DESCEMET’S MEMBRANE DETACHMENT AS A COMPLICATION OF CATARACT SURGERY

DESPRENDIMIENTO POSTQUIRÚRGICO DE LA MEMBRANA DE DESCEMET (A PROPÓSITO DE UN CASO)

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ABSTRACT

Case: A case of Descemet’s membrane detachment after cataract surgery successfully treated with an injection of sulphur hexafluoride 20% is presented. Discussion: Possible pathogenic mechanisms and available therapeutic options are discussed. We highlight the need for prophylactic measures and the importance of an early detection to prevent further damage (Arch Soc Esp Oftalmol 2008; 83: 549-552).

Key words: Descemet’s membrane, detachment, SF6, anterior chamber, phacoemulsification, cataract surgery complications.

RESUMEN

Caso clínico: Se presenta un caso de desprendimiento de la membrana de Descemet tras cirugía de la catarata mediante facoemulsificación tratado con éxito utilizando SF6 al 20% intracameral. Discusión: Se exponen los posibles mecanismos etiopatogénicos y se comentan las distintas opciones terapéuticas. Enfatizamos la necesidad de adopción de medidas preventivas de este trastorno y de la importancia de su detección inmediata para evitar complicaciones adicionales.

Palabras clave: Desprendimiento, membrana de Descemet, SF6 intracameral, facoemulsificación, complicación.

INTRODUCTION

Post-surgical Descemet membrane detachment (DMD) is an infrequent complication having a serious impact on the eyesight if not treated adequately. It is usually related to cataracts surgery but it has also been described in other ocular operations. At the clinical level, two types are differentiated: planar when the separation between Descemet’s membrane and the stroma is under 1 mm and non-planar when said separation exceeds 1 mm. Small detachments caused by incisions, with hardly any clinical significance, are not included in this classification.

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CASE REPORT

A 72-year old woman without relevant history, operated on for cataracts in LE by phacoemulsification with intra-ocular lens implant in capsular sac.

The pre-op ophthalmological exploration revealed a visual acuity of 0.4 in RE and bulk vision in LE. The biomicroscopy exploration yielded normal results excepting a cortical cataract in RE and an advanced cataract in LE. Pupil reflexes, intra-ocular pressure, RE ophthalmoscopy (not visible in LE) and LE posterior segment echography gave normal results.

The operation was carried out with temporal topical anesthesia. Due to the poor visualization of the capsule it was dyed with triphane blue after a liquid-air exchange. When attempting to introduce viscoelastic material a wave was observed in the cornea which expanded concentrically from the paracenthesis performed at 5 o’clock. Having identified the DMD, the surgery was completed without further complications utilizing low fluidity parameters and continuously protecting the endothelium with viscoelastic so as to avoid damaging the membrane.

At the end of the operation no gas was introduced to reapply Descemet’s membrane since corneal turbidity did not allow the identification of the detachment limits and/or the existence of tears or folds.

The post-op exploration 24 hours after the intervention exhibited a slight-moderate corneal edema which defined an extensive inferior non-planar detachment (figs. 1 and 2). Treatment with corticoids was established and the following day an aqueous-SF6 exchange (20%) was carried out through superior paracentesis.

After 10 days, when the intra-chamber gas was reabsorbed, Descemet's membrane exhibited a nearly complete aposition excepting small isolated areas with a separation of approximately 300 microns from the stroma. These were spontaneously reapplied in a progressive manner in the course of the following month (figs. 3,4).

Three months after surgery the visual acuity was of 0.8 and the biomicroscopic exploration only revealed a slight thickening of Descemet’s membrane in the previously detached area.

DISCUSSION

In the course of anterior segment surgery, DMD usually occurs in the entry incisions, above all when manipulated excessively. This was our case, where the detachment occurred when attempting a viscoelastics injection through a paracenthesis with an apparently deficient angle.

Even though the origin of DMD is considered to be iatrogenic, the existence of some as yet undetermined predisposing factor is suspected (1,2) due to a high prevalence of bilateral occurrences. It can develop at any time during surgery and its early identification is crucial to avoid membrane rupture or even removal (3). In our case, measures such as the rejection of the membrane with viscoelastic material, the utilization of low vacuum and lens emulsification in the posterior chamber

Fig. 1: Corneal edema defining the DMD.

Fig. 2: Showing the surface of the detached Descemet membrane.
allowed us to complete the surgery without additional complications.

Swift action in DMD is essential (5). It the anterior chamber gas injection cannot be carried out at the end of the surgery, it must be done in the first days after the operation. Cases have been reported in which a non-interventionist approach awaiting spontaneous reapplication led to the impossibility of reapplying Descemet’s membrane. However, a conservative approach would be indicated with a close follow-up in non-extensive planar DMD.

All the therapeutic options include the injection of tampon gas in the anterior chamber and accessory manoeuvres such as flap suture or manipulation with a surgical instrument. The tampon of choice must persist enough time to reapply the membrane without damaging the endothelium. Accordingly, we utilized SF6 (20%) [the least toxic to the endothelium (4)] and C3F8 (14%) had the highest percentage of reapplications and lowest number of complications in the series found in the literature. Due to its short life, air was reserved for small incision detachments.

In what concerns the flap suture we do not believe it is indicated as initial treatment due to the risk of severe complications and infections, wrinkles in the membrane and residual leucoma (5). However, we do believe it should be considered for refractory cases. Manipulations with surgical instruments should be limited to what is strictly necessary due to the risk of causing endothelial damages.

To conclude, knowledge about this pathology is essential in order to adopt measures such as the adequate manipulation of surgical instruments through the incisions to prevent its development. In addition, we emphasize the importance of its early detection in the course of the operation to avoid added complications.

REFERENCES