Short communication

Express implant in Urrets-Zavalia syndrome after descemet’s stripping automated endothelial keratoplasty


Unidad de Gestión Clínica de Oftalmología, Hospital Universitario Virgen del Rocío, Sevilla, Spain

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ABSTRACT

Case report: The first case is described on a patient with Urrets-Zavalia syndrome after Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) in whom an Express implant was used.

Discussion: The Express implant is a useful tool for complex cases of post-surgical glaucoma where patients need to avoid post-operative inflammation and risks (corneal transplant patients). It is also very useful in cases with a high risk of fibrosis due to previous interventions.


Corresponding author.

E-mail address: anachufa@hotmail.com (A. Muñoz-Morales).

Implante express en sindrume de Urrets-Zavalia post descemet stripping automated endothelial keratoplasty

RESUMEN

Caso clínico: Presentamos el primer caso descrito de una paciente que cursó con un sindrome de Urrets-Zavalia (SUZ) tras la realización de Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) en el que se ha utilizado un implante Express.

Discusión: El implante Express es una herramienta útil para casos complejos de glaucoma posquirúrgico donde los pacientes requieren un postoperatorio con menor inflamación y

* Corresponding author.

E-mail address: anachufa@hotmail.com (A. Muñoz-Morales).

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Introduction

The Urrets-Zavallón syndrome (SUZ) is characterised by a pupil in fixed miotic after surgery, accompanied, in most cases, by iris atrophy and glaucoma. Its aetiopathogenesis is unknown, but seems to be a multifunctional process influenced by iridial ischaemia during or after surgery. Its treatment is complex. Some authors have described a spontaneous recovery in 4–18 weeks after the use of 1% pilocarpine.\(^1\) For secondary associated glaucoma, several treatments have been used.

The potential causes for its onset after DSAEK and its management are argued, including the use, for the first time, of the ExPRESS implant in a patient with these characteristics.

Clinical case

56-year old patient with Fuchs' dystrophy who had a DSAEK assisted with microkeratome (M2® Moria 400 μm blade) decompensated after cataract surgery. During the surgery, pressures were maintained in the anterior chamber (ac) using vitreotome (Constellation Vision System®, Alcon, Fort Worth, USA). After introduction of the graft, air was left at 50–20 mmHg for 3 min in descending gradient to achieve full adhesion. It was completed with an air bubble of more than half a chamber and positioning in supine decubitus, together with miotics, antibiotics and topical corticosteroids. 8 h after the surgery, IOP above 50 mmHg and areactive pupil in midriasis with narrow ac consistent with SUZ were detected. The lenslet remained adhered, the cornea had an acceptable transparency (due to depthisation and total adherence of the endothelium) and the air bubble was not visible in the ac. There was an attempt to control IOP with topical medication (timolol maleate and brinzolamide eye drops) and systemic (500 mg 20% mannitol iv) without achieving a level lower than 40 mmHg.

The ac was then reformed with serum, and it was verified that there was no air behind the iris, breaking the iridial synechias with a manipulator and low-density viscoelastic, allowing the slackening of the angle. Since the IOP could not be lowered despite the medical treatment, filtrating surgery was performed 5 days after the DSAEK with ExPRESS P50 implant (Alcon). The following day the IOP was at 12 mmHg, the cornea remained transparent, the graft was in place and there was less swelling of ac with areactive midriasis. (Fig. 1). The treatment of pupillary midriasis with 1% pilocarpine had no results. After 4 months of follow-up without medication, the IOP remained controlled. The anterior segment OCT (Topcon® 3 D OCT-1000, Topcon Corporation, Tokyo, Japan) showed a good lenslet position, fully adhered, with thickness of approximately 600 μm in the central area (Fig. 2).

Discussion

Among the various aetiopathogenic mechanisms of the SUZ, the most accepted is the closure of scleral vessels by elevation of the IOP, causing iridial ischaemia and secondary areactive midriasis. As associated factors, alterations of the simpatical nervous system have been described, and exposure to general anaesthesia or other toxic substances during surgery.\(^2\) In most theories, iridial ischaemia and closure of the angle due to formation of peripheric synechias are implied, mechanical displacement of the iris or inflammatory reaction. The SUZ may be more frequent in phakic patients with no peripheric iridectomies.\(^3\) Some authors consider secondary glaucoma as a complication subsequent to SUZ when the pupil remains areactive.\(^4\)

The appearance of a SUZ after DSAEK has already been described by other authors.\(^5,6\)

In the case described, several factors must be considered which may have had an influence on the onset of the condition. During surgery, there were air-fluid exchanges at 40 mmHg pressures, allowing drainage for paracentesis. These pressures could favour the passage of fluid/air behind the iris or a vitreal chamber, causing peripheral iridial bulging and

![Fig. 1 – Image in biomicroscopy of postoperative of DSAEK with SUZ, pupil atrophy, pupil in fixed midriasis and adhered lenslet with transparent cornea.](image1)

![Fig. 2 – The anterior pole OCT with adhered lenslet and 609 μm central cornea thickness.](image2)
angular closure. This pupilar blockage may have been avoided with a previous iridotomy, which could not be performed due to lack of corneal transparency. Intraoperative pupilar blockage caused by high air pressures in addition to the passage of fluid behind the iris may have caused the increase of the IOP and the iridial ischaemia which finally resulted in an areactive pupil. In subsequent surgeries we used lower pressures (from 10 to 20 mmHg), finishing with a bubble occupying half of the ac.

Secondary associated glaucoma did not respond to the medical or surgical treatment, and therefore it was decided to perform filtrating surgery with ExPRESS implant. No pupilloplasty was performed, to avoid damaging the lenslet or cause more swelling in the ac and worsening of the IOP.

The ExPRESS implant is useful in complex cases where the trabeculectomy may have worse results in the event of complications such as atalamy or hypothy. In our case it was paramount to preserve the viability of the lenslet to avoid adverse circumstances. It is also adequate for patients requiring postoperative with minimal swelling (keratoplasties) or in cases with high potential for fibrosis from earlier operations.7

Conflict of interest

The authors declare that there are no conflicts of interest.

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