Retinal vasculitis and intraocular inflammation after intravitreal injection of brolucizumab

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Purpose:
Purpose: To report a series of 15 eyes that developed retinal vasculitis and intraocular inflammation (IOI) after intravitreal injection (IVI) with brolucizumab 6mg/0.05ml for treatment of neovascular AMD within the first three months of commercial launch.

Methods:
Methods: Retrospective analysis of demographics, symptoms, baseline and follow-up visual acuity (VA), prior anti-vascular endothelial growth factor (VEGF) injections, treatment and multimodal imaging.

Results:
Results: Fifteen eyes from 12 patients with retinal vasculitis and IOI after brolucizumab IVI were identified from multiple centers in the United States. The number of previous anti-VEGF IVIs ranged between 2 to 80 in the affected eye prior to brolucizumab switch. Diagnosis of retinal vasculitis and IOI occurred a mean of 30 days following brolucizumab IVI. Mean visual acuity prior to brolucizumab IVI was logMAR 0.426 (Snellen equivalent 20/53) and at diagnosis of retinal vasculitis was logMAR 0.981 (Snellen equivalent 20/191, range 20/25 to 20/1600) (P= 0.008). All affected eyes showed intraocular inflammation with variable combinations of focal or elongated segmental sheathing and discontinuity of small and large retinal arteries, sclerotic arteries, regions of vascular non-perfusion, cotton-wool spots, Kyrieleis plaques, irregular venous caliber with dilated and sclerotic segments, perivenular hemorrhages and foci of phlebitis. Fluorescein angiography revealed delayed retinal arterial filling, retinal vascular non-perfusion and variable dye leakage from affected vessels and the nerve. Systemic evaluation for embolic causes or uveitis was unrevealing in 5 patients. Treatment consisted of various combinations of corticosteroids (systemic, intravitreal, subtenon, topical) and two eyes had vitrectomy (n=2) without improvement in vision. After mean follow-up of 25 days, mean visual acuity was logMAR 0.833 (Snellen equivalent 20/136), which was worse than baseline (P=.033).

Conclusions:
Conclusions: Retinal vasculitis and IOI after brolucizumab IVI is characterized by variable occlusion of large and/or small retinal arteries and perivenular abnormalities. It may span from peripheral vasculitis to occlusion of large retinal arteries around the optic nerve or macula with severe vision loss. A high index of suspicion is required as vitreous cells may obscure visualization of vasculitis. Peripheral fluorescein angiography may aid in diagnosis.