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Needle aspiration with surgical excision of an epithelial posttraumatic iris cyst – a case report

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Summary

Background:

The aim of this study was to report on epithelial posttraumatic iris cyst that was successfully treated with needle aspiration and surgical excision with surrounding iris tissue.

Case Report:

A 30-year-old woman was treated for a large fluid-filled cyst in the anterior chamber of the left eye; 25 years before, she had an open globe injury. She observed deterioration of her visual acuity 1 year before her visit to our clinic. During ophthalmological examination, an iris cyst was diagnosed. As a result, she had Nd:YAG laser puncture of the cyst in the left eye, performed 5 months before she came to our clinic. After a short time of decompression, the cyst rapidly grew in size (2/3 of the anterior chamber), and her visual acuity was getting worse due to an aggressive growth of the iris cyst. Visual acuity was 0.06. Needle aspiration with surgical excision of the cyst with surrounding iris tissue was performed. Histopathologic examination confirmed an epithelial cyst. At the 1-year follow-up, there was no evidence of recurrence of the iris cyst, and BCVA was 0.2.

Conclusions:

This case report provides evidence that needle aspiration with surgical excision of iris cyst seems to be an effective treatment method of this complication.

key words:

epithelial iris cyst • needle aspiration • surgical treatment • open globe injury • aspiration and photocoagulation

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BACKGROUND

Iris cysts can be primary or secondary [1–7]. Primary cysts originate from pigment epithelium or the stroma [4,8]. Secondary cysts take their origin from corneal, conjunctival or skin epithelium, which can penetrate into the anterior chamber through the surgical or posttraumatic wound, or they can be caused by long-term miotic therapy. They can be also associated with metastases or parasites [9,10]. Small cysts that do not grow should be controlled, and they do not require any treatment; however, it may be necessary to perform surgical treatment to remove medium or large cysts, as complications may occur [11], including corneal edema, uveitis, glaucoma, worsening of the visual acuity in some cases due to overlapping of the pupil, cataract and ocular pain [5,12–17].

We presented the results of needle aspiration with surgical posttraumatic epithelial cyst excision, 25 years after open globe injury of the eye.

CASE REPORT

A 30-year-old woman came to our Eye Clinic in December 2009 with a progressive visual loss of her left eye. At the age of 4 she had had an open globe injury caused by a cone. The corneal wound was surgically closed by sutures after the injury. She observed deterioration of her visual acuity 1 year before her visit to our clinic. She came to see an ophthalmologist, who diagnosed an iris cyst. As a result, she had Nd:YAG laser puncture of the cyst in the left eye performed 5 months before she came to our clinic. This treatment was unsuccessful. After a short time of decompression, the cyst rapidly grew in size. According to the patient, after the laser puncture she regained better visual acuity for a very short period of time. After this, her visual acuity deteriorated, and it was much worse than before the laser puncture. It was caused by an aggressive growth of the iris cyst.

On admission, a slit lamp examination revealed a corneal scar at the 9 o'clock position and the presence of an extensive fluid-filled iris cyst. It occupied 2/3 of the anterior chamber and overlapped the pupil. The cyst was in contact with corneal endothelium and the lens, resulting in partial corneal edema and cataract (Figure 1). The fundus examination did not show any abnormalities. Best corrected visual acuity (BCVA) of the left eye was 0.06 and intraocular pressure was 20 mmHg.

The patient was informed about her clinical status and was classified for the needle aspiration with surgical cyst removal. At the first step, 1.4% hyaluronate sodium (Haelon GV) was injected into the anterior chamber to viscodissect the cysts from epithelium. An ophthalmic viscosurgical device (OVD) was also injected beneath the cyst to protect the lens. Next, the content of the cyst was aspirated using a 27G needle, then the corneal incision was made. The cyst was completely removed by means of Vannas scissors, with a safe margin of surrounding iris tissue. The iris was sutured with 2 nylon 10.0 sutures and the pupil was reconstructed. The OVD was then removed and the corneal incision sutured. The removed cyst tissue was preserved and sent for histological analysis. There were no complications during the procedure. The histopathological analysis revealed an epithelial cyst. Middle anterior segment uveitis was observed 10 days after the operation, and was successfully treated by mydriatic, antibiotic and

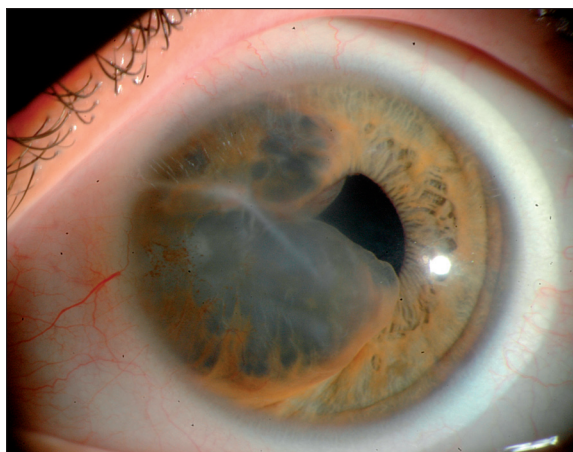


Figure 1. The left eye – the epithelial iris cyst before surgery.

