Vitreous Band Formation and the Sustained-Release, Intravitreal Fluocinolone (Retisert) Implant

The fluocinolone acetonide implant (Retisert; Bausch & Lomb, Rochester, NY) is a sustained-release, intravitreal steroid implant developed to treat chronic noninfectious uveitis. Two, 3-year, phase 3, randomized, multicenter clinical trials have demonstrated a statistically significant decrease in the recurrence of uveitis and the need for additional corticosteroids or other immunosuppressive agents after implantation.

During these studies, 50% to 90% of patients experienced an adverse event after implantation, most commonly cataract formation and increased intraocular pressure. Within 2 years of implantation, nearly 100% of phakic eyes required cataract surgery and one third of patients required a glaucoma surgical procedure. Other adverse events included ptosis, eyelid edema, conjunctival hemorrhage, chemosis, corneal edema, vitreous opacities, vitreous hemorrhage, macular edema, retinal hemorrhage, hypopyon, and choroidal detachment.

We describe 4 patients with an adverse ocular event not previously described after Retisert implantation: the formation of vitreous bands from the posterior pole to the implant.

Methods. A retrospective medical chart review of patients who received a Retisert implant at the Cole Eye Institute, Cleveland, Ohio, was conducted. Inclusion criteria included patients with clinically visible vitreous bands extending from the posterior pole to the Retisert implant. We defined vitreous bands as bandlike or sheetlike opacities in the vitreous that appear denser than typical inflammatory vitreous condensations and extend from the posterior pole to the implant. Data collected from the medical chart included surgical techniques and complications, uveitis control, best-corrected Snellen visual acuity (BCVA) before and after implant insertion and after documentation of vitreous bands, and the need for additional surgical procedures.

Results. Of the 33 patients who received the Retisert implant, 4 (12%) developed vitreous bands that were visible on clinical examination. Case 1. A 46-year-old white woman received an implant in her left eye for idiopathic uveitis. Prior therapies included posterior sub-Tenon triamcinolone injections and oral cyclosporine. Repositioning of the implant was required 1 month after implantation for slight extrusion of the suture tab. The BCVA improved from 20/40 to 20/25 OS and intraocular inflammation was controlled without the need for local or systemic immunosuppressive medication. A trabeculectomy and cataract extraction were performed after 3 and 8 months, respectively, with visual improvement in her visual acuity to 20/50 OS. Two years after implantation, the patient experienced recurrences of inflammation and was treated with local corticosteroids. Three and a half years following initial implantation, thick vitreous bands were noted from the posterior pole to the implant (Figure 1) causing decreased visual acuity to 20/200. A pars plana vitrectomy and membrane peel were performed and the depleted implant was replaced. A posterior vitreous detachment was noted to be present at the time of surgery. The postoperative vision improved to a visual acuity of 20/70 with a decrease in inflammation.

Case 2. A 55-year-old white woman received an implant in her left eye for idiopathic uveitis. Prior systemic medications included prednisone, cyclophosphamide, and mycophenolate mofetil. After implant, BCVA improved from 20/40 to 20/25 OS and intraocular inflammation was controlled without systemic immunosuppression. Three years later, the implant was exchanged owing to increasing inflammation. The patient developed steroid-induced ocular hypertension requiring an Ahmed glaucoma surgical procedure.

Figure 1. Vitreous bands are seen in the anterior vitreous converging to the inferotemporal fluocinolone acetonide implant (Retisert implant; Bausch & Lomb, Rochester, NY) (not seen).
tube implant; BCVA was stable at 20/50. One year after reimplantation, a thick epiretinal membrane (ERM) was noted with vitreous bands extending to the implant, decreasing visual acuity to 20/200 OS. The patient underwent pars plana vitrectomy and membrane peel. A posterior vitreous detachment was created at the time of surgery. Six months later, vision improved to a visual acuity of 20/50 and inflammation was controlled.

Case 3. A 57-year-old white woman received an implant in her left eye for idiopathic uveitis. Prior therapies included posterior sub-Tenon injections and oral prednisone. Repositioning of the implant was required 1 month after implantation for slight extrusion of the suture tab. The patient’s inflammation was controlled without oral and topical prednisone with BCVA improving from 20/40 to 20/30 OS. Four and a half years after implantation, vitreous bands were noted extending from the posterior pole to the implant (Figure 2A), decreasing visual acuity to 20/50. Optical coherence tomography revealed vitreomacular traction (Figure 2B).

