

## CLINICAL COMMUNICATION

## Retinal vasculitis following pars plana vitrectomy for retained lens material

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Retained lens fragments or dropped nucleus after cataract surgery are uncommon complications. Pars plana vitrectomy (PPV) is an effective treatment with late complications such as epimacular proliferation, retinal detachment and cystoid macular oedema.<sup>1,2</sup> Though retinal vasculitis has been reported as the early sign of post-operative endophthalmitis following uneventful cataract surgery and trauma from a penetrating foreign body, there is only one documented report of retinal vasculitis with lens-induced uveitis with pars plana vitrectomy for retained lens fragments.<sup>3–6</sup> We describe two consecutive cases of retinal vasculitis in patients who underwent PPV for retained lens fragments and dropped nucleus.

#### CASE 1

A 62-year-old male was referred to us for retained lens material following a complicated phacoemulsification procedure.

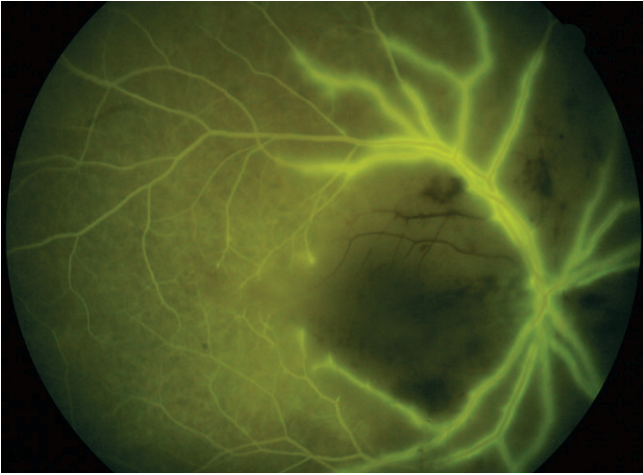
His visual acuity was 6/12 in the operated eye. Slitlamp biomicroscopy of the right eye revealed aphakia with a ruptured posterior capsule. The patient underwent a combined pars plana vitrectomy and sulcus fixated posterior chamber acrylic intraocular lens implantation surgery. The eye was filled with fluid at the end of the surgery. At the one-day post-operative visit, the patient's vision was hand motions in the operated eye. There was mild limbal injection, a clear cornea and no cells in the anterior chamber or vitreous. Intraocular pressure was in normal limits. Fundoscopy and fluorescein angiography revealed retinal vasculitis with macular oedema (Figure 1). No abnormal results were obtained from laboratory tests including complete blood count, sedimentation rate, venereal disease assessment, purified protein derivative, anti-Borellia antibody, chest X-ray, angiotensin converting enzyme and patergy. Cardiovascular and neurological examination revealed no pathology. As the pathology was mainly in the retinal vasculature without any activity in the vitreous and anterior chamber, we did not take samples for culture. The patient received intravenous methylprednisolone (1 g/day) for three days. This was followed with the maintenance dose of oral prednisolone (30 mg/day). His visual acuity improved to only counting fingers at two metres after three weeks.

#### CASE 2

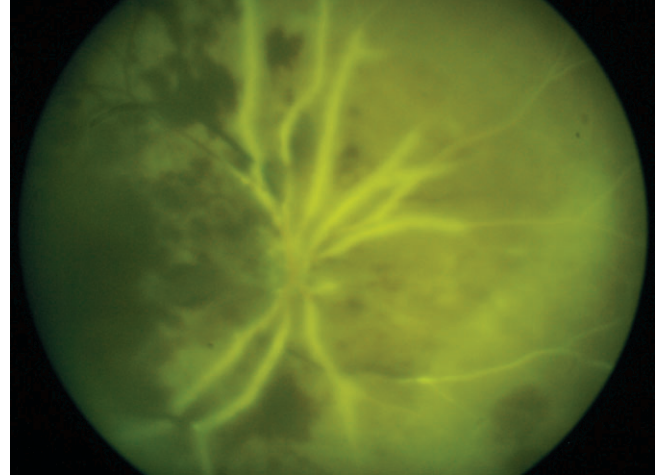
The 56-year-old male patient was referred to us for a dropped nucleus during a complicated phacoemulsification procedure. His visual acuity was 6/18 in the operated eye. Anterior segment examination showed aphakia with ruptured posterior capsule. The patient underwent a pars plana vitrectomy. The eye was filled with fluid at the end of the surgery. After one day, there was moderate limbal injection with a clear cornea. There were no signs of inflammation in the anterior chamber or vitreous. There was no ocular pain. Fundus examination revealed retinal haemorrhages and macular oedema, which were confirmed by fluorescein angiography to be retinal vasculitis (Figure 2). Laboratory tests, as in the first case, ruled out an associated disorder. The patient was given intravenous methylprednisolone (1 g/day) for three days, which was followed with the maintenance dose of oral prednisolone (30 mg/day). There was no significant improvement in the visual acuity during the course of treatment.

#### DISCUSSION

Retinal vasculitis may occur as an isolated ocular condition, as a manifestation of infectious or neoplastic disorders or in association with a systemic inflammatory disease.<sup>7</sup> Several cases of infectious or systemic disease-related retinal vasculitis



**Figure 1.** Significant posterior retinal vasculitis and ischaemia



**Figure 2.** Posterior retinal vasculitis with retinal haemorrhages

have been documented. Retinal vasculitis is also one of the early signs of post-operative endophthalmitis. To the best of our knowledge, these are the first cases of retinal vasculitis possibly associated with retained lens fragments and dropped nucleus following pars plana vitrectomy presenting in the early post-operative period.

Previous reports concerning retinal vasculitis all had moderate to severe anterior and posterior segment involvement at the initial presentation, which could orient the practitioner towards a possible infectious endophthalmitis.<sup>3-5</sup> As there was no ocular pain, no anterior chamber or vitreous inflammation, we diagnosed these cases as retinal vasculitis. We then searched for the common cause of retinal vasculitis in these two patients. No underlying local or systemic disease was detected during the course of the disease. Even in the following weeks, the clinical presentations did not develop into an intraocular inflammation.

A unique case of retinal vasculitis with retained lens fragments was reported by Besen and Freeman.<sup>6</sup> The authors detected the retinal arteritis and phlebitis adjacent to the lens material during the pars plana vitrectomy, which resolved after removal of the material. Our cases showed some differences from the reported case of retinal vasculitis, in that neither had

lens-induced uveitis pre-operatively and retinal vasculitis occurred in the early post-operative period without any intraocular inflammation, rather than intraoperatively. Similarities between our two cases included previous cataract, pars plana vitrectomy, no systemic associations and involvement of the retinal vessels of the posterior pole.

In our patients the retinal vasculitis may be associated with lenticular remnants in the vitreous chamber, causing a focal inflammatory effect on retinal vessels and triggering vasculitis.<sup>6</sup> Post-operative endophthalmitis is another possible explanation for the formation of retinal vasculitis in these eyes but the clinical presentation misled us and we did not perform a vitreous tap and intravitreal antibiotic injection. The unresponsiveness of the ordered treatment seems to point to a possible infectious aetiology. These are the first cases of retinal vasculitis following pars plana vitrectomy for retained lens fragments and dropped nucleus, and more reports of this association are required for a better understanding of its pathogenesis, treatment and prognosis.

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