Prepapillary vascular loop – A rare cause of vitreous hemorrhage

Sonya Ish, Deepa Sharma, Ashok Pathak, Rahul Verma, Himanshu Garkoti, Sudha Kumari

Key words: Pars plana vitrectomy, prepapillary loop, vitreous hemorrhage

A 55-year-old male presented with sudden, painless diminution of vision in his left eye since 15 days. The best-corrected visual acuity was finger counting close to face with brown nuclear cataract. The Ultrasound B scan was suggestive of vitreous hemorrhage (VH) with posterior vitreous detachment. While performing combined phacoemulsification with 25-gauge pars-plana vitrectomy, inadvertently, there was a massive bleed from the stump at disc which could not be controlled with cautery or fluid/air exchange. After 1 week, a vitreous lavage was done. Fundus showed a double-helical vascular...
Figure 1: Double-helical vascular loop with arterial configuration arising from the optic nerve head

Figure 2: Magnified red-free fundus photo showing prepapillary loop

Figure 3: FFA of left eye showing delayed filling of inferior hemiretinal vessels

Figure 4: FFA of left eye showing filling of vascular loop and inferior hemiretinal vessels in the late phase with no ischemic area

Figure 5: OCT from the prepapillary area showing elevated lesion with a central lumen and ERM in the temporal area

The incidence of prepapillary loop is approximately 0.01%.[1] They occur when evolving retinal vessels grow into a vitreous cavity within the Cloquet’s canal instead of coursing into the retina. The vessel twists and turns and may acquire a loop-like structure with a glial veil.[2] They are usually unilateral, congenital, and benign in nature.[3] The visual complaints are branch retinal artery occlusion, hyphema, vitreous hemorrhage, and amaurosis fugax.[4] FFA studies have demonstrated that arterial prepapillary loops are more common than venous.[5]

Prepapillary loops must be kept in mind while dealing with massive and uncontrolled vitreous hemorrhage, like our case, which required a two-time surgical intervention.

Discussion

The occurrence of prepapillary loop is approximately 0.01%. They occur when evolving retinal vessels grow into a vitreous cavity within the Cloquet’s canal instead of coursing into the retina. The vessel twists and turns and may acquire a loop-like structure with a glial veil. They are usually unilateral, congenital, and benign in nature. The visual complaints are branch retinal artery occlusion, hyphema, vitreous hemorrhage, and amaurosis fugax. FFA studies have demonstrated that arterial prepapillary loops are more common than venous.

Prepapillary loops must be kept in mind while dealing with massive and uncontrolled vitreous hemorrhage, like our case, which required a two-time surgical intervention.
Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. Wygnanski-Jaffe T, Desatnik H, Treister G, Moisseiev J. Acquired prepapillary vascular loops. Arch Ophthalmol 1997;115:1329-30.
2. Degenhart W, Brown GC, Augsburger JJ, Magargal L. Prepapillary vascular loops. Ophthalmology 1981;88:1126-31.
3. Hsieh YT, Yang CM. The clinical study of congenital looped/coiled peripapillary retinal vessels. Eye (Lond) 2005;19:906-9.
4. Singh R, Fujinami K, Moore AT. Branch retinal artery occlusion secondary to prepapillary arterial loop. Retin Cases Brief Rep 2014;8:124-6.
5. Teramoto S, Ohno-Matsui K, Tokoro T, Ohno S. Bilateral large peripapillary venous and arterial loops. Jpn J Ophthalmol 1999;43:422-5.