Case 4. A 49-year-old white man received an implant in his left eye for idiopathic uveitis. Prior therapy included posterior sub-Tenon injections, intravitreal triamcinolone injections, and systemic methotrexate. The implant procedure was complicated by a dense vitreous hemorrhage and a small choroidal hemorrhage at the insertion site. After resolution of the hemorrhage, BCVA was slightly worse (20/40) than the patient’s baseline (20/25). The patient’s inflammation was well controlled after implantation. Six months after implantation, a vitreous band was noted from the posterior pole to the implant (Figure 3) with no decrease in vision.

Comment. Vitreous band formation (sheetlike opacities in the vitreous appearing denser than typical inflammatory vitreous condensations) extending from the posterior pole to the Retisert implant is a complication that, to our knowledge, is not yet described in the literature. This complication was not noted in the 227 patients included in the original Retisert studies; however, these patients were followed for only 3 years and most of the patients in our study developed vitreous bands more than 3 years after implant placement. Vitreous bands were associated with a decrease in vision in 3 patients secondary to vitreous opacities and vitreomacular traction. In the 2 patients who underwent surgery to release this traction, an improvement in BCVA was seen.

Ocular inflammation and vitreous hemorrhage are known risk factors for ERM formation. While our patients with uveitis may have developed an ERM irrespective of implant placement, the appearance and directionality of the bands described is different from a typical ERM that extends tangentially across the posterior pole. Vitreous bands associated with the Retisert implant are more prominent and stretch in an axial direction, from the posterior pole to the implant. The etiology of vitreous bands is likely multifactorial. In the first 3 patients, depletion of ste...
roid in the implant led to recurrence of inflammation, and the presence of a foreign body may have incited the formation of vitreous bands to the implant. A perioperative vitreous hemorrhage was most likely the main contributor to band formation in patient 4. Because the explanted material was not sent for pathologic examination, we do not have information on the histological characteristics of the vitreous bands.

In conclusion, Retisert implant placement may lead to the formation of vitreous bands. When vitreous bands cause visually significant traction, patients may benefit from vitreoretinal surgery. Addition, the surgical procedure for implant removal or exchange in patients with clinically visible vitreous bands should be modified to include a complete vitrectomy in order to avoid retinal traction at the time of implant removal.

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Non–AIDS-Related Kaposi Sarcoma Involving the Tarsal Conjunctiva and Eyelid Margin

Kaposi sarcoma (KS) is a low-grade, multicentric vascular neoplasm that has been described in 4 clinical forms: classic, African, immunocompromised, and epidemic (AIDS-related) KS. Though ocular involvement by KS is rare, it is typically observed in the epidemic form and is most commonly seen as conjunctival or eyelid lesions in the setting of multicentric disease. We describe a patient with ocular KS without any of the risk factors previously described for the 4 clinical subtypes of KS.

Report of a Case. A 62-year-old Hispanic man was seen at the Long Beach Veterans Affairs Medical Center in California with a 12 × 10-mm hemorrhagic, telangiectatic, papil- lomatous lesion on his upper eyelid margin and tarsal conjunctiva, as well as an adjacent 3 × 4-mm broadband lesion on the upper eyelid margin (Figure 1). The patient reported that the larger mass grew from a pinpoint, red lesion on his upper eyelid to its current size over the course of 1 month. He stated that the lesion occasionally bled and was irritating to the eye. His medical history was significant for hypertension and his ocular history included chronic open-angle glaucoma. Social history revealed occasional alcohol use and a remote history of smoking in his teenaged years. Based on the clinical appearance, a presumptive diagnosis of pyogenic granuloma was made, and the lesion was injected with intralesional steroids (0.1 mL of triamcinolone acetonide [Kenalog] 40 mg/mL). On follow-up examination 3 weeks later, the pedunculated mass had grown to 15 × 13 mm, and an excisional biopsy was performed. The satellite lesion was not excised. The pathologic findings from the biopsy revealed KS with areas of inflammatory cellular infiltrate (Figure 2), and immunohistochemical stains revealed the presence of human herpesvirus 8 (HHV-8) (Figure 3).

The patient was subsequently treated with cryotherapy to the base of both lesions at the eyelid margin and tarsal conjunctiva. Following treatment, the satellite lesion re-