



A CASE REPORT ON SPONTANEOUS CLOSURE OF TRAUMATIC CYCLODIALYSIS CLEFT

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ABSTRACT A 21-year-old man was referred to our ophthalmic department after trauma to the left eye caused by a stone. On examination, cyclodialysis cleft was found and medically managed. On 2 month follow up, patient had a vision of 20/20.

KEYWORDS : trauma, cyclodialysis cleft, cycloplexy

INTRODUCTION

A cyclodialysis cleft results from the disinsertion of the longitudinal ciliary muscle fibers. This separates the ciliary body from the scleral spur and underlying sclera, allowing direct communication between the anterior chamber and the ciliochoroidal space as well as unrestricted bulk flow of aqueous from the anterior chamber to the supraciliary space. It results in hypotension as a consequence of the efflux of aqueous from the eye via the suprachoroidal space (1,2) and decreased aqueous production due to the diminished blood supply to the ciliary body. (3)

A cyclodialysis cleft can be traumatic or iatrogenic following anterior segment surgery. The sequelae of cyclodialysis include shallow anterior chamber, cataract, retinal and choroidal folds, hypotonous maculopathy, and loss of vision in cases of prolonged hypotony.

Recently, ultrasound biomicroscopy (UBM) has been used to identify and localize the cleft when direct visualization is difficult. (4) Many treatments have been proposed to resolve clefts with persistent hypotony. These include laser transcorneal photocoagulation; transscleral cyclophotocoagulation; ciliochoroidal argon laser endophotocoagulation; cryotherapy; diathermy; translimbal and transscleral suture fixation; direct cycloplexy; anterior scleral buckling; and combined vitrectomy, cryotherapy, and gas tamponade. (3,5-12) We report a case of cyclodialysis cleft with chronic hypotony that was diagnosed by UBM and medically managed.

Case Report

A 21-year-old man was referred to our ophthalmic department after trauma to the left eye caused by a stone. The visual acuity in the eye was hand motions. Slitlamp examination showed corneal edema with Descemet folds and a 3.0 mm hyphema. The intraocular pressure (IOP) was 3 mm Hg. B-scan echography revealed intravitreal hemorrhage and choroidal detachment. Ultrasound biomicroscopy examination revealed a cyclodialysis cleft from 12 o'clock to 1 o'clock. (Figure 1) The right eye was normal.

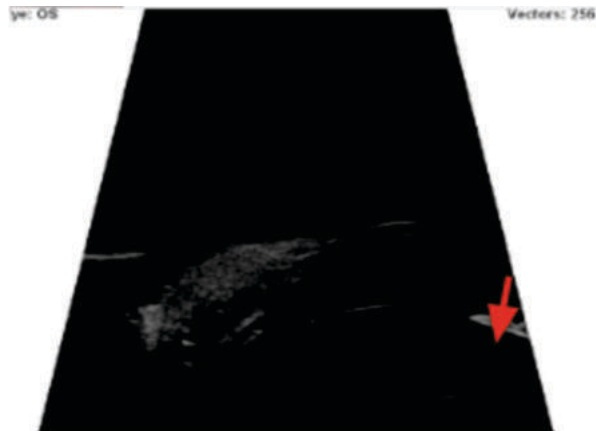


Figure 1 : UBM showing traumatic cyclodialysis cleft

Medical treatment was started with a cycloplegic agent (atropine 1% 3 times a day) together with topical and systemic steroids. After 1 month, the visual acuity had improved to 20/40 and the IOP fluctuated between 7 mm Hg and 9 mm Hg. Gonioscopy revealed a cyclodialysis cleft at

12 to 1 o'clock position. (Figure 2) On slit lamp examination, corneal edema, hyphema and intravitreal hemorrhage got resolved. Fundus examination showed signs of hypotony with ILM folds. (Figure 3) Optical coherence tomography (Carl Zeiss Meditec) confirmed the macular findings (Figure 4).

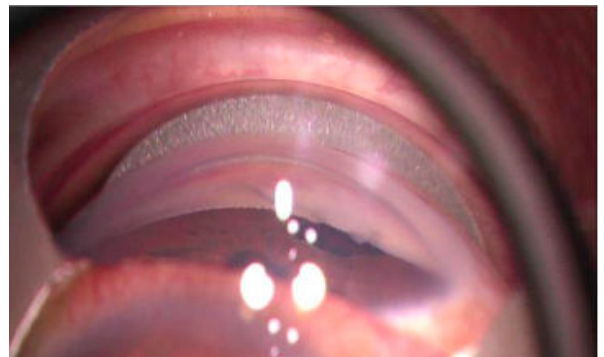


Figure 2: Gonioscopy showing cyclodialysis cleft(Goldmann 3-mirror gonioscopy lens)

