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Spontaneous Suprachoroidal Haemorrhage In High Myopia Secondary To Malignant Hypertension

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Abstract:
Suprachoroidal haemorrhage usually occurs secondary to intraocular surgery or ocular trauma. Spontaneous suprachoroidal haemorrhage (SSCH) is an uncommon event and has been described in isolated case reports, typically associated with predisposing systemic and ocular risk factors. We report a case of a 62-year-old male who was hospitalised and receiving treatment for very high blood pressure when he developed sudden-onset pain and swelling in the right eye. On examination, the patient had acutely raised intraocular pressure (IOP) with hyphema in the right eye. B-scan ultrasonography showed haemorrhagic choroidal detachment with retinal detachment, vitreous haemorrhage, and posterior staphyloma. After control of the IOP and inflammation with medical management, inferior subluxation of the cataractous lens was noted. However, the haemorrhagic choroidal detachment remained unchanged. Therefore, lens extraction with drainage sclerostomy was performed. Postoperatively, the choroidal and retinal detachments had resolved; however, vision improved to hand movements onl

Keywords: *spontaneous suprachoroidal haemorrhage, high myopia, malignant hypertension*

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I. Introduction

Suprachoroidal haemorrhage usually occurs secondary to ocular surgery or trauma. Spontaneous suprachoroidal haemorrhage (SSCH) is an uncommon event and is typically associated with predisposing systemic and ocular risk factors. Fragile choroidal blood vessels due to old age, arteriosclerosis, hypertension, diabetes, high myopia, and choroidal neovascular membranes (CNVM) can contribute to SSCH. Mechanical forces resulting from Valsalva manoeuvre or uncontrolled hypertension can rupture these fragile vessels, causing SSCH. [1, 2] Additionally, blood dyscrasias and the use of anticoagulants or antiplatelets can precipitate minor bleeding to massive haemorrhages. [3]

Retinal detachment (RD) in a highly myopic eye may cause a dramatic decrease in IOP, which may be associated with SCH. [4,5] In eyes with longer axial lengths, SCH may also occur secondary to vortex vein varices. [5]

Uveal melanoma may present with spontaneous SCH. The posterior ciliary arteries can rupture due to tumour necrosis, leading to massive intraocular haemorrhage, and in cases of SSCH without significant risk factors, this possibility should be considered. [5]

II. Case Report

A 62-year-old male, not known to be hypertensive or diabetic, developed sudden-onset severe headache. On examination, his blood pressure was 210/120 mmHg and random blood sugar was 267 mg/dL. He was admitted and treated accordingly. One day later, he developed sudden-onset pain, redness, and swelling in his right eye when he presented to us.

On examination, his blood pressure was 150/90 mmHg. Vision in his right eye (RE) was limited to light perception only, and the best-corrected visual acuity (BCVA) in his left eye (LE) was 6/18. Intraocular pressure (IOP) in the RE was 59 mmHg and in the LE was 17 mmHg. The RE showed mild ptosis with proptosis, diffuse subconjunctival haemorrhage, corneal oedema, and hyphema involving one-third of the anterior chamber. The fundus could not be visualised due to hazy media. Examination of the anterior and posterior segments of the LE was normal except for a senile immature cataract. B-scan of the RE showed posterior elongation of the globe with vitreous haemorrhage, retinal detachment, and haemorrhagic choroidal detachment (Figure 1). Axial length measured using the IOL Master was 30.56 mm in the RE and 23.97 mm in the LE. The patient gave a history of reduced vision noted in his RE since childhood. Patient was diagnosed as RE spontaneous suprachoroidal haemorrhage with secondary angle closure glaucoma. High myopia and malignant hypertension being the probable predisposing risk factors.

The patient was treated with topical steroids and cycloplegics, low-dose oral steroids, and oral acetazolamide. On review one week later, the IOP in the RE had reduced to 7 mmHg, and the corneal oedema

and hyphaema had resolved, revealing an inferiorly subluxated cataractous lens. However, vision and B-scan findings remained unchanged. Hence, lens extraction with drainage sclerostomy for the suprachoroidal haemorrhage in the RE was advised (Figure 2). Post-surgery, the retinal and choroidal detachments had resolved with mild persistent vitreous haemorrhage, revealing extensive myopic degeneration with posterior staphyloma (Figure 1 and 3). Vision improved to hand movements only.

