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Management of foldable capsular vitreous body implant exposure: First reported case

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Abstract

Management of phthisis bulbi is challenging for ophthalmologists, and often results in evisceration. Foldable capsular vitreous bodies have been developed as an alternative to evisceration in eyes with chronic retinal detachment. We present a case of foldable capsular vitreous body implant extrusion, which necessitated removal and evisceration. This case highlights risks associated with their use, and the importance of appropriate patient selection. Further study and investigation are required to confirm the long-term safety of foldable capsular vitreous body implants.

Keywords: Foldable capsular vitreous body; Phthisis; Extrusion; Phthisis bulbi.

Abbreviations: FCVB: Foldable Capsular Vitreous Body; SO: Silicone Oil.

Introduction

Management of phthis bulbi has been limited to supportive measures, evisceration and enucleation. The foldable capsular vitreous body (FCVB - Vesber, Guangzhou, Guandong, China) [1] is a new intraocular implant to address phthisis. It replaces vitreous cavity volume while avoiding an interface between oil and the eye. It aims to prevent progression of phthisis. However, little is published regarding complications associated with its use. As it becomes more prevalent, it is important ophthalmologists are aware of potential complications and their management.

The FCVB (Figure 1) is made of medical grade silicone rubber [2]. It is inserted into the eye following standard three port pars plana vitrectomy. The valve is positioned under the conjunctiva, and the conjunctival incision is closed with absorbable sutures.

Case presentation

A FCVB was implanted to the right eye of a 38 year old man following recurrent retinal detachment due to penetrating eye injury. He had previously undergone two pars plana vitrectomies with Silicone Oil (SO) insertion and placement of an encircling band. Four months after the FCVB insertion he was found to have extrusion of the valve, and underwent evisceration and removal of the FCVB (Figure 2).

Discussion

There are few published reports regarding FCVBs. The data collected are heterogenous so are unsuitable for quantitative comparison. All eyes have either complex retinal detachments or extensive posterior segment injury requiring long term SO use. Most patients were over 18 years of age, but some series included children [1,3,4]. The duration of follow up was vari-

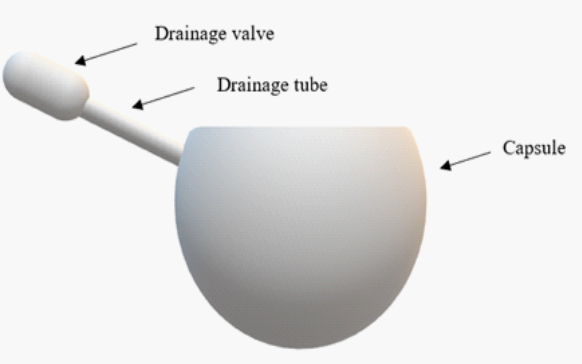

Figure 1: Schematic of FCVB. The capsule is shaped to replicate the vitreous cavity, with a flat surface which abuts the lens. It is attached via a drainage tube to a drainage valve, and can be filled with silicone oil, balanced salt solution or hydrogel. A 4 mm scleral incision is made 5 mm posterior and parallel to the limbus, and the triple folded FCVBI is inserted into the vitreous cavity. It is then filled via the drainage valve and tube.

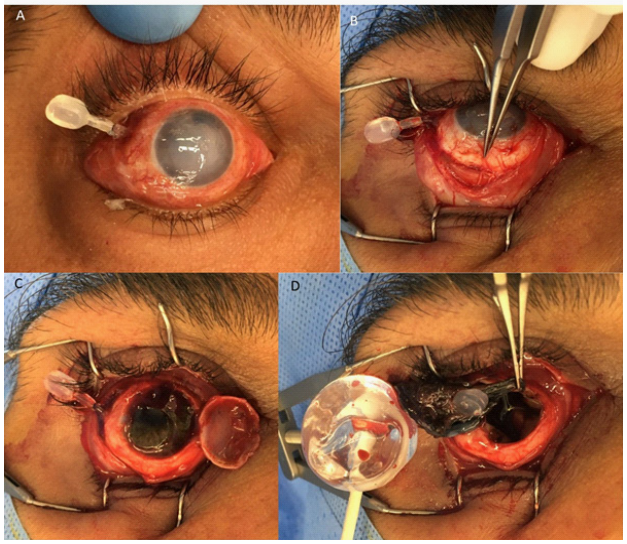

Figure 2: Evisceration for extruded FCVB. **(A)** Preoperative appearance with opacified cornea and extruded FCVB drainage valve. **(B)** Conjunctival peritomy, demonstrating scleral buckle. **(C)** Corneal button removed). The valve was removed to partially drain the SO. **(D)** Explanted FCVB and uveal tissue. Evisceration with removal of FCVB was performed with insertion of a bio ceramic orbital implant (Aluminium Oxide–Ai_2O_3. FCI, Issy-Les-Molyneaux, France). FCVB: Foldable Capsular Vitreous Body.

able, but mostly under 12 months. One study documented a case of extruded drainage valve [5], but did not comment on its management. To our knowledge, this is the first published case report discussing the management of an extruded FCVB. The use of intraocular implants in patients with poor or no visual potential represents a shift from the paradigm of avoiding surgery due to the risk of developing sympathetic ophthalmia in the fellow eye [6]. This requires careful preoperative discussion with the patient so they are aware of the risks of surgery. The decision to proceed is balanced by the consideration of the physical and psychological impacts of removing the phthisic eye.

We proceeded with evisceration as the eye had no visual potential and had already undergone multiple surgeries. It was felt that repositioning the valve would likely lead to further extrusion due to mechanical erosion with the scleral buckle. Few reported cases involved concurrent scleral buckle. Liu et al. [7] report two of their five patients had a scleral buckle and no extrusion was documented during their 12 month follow up period. The encircling band is a possible cause of drainage valve extrusion in our patient, as it made it difficult to position the valve in its normal subconjunctival location, and resulted in the valve sitting more anteriorly. This may have resulted in increased mechanical irritation between the valve and the overlying conjunctiva, leading to its erosion. This case highlights risks associated with a new implant to address phthisis. Ophthalmologists should be aware of this device and its possible wider use. Further research is needed to examine the indications, long-term outcomes and complications with FCVB implants.

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