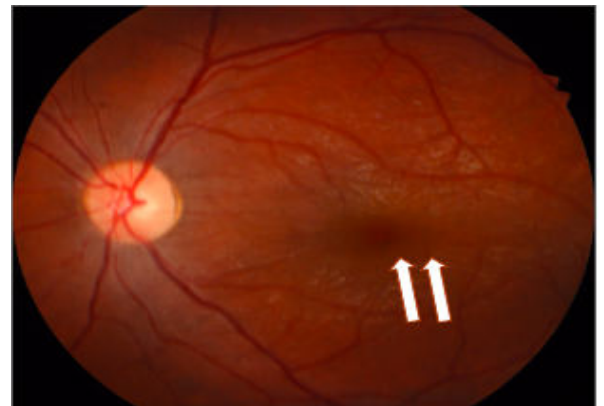


Figure 3: Fundus examination showing macular folds.

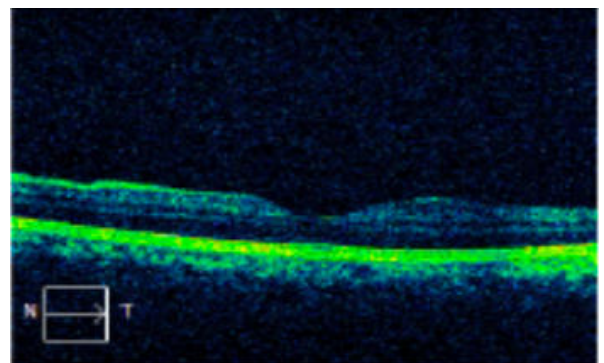


Figure 4: OCT demonstrates intraretinal retinal striae and folds.

One month later, steroids were gradually tapered and the IOP was 18 mm Hg and the visual acuity increased to 20/20 as a result of promoted

inflammation and ciliocleral adhesion. Given the improvement in visual acuity and good response to medical treatment, surgery was deferred in the left eye.

DISCUSSION

A cyclodialysis cleft may cause bulk flow of aqueous humor into the supraciliary space, a shallow anterior chamber due to reduced aqueous production, choroidal effusion, cataract, hypotony maculopathy, and reduced vision. (1) The hypotony magnitude is not always proportional to the cleft size. (13) Accurate diagnosis and precise identification of the cleft is necessary for appropriate management.

Ultrasound biomicroscopy has been used for cleft identification, localization, and measurement. While gonioscopy allows evaluation from the anterior face of the ciliary cleft only, UBM provides cross-sectional information on the iridocorneal angle. In addition, it can easily picture a cyclodialysis when direct communication between the anterior chamber and the supraciliary space is present owing to the contrasting reflectivity of the aqueous and the adjacent tissue. Ultrasound biomicroscopy is also particularly useful during follow-up.

Management of cyclodialysis clefts associated with hypotony is aimed at preventing the egress of aqueous via the suprachoroidal space. Topical cycloplegic therapy with atropine is recommended for at least 1.5 months to relax the ciliary body so it can be reapposed to the sclera and to promote spontaneous healing of the cleft. (3) Corticosteroids are also indicated to promote spontaneous cleft closure. (14) Poor response to conservative treatment in the presence of hypotonous maculopathy, disc edema, macular folds, choroidal detachment, or corneal edema associated with worsening of vision requires surgical intervention.

Options for cyclodialysis repair include laser photocoagulation (5,7), cyclodiathermy or cryopexy, (3) and surgical repair. Various methods of cycloplexy involving different scleral dissections and different suture techniques have been proposed to reattach the ciliary body to the scleral spur. However, most of them require extensive surgical skills and multiple passes of sutures through vascular structures. (9-11) A more recent series of 17 eyes found 36% of initial cryopexies successful in eyes with no more than 3 clock hours of cyclodialysis. (15) Pars plana vitrectomy, gas tamponade, and cryotherapy have also been reported, but their indications are limited to patients with additional posterior segment problems and the recovery period is long. (12)

CONCLUSION

Cycloplegic drugs are the mainstay of medical therapy. These medications cause relaxation of the ciliary muscle tone and dilatation of the ciliary body ring and help appose the detached muscle fibers to the sclera. Topical atropine sulfate 1% is typically applied twice daily for as long as 6–8 weeks. (3) The role of topical steroids is less clear: some providers increase steroid use, while others advocate reducing steroids to deliberately promote inflammation and ciliocleral adhesion. Thus, more studies are required to study effect of steroid therapy on small cyclodialysis cleft management.

Statement of Ethics

Study adhered to the tenets of the Declaration of Helsinki. Written Informed consent was obtained from patient for publication of this case report.

Conflict of Interest

Author has no conflict of interest in this study.

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