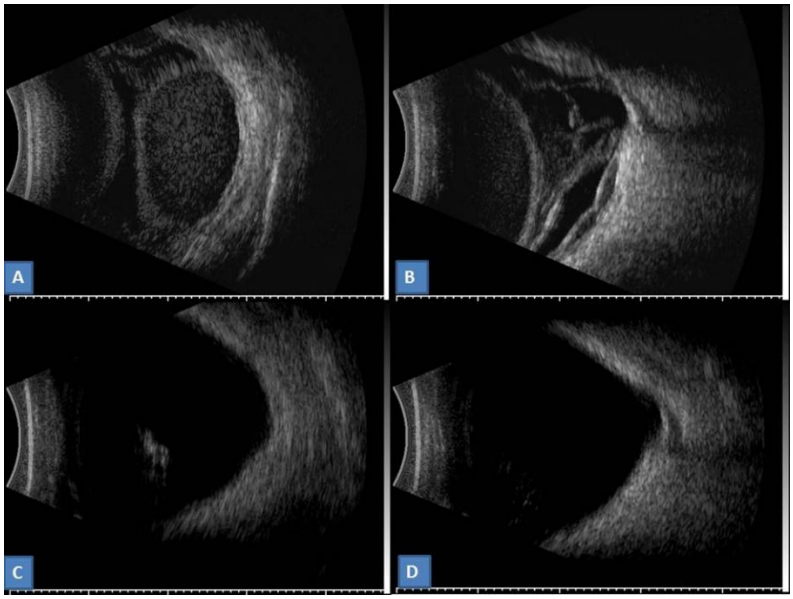

Figure 1: Image A and B are the preoperative B scan ultrasonography images of the right eye. *Image A:* showing the hemorrhagic choroidal detachment *Image B:* showing the haemorrhagic choroidal detachment with associated retinal detachment, vitreous hemorrhage and posterior staphyloma. **Image C and D** are post-operative scans showing the posterior staphyloma with mild residual vitreous hemorrhage. The choroidal and retinal detachments had resolved.

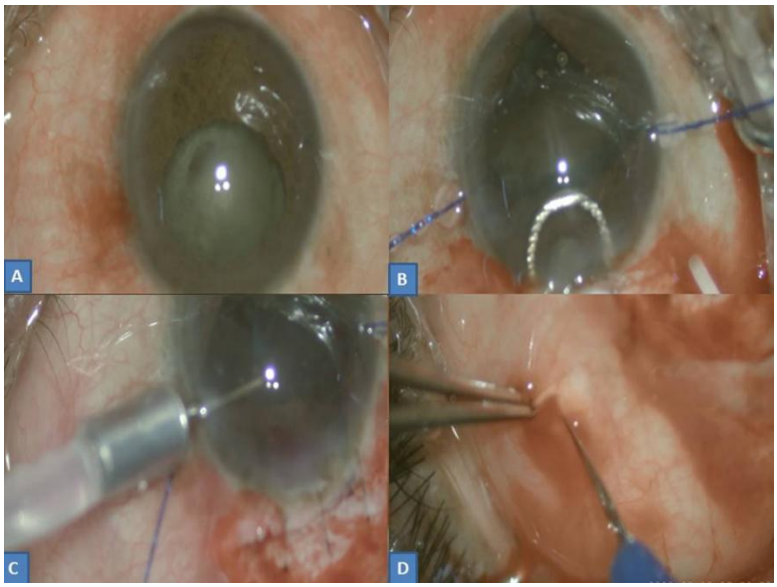

Figure 2: Image A: Preoperative image of the right eye showing a subluxated, hard cataractous lens. **Image B:** Intraoperative image showing pupil expansion using iris hooks and extraction of the subluxated lens through a sclerocorneal tunnel. **Image C:** Anterior chamber maintainer is inserted **Image D:** Drainage of lysed suprachoroidal blood clot through a posterior sclerostomy.

III. Discussion

Evaluation and control of systemic risk factors are essential in cases of spontaneous suprachoroidal haemorrhage. This should include history of anticoagulant or antiplatelet use, recording of blood pressure and blood sugar levels, and assessment of bleeding and clotting profiles. Acute secondary glaucoma is a common

complication, occuring in over 85% of SSCH cases. [1] Bullous haemorrhagic choroidal detachment moves the lens-iris diaphragm forward, causing acute secondary glaucoma. In the absence of hyphema, such glaucoma may be misdiagnosed as pupillary block.

Ultrasound B scan serves as the best tool for diagnosis and management of SCH. On B scan, SCH typically appears as a dome-shaped choroidal detachment with multiple low reflective dot echoes behind the membrane suggestive of haemorrhage, in one or more quadrants. Ultrasound is used for monitoring clot lysis or liquefaction which appears as progressively lower and less irregular internal reflectivity during subsequent visits. Ultrasound also helps to plan the surgical intervention based on clot lysis and helps determine the quadrant of highest choroidal detachment were the drainage should be attempted.

There are no remarkable features in fundus fluorescein angiography (FFA), indocyanine green angiography (ICG), and fundus autofluorescence (FAF). However, they can help in differentiating SCH from other choroidal mass lesions. Choroidal mass lesions including choroidal melanoma, granuloma and haemangioma are the main differential diagnosis of SCH and are usually painless, in contrast to SCH, which is usually associated with severe ocular pain due to sudden stretching of the ciliary nerves. [5]

Surgical drainage including anterior chamber lavage and drainage sclerostomy is indicated for lens-corneal touch, uncontrolled IOP, and kissing choroidals. [6,7] It has also been recommended that surgical intervention be considered if more than two quadrants posterior to the equator are involved. [5] It is advisable to wait for clot lysis of the SCH confirmed on ultrasound B scan which takes 10–14 days, as attempts to drain before clot lysis may not prove successful. [5] Surgical drainage is combined with vitrectomy in the presence of vitreous haemorrhage, lens dislocation, vitreoretinal traction or retinal detachment. However, in large macular SSCH the prognosis for vision is often poor. [1, 8]

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