Case of post traumatic cyclodialysis cleft refractory to treatment

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45 year old man presented with a history of loss of vision in his left eye following trauma with a wooden stick a month ago. He was treated with topical steroids by a local doctor. There was no positive systemic history. He has never used any glasses or took treatment for any ocular problem. On examination his best corrected visual acuity was 6/6, N6 in right eye and 2/60, <N36 in left eye. Left eye showed sluggishly reacting pupil with phacodonesis. Applanation tonometry showed intraocular pressure to be 10mmHg in the right eye and 0 mm Hg in the left eye respectively. Gonioscopy showed open angles with evidence of angle recession. On fundus examination the details could not be elicited because of dense vitreous hemorrhage. B-scan examination of left eye showed point like echoes in the vitreous cavity suggestive of vitreous hemorrhage with partial posterior vitreous detachment and minimal choroidal thickening.

Considering non resolving vitreous haemorrhage he underwent parsplana vitrectomy. Intraoperatively retina was attached and there were no retinal breaks or dialysis. He was put on topical steroid and antibiotic therapy and with an atropine eye drops. Post operatively fundus examination showed striae at the macula (Figure 1).

Optical coherence tomography showed mild spongiform oedema at the macula with serous macular detachment. (Figure 2)

Intraocular pressure was still unrecordably low. A diagnosis of post traumatic hypotonic maculopathy was made. Best corrected visual acuity improved to 6/60 with aggressive systemic and topical steroids and topical atropine. Ultrasound biomicroscopy showed cyclodialysis cleft in the 11 O clock to 2 O clock areas (Figure 3).

Cryotherapy was performed to the area of cyclodialysis cleft. In spite of meticulous surgical intervention and cryopexy and medical management the intraocular pressure raised only up to 2mm Hg. UBM showed persisting cyclodialysis cleft. Visual acuity deteriorated to 3/60 due to secondary macular changes as a result of hypotonic maculopathy.

Discussion:
Aqueous humor formed by the ciliary body at approximately 2.5µl/min and with 1%turnover every minute. Most of the aqueous passes out through the trabecular meshwork as a result of pressure gradient and uveoscleral outflow. The equatorial stretch due to the indirect forces can separate the ciliary body from the sclera spur where this creating an abnormal communication between the anterior chamber and the suprachoroidal space resulting in hypotony i.e. 6mm Hg or <10% of normal IOP. Cyclodialysis is the disinsertion of longitudinal ciliary muscles from scleral spur resulting in a cleft which connects anterior chamber with suprachoroidal space. Blunt trauma can cause the transient lowering IOP and can develop hypotony many years after the initial injury. Angle recession can be seen in good gonioscopic examination.
Cleft does not bear directly on the degree of hypotony. It may be microscopic in size can be called as occult which can be missed easily. In this case the flare in the hypotonic eye confirms the normal production of aqueous from the ciliary body. Clefts can close spontaneously with dramatic rise in IOP. Ultrasound biomicroscopy (UBM) provides the best means for diagnosing cyclodialysis clefts. The management of cyclodialysis clefts requires a step-wise approach. Initially, it is of particular importance to identify the full extent and location of the cleft as in some cases more than one cleft may be present requiring a variety of nonsurgical and surgical interventions. Nonincisional interventions include the application of various lasers and cryotherapy in the vicinity of the cleft. The traditional approach of direct cyclopexy has more recently been complemented by recent reports of employing modified external plombage procedures, vitrectomy and gas assisted endotamponade. There are insufficient studies formally evaluating these techniques to be able to assess their safety and efficacy. In this case non surgical intervention by cryotherapy was not successful in closing the cyclodialysis cleft.

**Conclusion:**

Post traumatic cyclodialysis cleft can result in profound visual loss even after intervention due to failure of cleft to obliterate.

**References:**