Spectral domain OCT imaging to diagnose and monitor hypotony maculopathy
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**Purpose:** To report the use of spectral domain OCT technology (SD-OCT) with 2-D and 3-D imaging rendering to diagnose and plan treatment in a case of clinically inapparent hypotony maculopathy with visual symptoms. Spectral Domain OCT is an exciting new tool to monitor not only retinal but also glaucoma related pathology. 3-D software image rendering can complement clinical decision making as presented.

**Methods:** Single case report of an only eyed patient with progressive optic disc cupping despite being on maximal medical treatment. At baseline the patient had moderate nuclear sclerotic cataract with 0.9 cupped disc and visual acuity of 0.3 LOGMAR (Snellens 6/12). Augmented Trabeculectomy with mitomycin-C was carried out. Post-op IOP’s were noted to be 8 mm, 6 mm and 6 mm Hg at day 1, week 1 and week 2 follow up with a good filtering bleb. Persistent central blur was noted by the patient but deep AC but no clinical macular striae / folds. There was no evidence of trab wound leak. Imaging with 3-D 1000 OCT (Topcon) and Spectalis were compared to show RPE irregularity and folds confirming subclinical hypotony maculopathy with RPE folds better appreciated on 3-D software rendered images.

**Results:** Trabeculectomy bleb was revised and IOP adjusted to 11 mm Hg with 4 month follow up and confirmed by RPE regularity on OCT and symptomatic resolution. At baseline presentation the 2-D single B-scans through the fovea using either Topcon or Spectalis OCT machines did not explain the symptomatic deterioration, as shown figures 1 and 2. Full evaluation of the raster scans through the macula showed a better appreciation of the RPE irregularity. Topcon raster scan used 6 * 6 mm raster scans while Spectalis was viewed with 37 line scans through the macula, as shown in figures 3 and 4. 3-D rendering with use of advanced software options on Topcon 3-D 1000 machine (version 2.2) allowed excellent three dimensional visualization of the RPE folds through the macula resulting from hypotony that settled after bleb revision. IOP pressure improved and visual symptoms resolved.

**Conclusion:** SD-OCT is complementary and possibly diagnostic in cases with symptomatic but subclinical hypotony maculopathy. Our case had an only eye with significant nuclear sclerosis precluding adequate clinical view of the macula to evaluate macular folds. Discussion of the OCT scans with the patient and family greatly informed the management decision and helped as an objective follow up parameter following bleb revision.
Fig 1. Topcon B Scans and Color Photograph. Poor macular detail on colour photo noted. At baseline (middle) and 4 months post bleb revision (bottom) the B scans do not show any convincing RPE irregularity or folds.

Fig 2. B scans at baseline and follow up. Slight RPE irregularity on Spectralis OCT imaging; RPE contour much improved 04 months post bleb revision.
Fig 3. Hypotony maculopathy clearly visualized by series of six 3-D cropped and rotated views clearly showing irregular and bumpy RPE (Images with Topcon 3D-1000 OCT system).

Fig 4. Following Bleb revision. Series of six 3-D scans cropped and rotated clearly show nearly smooth and non-bumpy RPE at 4 months follow up. (Images with Topcon 3D 1000)