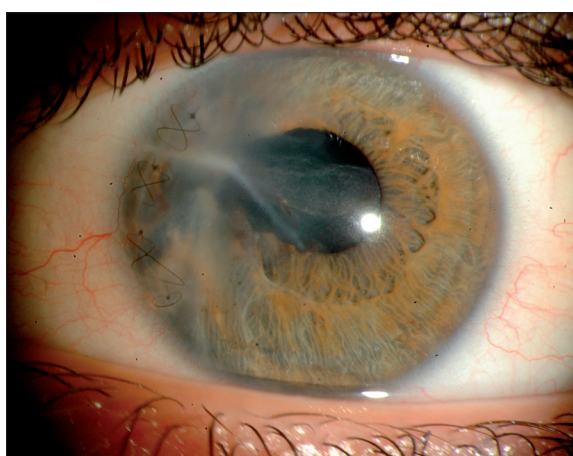


Figure 2. The left eye – 6 months after surgery with needle aspiration and surgical excision of the epithelial iris cyst.

steroid drops. BCVA 10 days after surgery was 0.1. At present the patient is still being followed-up. The BCVA at 1-year follow-up was 0.2, intraocular pressure was 18 mmHg, and we did not notice any subsequent growth of the cyst (Figure 2).

DISCUSSION

Formation of secondary epithelial iris cysts is usually a result of implantation corneal or conjunctival epithelial cells through a surgical or posttraumatic wound. Risk factors contributing to the growth of the cysts of iris are long-term postoperative hypotony and incarceration of iris or capsule lens. In cases when complications occur (e.g., glaucoma, cataract, worsening of visual acuity, uveitis, corneal decompensation), surgical removal of the cyst may be required. Many different treatments have been described in the literature, including iris cyst excision, aspiration or laser puncture [7]. Multiple methods are suggested due to different degrees of aggravation of growing cysts, surgeon experience and other factors. Presented methods of treatment include en bloc remove, cyst removal using vitrectomy with cryodestruction, radiation, cyst removal with iridectomy [5,11] cyst aspiration without cauterization, aspiration with endodiatomy [18], cryoapplication [19], aspiration with iridectomy, alcohol or mitomycin injection into the cyst [20,21], photocoagulation [22,23],

aspiration with photocoagulation of the cyst [13,14,24] or combinations of these techniques [24,25].

Recently, many authors have reported using photocoagulation in treatment of iris cysts [11,14,22,23]. This method has limitations due to the difficulties in cyst walls visualization, adverse effects in treatment of large cysts, a risk of the cyst wall breaking, or its recurrence and excessive growing of epithelium in the anterior segment [11,26]. After photocoagulation of iris cysts some complications may occur, for example uveitis, ocular pain, forming of posterior synechiae, and rise of intraocular pressure [12,14]. Some authors report good effects using iris cyst photocoagulation [22,23], but it is ineffective in cases of large cysts located near the endothelium [27], which was presented in our patient's case. Previous Nd: YAG laser therapy in her left eye could be the cause of inflammation, consecutive epithelium growth and iris cyst recurrence.

The most aggressive method in treatment of iris cysts is its surgical total removal with connecting tissue of cornea, iris, anterior chamber and ciliary body, usually with corneo-scleral transplantation and cryoapplication [28,29]. This method causes irreversible destruction of anterior chamber tissue, and in our opinion should be performed only in cases of very large and recurrent changes, after other cyst removal procedures have been performed.

Among the complication which may occur after surgical removal of iris cyst, some are worth mentioning: bleeding, difficulties with cyst visualization, and breaking of the cyst wall with release of its contents into the anterior chamber [11,26]. Incomplete removal of the cyst could be the cause of its recurrence and excessive epithelial expansion through the anterior segment [29].

Recurrence of iris cysts after their removal is a common complication; therefore physicians have been looking for new, more successful methods to eliminate this complication. Our patient had previously had Nd: YAG laser puncture of the cyst, which turned out to be unsuccessful. We presented her with multiple choices of reoperation. After analysis of her local condition, we recommended needle aspiration with surgical excision of the cyst with the surrounding tissue, and this was accepted by the patient. In our opinion, this method seems to be the safest and the most effective, which is confirmed by 1-year follow up without major complications or iris cyst recurrence.

It is difficult to say unequivocally which method of iris cyst removal is most effective. The question of photocoagulation or surgical methods is still open for discussion. Haller et al. [11] presented 7 cases of cyst removal; in 3 patients surgical excision was performed and in 4 patients photocoagulation was performed. Both methods proved to be successful; however, full comparison is not always possible due to the variety of cases studied.

CONCLUSIONS

The choice of technique in iris cysts removal is a great challenge for surgeons and should be chosen individually for every patient. Needle aspiration with surgical excision of iris cyst seems to be an effective method for treatment of this complication.

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