

# Cataract surgery in eyes with a pre-existent posterior capsule rupture after intravitreal anti-VEGF injections

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recovery from the first CSC episode. Recurrence of CSC and disease progression were retrospectively investigated through multimodal imaging during follow-up. Increase in RPE alterations in the affected and unaffected eyes were considered signs of chronicity.

**Results:** 295 affected eyes of 291 patients (75% male, mean age 43 years) were included. Mean Snellen visual acuity at diagnosis was 20/25. 153 eyes (52%) had a spontaneous resolution, while 142 eyes (48%) recovered after early treatment (mean: 1, range: 1–3 treatments) of their first episode. In 83 eyes (28%) one or more recurrence of SRF was reported (mean follow-up: 26 months). In a subgroup including 197 affected eyes (67%) with more than one year of follow-up (mean: 37 months, range: 12–247 months), 73 eyes (37%) experienced on average 1.4 CSC recurrences (range: 1–6 recurrences). On follow-up FA (30 months after baseline FA), 22 eyes (11%) showed an increase in cumulative RPE alterations over time, and RPE alterations were observed in 28 fellow eyes (14%) in this subgroup. Mean Snellen visual acuity in this subgroup, as well as the whole aCSC group was equal to 20/20 at final visit.

**Conclusion:** Based on clinical findings on multimodal imaging, most typical aCSC patients showed a spontaneous recovery of their first disease episode. In our study, one-third of aCSC patients showed a recurrent disease character, while only a small minority with documented long-term follow-up showed a more chronic process. The mean final visual outcome was good in the whole aCSC group.

### OCT-A in eyes with staphyloma induced serous maculopathy

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**Purpose:** To study eyes with posterior staphyloma and secondary subretinal fluid (SRF) through multi-modal imaging including OCT-angiography (OCT-A). To compare different OCT-A machines in these cases.

**Method:** Twelve eyes of patients with a posterior staphyloma and SRF were studied using OCT-A. Different OCT-A machines were compared: Canon OCT-A and Heidelberg OCT-A. A choroidal neovascularization was excluded in all cases.

**Results:** Both acquisition and segmentation of OCT-A images were difficult. In some cases OCT-A wasn't possible. Results on retinal vasculature, the choroid and flow were inconclusive and no comparison could be made between the individual cases and different OCT-A machines. "En face" imaging showed pachy vessels in the choroid at the border of SRF. These were also visible on structural OCT and on fundus color photographs.

**Conclusion:** The etiology of serous submacular fluid in patients with posterior staphylomas remains illusive. "En face" imaging was the most useful and showed pachy choroidal vessels at the border and top of the area of SRF. It is questionable if OCT-A is the most valuable imaging technique to prove these pachy vessels. OCT-A software is currently not helpful in these pathologic shaped eyes with secondary SRF.

### Benchmarking the treatment of nAMD patients in The Netherlands with the rest of the world, using the FRB! registry

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**Purpose:** To demonstrate the value of a quality registry for neovascular AMD (nAMD) treatment, by comparing the treatment of nAMD patients with anti-VEGF in the Netherlands to all other countries using the (Fight Retinal Blindness I) FRB! registry, an ICHOM based quality registration for nAMD, developed in Sydney Australia.

**Methods:** Treatment results of all eyes of patients with nAMD treated in the 13 centers in the NL's participating in the pilot study FRB! NL, all eyes being treatment naïve before entering the registry, and with at least 1 year of follow-up, were compared with results of identical cases treated in all other countries using FRB!

**Results:** In the NL's, until September 2017, 165 treatment naïve eyes with nAMD were registered with at least 1 year of follow-up, in the rest of the world this number was 2397. The change in VA from baseline in the NL's was 4.0 letters, in the rest of the world 3.0 letters. The mean number of injections was 9 (range 8 – 11) in the NL's, and 7 (3–9) in the rest of the world.

**Conclusion:** Besides being a useful tool to guide retreatment decisions in the course of the treatment of an individual patient with nAMD, the FRB! registry can be used to benchmark results of anti-VEGF treatment. Results of treatment with anti-VEGF for nAMD in the NL's is comparable to treatment results in all other countries, as could be demonstrated with the FRB! registry, despite the difference in choice of first-line drug used.

### Cataract surgery in eyes with a pre-existent posterior capsule rupture after intravitreal anti-VEGF injections

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**Purpose:** The introduction of anti-VEGFs as a treatment for macular edema in cases of age-related macular disease, diabetic macular edema and retinal vein occlusion, has resulted in a worldwide increase in the number of intravitreal injections (IVI). One of the complications that may occur during an IVI is lens injury, resulting in a posterior capsule rupture (PCR) and cataract. Pre-existing PCR challenges cataract surgeons during removal of the clouded lens, due to an increase in complications such as dropped nucleus and vitreous loss. The aim of this study is to evaluate management and outcomes of cataract surgery in eyes with pre-existing posterior capsule rupture (PCR) due to IVIs with anti-VEGFs.

**Methods:** We retrospectively reviewed all consecutive medical records of patients with a history of IVI that underwent cataract surgery from January 2016 until December 2017 at the University Eye Clinic Maastricht. In addition, the medical records of patients (including referred patients) with a pre-existing PCR and history of IVI that underwent cataract surgery were reviewed. In these eyes, intraoperative management of cataract was evaluated. Outcome measures included intraoperative and postoperative complications, corrected distance visual acuity (CDVA) and intraocular pressure (IOP). The level for significance was set at  $p = 0.05$ .

**Results:** Out of a total of 6589 cataract surgeries we identified 48 eyes (38 patients) that had a history of IVI (0.73%). Pre-existing PCR was present in one eye (2%) and in one eye PCR occurred during surgery (2%). Posterior subcapsular cataract was present in 10 cases (20.8%). In addition, pre- and postoperative data of 8 eyes (7 patients) with a pre-existing PCR and history of IVI were analyzed. Mean follow-up was 1.16 months (range: 0.03–3.65 months). During surgery, anterior vitrectomy was performed in 6 of these eyes (75%), of which a partial dropped nucleus occurred in one eye. Postoperatively, we found a mean CDVA of  $0.47 \pm 0.36$  logMAR after 4 weeks of follow-up, significantly better than the preoperative values of  $0.83 \pm 0.44$  logMAR ( $p = 0.04$ ). Mean IOP after 4 weeks was  $11.6 \pm 3$  mmHg, significantly lower compared to the preoperative values of  $17.4 \pm 3.1$  mmHg ( $p = 0.04$ ).

**Conclusion:** To our knowledge, this is the first study that analyses intraoperative and postoperative outcomes in a series of patients with pre-existing PCR due to IVIs that undergo cataract surgery. Cases of pre-existing PCR that undergo cataract surgery are a challenge to surgeons. Nonetheless, we found an acceptable rate of complications and a significant improvement of postoperative BCVA and IOP.