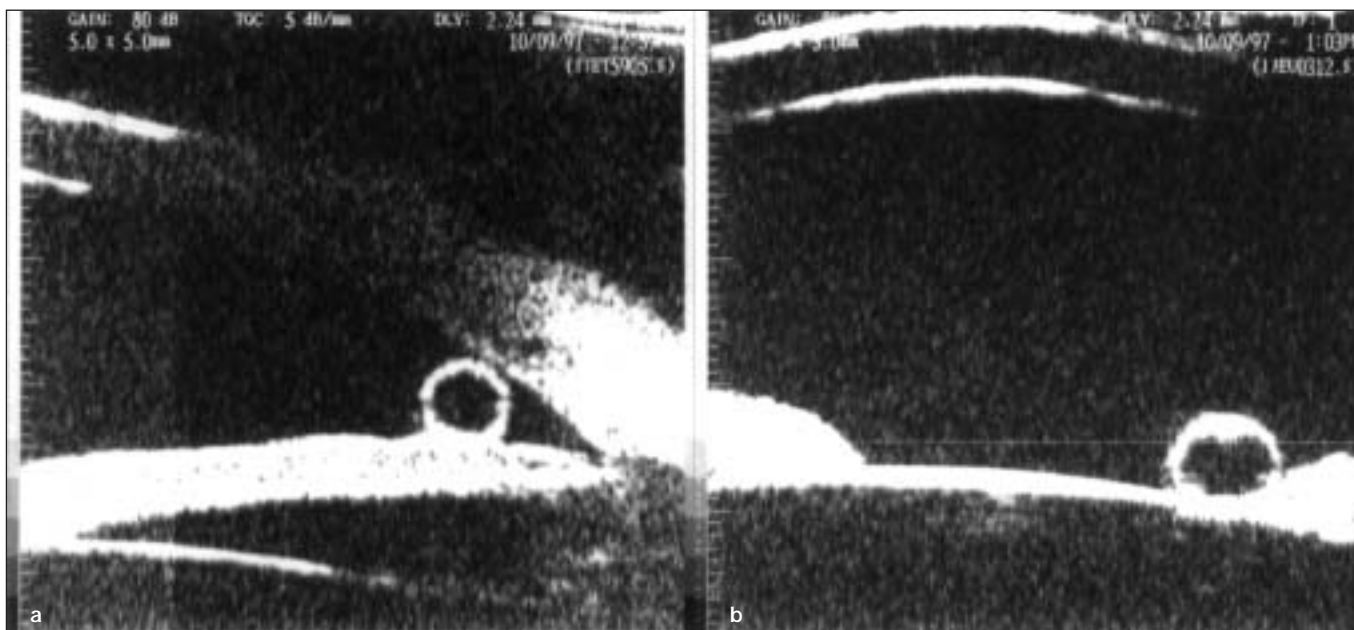


Fig. 2 - Ultrasound biomicroscopic image of a free-floating iris cyst in the anterior chamber in the angle a) and on pupillary zone b).

duction in the endothelial cell count. Histopathologically, they appear to be composed of one or more layers of pigmented cells; the fluid content of the cysts is suggested to be similar to aqueous humor in specific gravity (4). Free-floating anterior chamber cysts should be differentiated from fixed dislodged cysts, from iris or ciliary body melanoma, and from adenoma of the iris pigment epithelium.

On slit-lamp examination, iris melanoma is located in the iris stroma and is generally brown (if not amelanotic); adenoma of the iris pigment epithelium is located posterior to the iris stroma and is usually black. An iris cyst usually arises in the iridociliary sulcus and pushes the iris forward. It does not invade the iris stroma and occasionally it can break through the iris and appear in the anterior chamber, while melanoma and adenoma never do (5).

The UBM appearance of an unfixed dislodged pigmented cyst is a well-defined lesion containing clear intracavitary fluid with no internal reflectivity (6, 7), moving in the anterior chamber when changing the position of the patient's head, without any iris insertion.

Fixed iris and ciliary body cysts arise from iris posterior layer and are closely linked to iris structure. The UBM findings of iris nevi are relatively small hyporeflexive lesions, replacing part or all of the underlying uveal stroma, without involving the neuroepithelial layer. The UBM features of malignant melanoma are larger mass lesion, located in the iris stroma, destroying the adjacent neuroepithelium. Intralesional blood vessels may be demonstrated and internal reflectivity is usually low.

UBM can distinguish solid from cystic lesions, giving detailed informations on internal structure, reflectivity, shape, and thickness of these lesions (6).

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REFERENCES

1. Shields JA. Primary cysts of the iris. *Trans Am Ophthalmol Soc* 1981; 79: 771-809.
2. Lois N, Shields CL, Shields JA, Mercado G. Primary cysts of the iris pigment epithelium. *Ophthalmology* 1998; 105: 1879-85.
3. Shields JA, Kline MW, Augsburger JJ. Primary iris cyst: a review of the literature and report of 62 cases. *Br J Ophthalmol* 1984; 68: 152-66.
4. Fine BS. Free-floating pigmented cyst in the anterior chamber. A clinico-histopathologic report. *Am J Ophthalmol* 1969; 67: 493-500.
5. Shields JA, Shields CL, DePotter P, Wagner RS, Caputo AR. Free-floating cyst in the anterior chamber of the eye. *J Pediatr Ophthalmol Strabismus* 1996; 33: 330-1.
6. Pavlin CJ, McWhae JA, MCGowan HD, Foster FS. Ultrasound biomicroscopy of anterior segment tumors. *Ophthalmology* 1992; 99: 1220-8.
7. Correa ZM, Augsburger JA. Ultrasound biomicroscopy of the anterior ocular segment. In: *Duane's Foundations of Clinical Ophthalmology*. Vol. 2. Philadelphia; Lippincott-Raven: 1997: 2-17.