Commentary: The challenges of managing suprachoroidal hemorrhage

Suprachoroidal hemorrhage (SCH) is a rare but one of the most feared complications of all intraocular surgeries. SCH has been associated more commonly with glaucoma, vitreoretinal, and penetrating keratoplasty procedures and less with modern techniques of cataract surgery. The risk factors include intraoperative hypotony, chronic glaucoma, high myopia, aphakia, old age (arteriosclerosis), and systemic hypertension. Patients on anticoagulation therapy can present with spontaneous SCH. The spectrum ranges from localized, self-limiting SCH to expulsion of intraocular contents.[1]

Limited SCH usually resolves spontaneously over 6–8 weeks. Continuous monitoring of intraocular pressure (IOP) and appropriate management is critical in these eyes. 30% of eyes with massive SCH, if left untreated, had a final vision of no light perception.[2]

Early recognition during surgery and proactive restriction of further hypotony by closing wounds and raising IOP limit progression of the hemorrhage.[3]

The most important factors for the decision of surgical intervention are the presence of appositional choroidal detachments, uncontrolled IOP with or without angle closure.

The optimal timing for the drainage of SCH is controversial. Though the window of 7 to 15 days is accepted by most surgeons, planning this after ultrasonographic confirmation of liquefaction of SCH helps in more complete drainage.[4,5] Ultrasonography also helps to determine the location and extent of the hemorrhage and to differentiate between serous and hemorrhagic choroidal detachment.

The goals of surgery are to drain adequate amount of blood from suprachoroidal space to prevent or relieve appositional choroidal detachment, to normalize IOP, and to relieve pressure on lens-iris diaphragm to prevent its forward movement and anterior chamber angle closure. There is no need for complete drainage of SCH. Unless an underlying pathology demands it, (i.e., breakthrough vitreous hemorrhage or retinal incarceration) concurrent vitrectomy is not needed.

Different methods have been described for surgical drainage of SCH. Placement of infusion cannula, either in the anterior chamber or through the pars plana, helps in better intraoperative IOP control and satisfactory SCH drainage. The extent of the choroidal detachment and the ability to visualize posterior segment details decides the location for the infusion cannula.

SCH can be drained by direct scleral cut down after limited conjunctival peritomy or using trocar cannula system.

One or more radial sclerotomies are made 8 to 9 mm posterior to the limbus in a quadrant/s with highest choroidal elevation. The detached choroid helps prevent an accidental full-thickness penetration. Typically dark red blood gushes out after full-thickness scleral incision. Gentle pressure can be maintained on the sclera to achieve maximum possible drainage. The sclerotomies can either be sutured or left open.
Alternatively, 23 or 25 gauge cannulas can be used for SCH drainage. The cannulas can be used transconjunctivally or after peritomy and are angled at 15°–20° to place the tip in the suprachoroidal space and to ensure that the trocar blade does not go full thickness.

In the current issue of this journal, the authors have reported perfluorocarbon liquid (PFCL) assisted trans-conjunctival 23-25G cannula-guided drainage of postoperative SCH drainage in 15 eyes. The advantages are sutureless sclerotomies, minimal scarring, and possible placement of multiple cannulas in different quadrants hence more complete drainage. However, the drainage process can be extremely slow and clotted blood can block the cannulas hampering complete evacuation of the blood.

To achieve more complete drainage, various other procedures tried are injection of recombinant tissue plasminogen activator (r-TPA) in suprachoroidal space, and an expanding gas bubble or viscoelastic injection in vitreous cavity. PFCL can be used to drain SCH as a one or two-step procedure.

To summarize, managing SCH is a challenge. Overall the outcome is poor with expulsive SCH but a satisfying outcome is possible in eyes with non-expulsive hemorrhage, if managed in a timely fashion. The surgical approach in a given case depends on the presentation. Early recognition and immediate wound closure is an important step in aiding successful management. Identifying at-risk patients and taking anticipatory precautions can help to minimize the risk of SCH.

Pramod S Bhende, Shruti Suresh
Shri bhagwan mahavir vitreoretina services, medical research foundation, Sankara Nethralaya, Chennai, Tamil Nadu, India
Correspondence to: Dr. Pramod S Bhende, Shri bhagwan mahavir vitreoretina services, medical research foundation, Sankara Nethralaya, no 18, College road, nungambakkam, Chennai - 600 006, Tamil Nadu, India. E-mail: drpb@snmail.org

References
1. Foo R, Tsai A, Lim L. Management of suprachoroidal hemorrhage. American Academy of Ophthalmology website. https://www.aao.org/eyenett/article/management-of-suprachoroidalhemorrhage. Updated 2018.
2. Wang LC, Yang CM, Yang CH, Huang JS, Ho TC, Lin CP, et al. Clinical characteristics and visual outcome of non-traumatic suprachoroidal haemorrhage in Taiwan. Acta Ophthalmol 2008;86:908-912.
3. Chu TG, Green RL. Suprachoroidal hemorrhage. Surv Ophthalmol 1999;43:471-86.
4. Ling S, Cole M, James C, Kamalarajah S, Foot B, Shaw S. Suprachoroidal haemorrhage complicating cataract surgery in the UK. Epidemiology, clinical features, management, and outcomes. Br J Ophthalmol 2004;88:478-80.
5. Lakhanpal V. Experimental and clinical observations on massive suprachoroidal hemorrhage. Trans Am Ophthalmol Soc 1993;9:545-52.
6. Rezende FA, Kickinger MC, Li G, Prado RF, Regis LG. Transconjunctival drainage of serous and hemorrhagic choroidal detachment. Retina 2012;32:242-9.
7. Rizzo S, Tartaro R, Faraldi F, Franco F, Finocchio L, Barca F, et al. Two-stage surgery to manage massive suprachoroidal hemorrhage. Retina 2019;39(Suppl 1):1515-9.
8. Boral SK, Agarwal D. Modified posterior drainage of post-operative suprachoroidal hemorrhage. Indian J Ophthalmol 2021;69:3584-90.
9. Kunjukunju N, Gonzales CR, Rodden WS. Recombinant tissue plasminogen activator in the treatment of suprachoroidal hemorrhage. Clin Ophthalmol 2011;5:155-7.
10. Nadarajah S, Kon C, Rassam S. Early controlled drainage of massive suprachoroidal hemorrhage with the aid of an expanding gas bubble and risk factors. Retina 2012;32:543-8.
11. Kurup SK, McLintic JI, Allen JC, Baartman BJ, Altaweel MM, Garg SJ, et al. Viscoelastic assisted drainage of suprachoroidal hemorrhage associated with seton device in glaucoma filtering surgery. Retina 2017;37:396-9.
12. Desai UR, Peyman GA, Chen CJ, Nelson Jr NC, Alturki WA, Blinder KJ, et al. Use of perfluoroproxyphane in the management of suprachoroidal hemorrhages. Ophthalmology 1992;99:1542-7.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online

Quick Response Code:  
Website:  
DOI: 10.4103/ijo.IJO_1953_21

Cite this article as: Bhende PS, Suresh S. Commentary: The challenges of managing suprachoroidal hemorrhage. Indian J Ophthalmol 2021;69:3590-1.