

Management of retinal detachment in block related globe perforation with pneumatic retinopexy

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Retinal detachment after ocular perforation related to local anesthesia is a common complication, which is usually associated with a poor prognosis despite complex vitreoretinal surgical procedures. We report a case of 62-year-old male with cataract surgery done 4 weeks back with nasal retinal detachment with a posterior break. Pneumatic retinopexy was performed and

laser barrage of the breaks was done the next day when the retina got attached. A vision of 20/30 was achieved at the end of 2 months. To the best of our knowledge, this is a first case report in literature where pneumatic retinopexy was used to manage a retinal detachment caused by block-related perforation.

Key words: Block-related perforation, pneumatic retinopexy, retinal detachment

Globe perforation during peri-bulbar block is a complication, rarely reported these days in the era of topical surgeries. Certain predisposing lesions for globe perforation are high axial length,^[1] posterior staphyloma,^[1,2] previous extra-ocular surgeries, deep set eyes, uncooperative patients, and anesthesia given by non-ophthalmologists.^[3] The rate of retinal detachment after ocular perforation related to local anesthesia has been reported from 42- 56%^[3,4] in literature, which usually have a poor prognosis despite complex vitreo-retinal procedures. We are here reporting a case of peribulbar block-related retinal detachment where pneumatic retinopexy was used for management. This case emphasizes the importance of an early diagnosis and referral to a retina specialist in globe perforation caused by peribulbar block.

Case Report

A 62-year-old male presented to our out-patient department with history of cataract surgery in the left eye 4 week back, followed by no improvement in vision and onset of floaters after surgery. Now, he was complaining of temporal field defect in the involved eye. On examination, patient had retinal detachment involving nasal retina with 2 irregular tears along

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superonasal arcade. Best corrected vision at presentation was 20/30. Resolving vitreous hemorrhage was present in the inferior vitreous. There was no vitreous traction upon any of the breaks. Posterior vitreous detachment (PVD) was complete as demonstrated by B-scan ultrasonography. As the break was posterior and the macula was attached, 2-stage pneumatic retinopexy was planned.

After achieving hypotony with 350 ml of intravenous mannitol 20% over 45 minutes, the patient was taken up to the operating room. After cleaning the eye locally with povidone-iodine 10% solution, a sterile surgical drape was applied. Anterior chamber paracentesis was done with 26G needle. 0.3 ml of pure C_3F_8 was injected intravitreally through pars plana route 3.5 mm from limbus inferotemporally. Retinal artery pulsations were checked, and the eye was patched. The patient was advised prone position. After 24 hours of tamponade, retina was reattached. Laser barrage of the breaks was done using Laser Indirect Ophthalmoscope, [Fig. 1b], and prone position was advised for 3 more days. Intra-ocular pressure was monitored every 6 hourly for the first 3 days.

At 4 weeks [Fig. 1c] and 8 week [Fig. 1d] follow-up, the retina remained attached. Inferior vitreous hemorrhage resolved and vision remained stable at 20/30.

Discussion

In literature, retinal detachment associated with globe perforation has been associated with a very poor visual outcome. Puri *et al.*^[5] in their article concluded that cases with double perforations, with posterior breaks, or those associated with retinal detachment with PVR require complex surgical procedures and thus have poor visual prognosis. Wearne MJ^[4] in their retrospective review of 20 patients with block-related perforation concluded that eyes with retinal detachment generally had a poor visual outcome despite vitrectomy with long-acting gas or with silicone oil tamponade. In a series of 7 myopic cases with

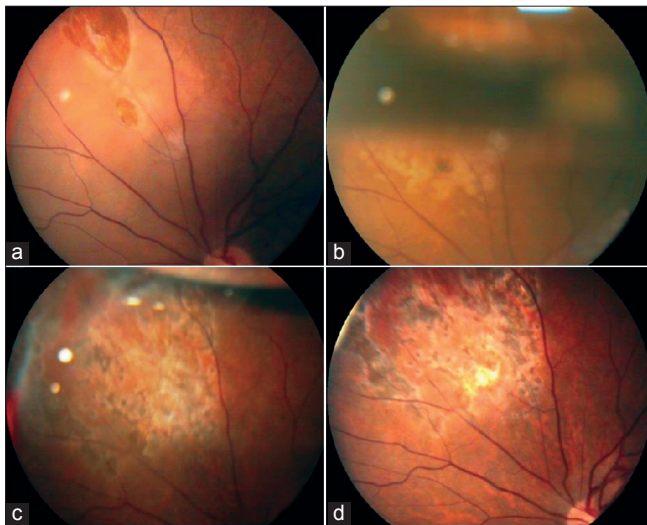


Figure 1: (a) Diagram showing superonasal quadrant of the left eye with 2 nasal breaks with nasal retinal detachment (b) 2 days after C3F8 injection and laser (c) 4 weeks later (d) 2 months later

globe perforation published by Modarres M *et al.*,^[6] the best vision achieved was 20/400. Gadkari S^[7] *et al.* reported 19 cases of globe perforation, out of which 8 patients had retinal detachment, all of them were managed with vitrectomy with an internal tamponade. Post-operative vision was less than 20/100 in about 50% of patients. We used 2-stage pneumatic retinopexy to repair retinal detachment with a posterior break with double perforation. Scleral buckling and cryotherapy application is difficult in such a case due to location of the break nasally and posterior to the equator. To the best of our knowledge, the use of pneumatic retinopexy has never been reported in literature for the management of peribulbar block-related scleral perforation with retinal detachment. Above case demonstrates the importance of using carefully-selected method of retinal detachment repair to help in early visual rehabilitation, better visual outcome, less patient discomfort, lesser cost, and fewer post-operative visit.

A prompt referral of the patient after globe perforation to a retina specialist is a must to achieve good visual prognosis. The aim is to treat the break before retinal detachment occurs or if detachment has already occurred, then to treat it before proliferative vitreo-retinopathy develops. PVR is likely to occur as early as 2 weeks of an injury in up to 80% of the eyes,^[8] which may necessitate vitreo-retinal surgery with encircling band. These eyes with PVR usually have poor structural and functional outcome^[3-6,9,10] and are difficult to manage.

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