

118. Kongress der Deutschen Ophthalmologischen Gesellschaft

8.10.-11.10.2020

Berlin

Wissenschaftliches Programm

Friday, 09. October 2020

ISOT
14:30 - 15:15

Channel Helmholtz

ISOT-03 Anterior segment and eyelid injuries

Vorsitzende/r: Ferenc Kuhn, Birmingham, United States

Vorsitzende/r: Arne Viestenz, Halle/Saale

Vorsitzende/r: Jose Dalma Weiszhausz, Mexiko City, Mexico

ISOT-03-01 **Spectrum of severe eyelid laceration in a teaching hospital** 14:30 - 14:35
Referent/in: Rajendra Prakash Maurya, Varanasi, India

Background: Severe eyelid injuries are usually associated with facial injury or polytrauma. We report clinical characteristics, functional and cosmetic outcomes, following surgical repair of severe lid laceration.

Methods: Hospital based prospective, interventional cases, from February 2014 to March 2017. Mode and extent of injury, management and outcome were analyzed.

Results: Out of 86 patients with severe lid laceration, 64 (74.42%) were males and 22 (25.58%) were females. Age ranged from 2 to 70 years. Among the cause of injury, RTA accounted for 37.21%, physical assault 23.26%, Fall from height 11.63%, recreational activity 11.63% and animal bite 9.30%. Right eye (56.98%) was commonly involved. Upper lid was injured in 47.67% cases and medial 1/3rd of lid (44.19%) was the common site of injury. Lid margin was involved in 69.77% cases and canalicular involvement was seen in 30.23% patients. In majority, laceration was full thickness. 3 patients had lid avulsion and 25.58% had an associated open globe injury. Orbital fracture were seen in 23.26% patients. All patients underwent primary lid repair. Postoperatively patients had notching (5.81%), traumatic ptosis (6.98%) and epiphora (5.81%).

Conclusion: Severe eyelid laceration may result in tissue loss and provide a difficult reconstructive challenge. Through clinical evaluation, assessment of extent of injury and missing layers and early meticulous repair may lead to good outcomes.

ISOT-03-02 **Glaucoma after corneal trauma or surgery - A rapid, inflammatory and IOP-independent pathway** 14:35 - 14:40
Referent/in: Eleftherios Paschalis Ilios, Boston, United States

Introduction: Glaucoma is a frequent and often severe long-term complication after corneal surgery, infection, or trauma - well documented in an extensive literature. In a number of cases, IOP has been normal or low, still resulting in progressive visual field loss and blindness. Beyond lowering the IOP in any type of glaucoma, there is clear need for additional neuroprotection.

Objectives and Aims: To review clinical aspects as well as cellular and molecular steps in the development of long-term glaucoma following corneal surgery or acute trauma—especially the pivotal role of TNF- α , the rapidity of the secondary damage to the retinal ganglion cells, and the clinical promise of early anti-inflammatory intervention.

Methods: Publications on laboratory experiments have been juxtapositioned to clinical outcome studies on post-injury and post-surgery glaucoma on one hand, as well as to the known role of ganglion cell damage in glaucomatous neuropathy. Alkali burn to the cornea of mice and rabbits has served as the main experimental model. TNF- α , ganglion cell apoptosis and depletion of optic nerve axons have been examined. Anti-TNF- α antibodies or corticosteroids have been employed to protect the retinal ganglion cells.

Results: In animals with alkali burn to the cornea, damage to the retina can occur within 24 hours. This is not due to a direct pH change posteriorly—the alkali is effectively buffered at the iris-lens level. Rather, TNF- α (and other inflammatory cytokines), generated anteriorly, rapidly diffuses posteriorly to

cause apoptosis of the ganglion cells. During this time the IOP remains normal. The TNF- α antibody infliximab, if administered promptly is markedly protective of the ganglion cells.

Conclusion: A rapidly initiated, inflammatory (TNF- α mediated), IOP-independent pathway to glaucoma, resulting from acute anterior segment trauma, has been identified in laboratory studies. Prompt prophylactic treatment with anti-inflammatory agents has been shown to be markedly neuroprotective of retinal ganglion cells, presumably capable of reducing the risk of late glaucoma.

ISOT-03-03 **Modified SLET technique - a new surgical technique for LSCD after ocular trauma Name: PALT (partial allogeneic limbal transplantation)** 14:40 - 14:45
Referent/in: Christiane Kesper, Halle/Saale

Background: Limbal stem cell deficiency (LSCD) is a rare but extremely relevant disease of the eye. It occurs most frequently after severe eye burns and is therefore usually one-sided. Men are more frequently affected than women. Affected patients often need a variety of operations, in some cases including keratoplasty. However, the outcome of multiple surgeries is often frustrating due to LSCD relapse.

Methods: We developed a new type of surgical technique for the treatment of limbal stem cell deficiency, in which a partial allogeneic limbal transplantation (PALT) is carried out as part of a penetrating keratoplasty (PK). First of all the PK is performed. Afterwards a few parts from the limbal tissue of the donor are prepared and placed under the sutures attaching the corneal graft. This procedure was performed on nine patients with LSCD (three women and six men), five of them caused by severe ocular burn. The age average was 68 years (47-90 years). Between two and six limbal transplants were used during the surgical procedure. The follow-up period was on average eight months (5-12 months).

Results: All nine patients showed a stable or increased visual acuity after the surgery compared to preoperative visual acuity. There was no progression of corneal vascularization beyond the limbal grafts in any of these patients. A better success in terms of transparency, visual acuity and vascularization was particularly evident in the transplantation of several small limbus parts compared to a few large parts. All of the grafts were integrated in the superficial corneal layers.

Conclusion: The PALT method seems to be a promising surgical procedure in patients with LSCD. It can be carried out very well in the context of keratoplasty and does not require a separate donor tissue. The transplants may offer the possibility of constructing a new limbal region.

ISOT-03-04 **Traumatic cataract with anterior segment involvement- predictive prognostic factors** 14:45 - 14:50
Referent/in: Rita Vieira, Porto, Portugal

Purpose: To study potential prognostic factors in traumatic cataract with isolated anterior segment involvement.

Methodology: Data of all patients with history of ocular trauma arrived at Centro Hospitalar e Universitário do Porto (CHUP) between 2003 and January 2020 were assessed. From a total of 789 patients with ocular trauma, all patients with traumatic cataract were selected: those who showed retinal or choroidal affection or vitreous hemorrhage were excluded. Patients with vitreous penetration by an intraocular foreign body (IOFB) with no other posterior segment affection were included. Demographic data, type of trauma (open vs closed), presence of IOFB, affection of cornea, sclera, anterior chamber (AC), iris, anterior and posterior capsule rupture, time and type of cataract surgery, intraocular lens (IOL) implantation, initial and final visual acuity (VA), the need for vitrectomy (VPP) and surgical complications were analyzed. Final VA was analyzed according to many of those factors, in order to study if they may influence final visual prognosis.

Results: From a total of 789 patients with ocular trauma, 214 (27.1%) had traumatic cataract, and 101 (12.8%) had traumatic cataract with anterior segment involvement alone. Our study population (n=101), had 91 male (90.1%) and the mean age was 40.9 \pm 17.7 years. Open and closed trauma occurred in 91.2% and 8.9% respectively. IOFB was present in 22 patients (21.8%). The majority had corneal involvement (n=88; 87.1%), 19 (18.8%) had scleral involvement, 16 (16%) had AC involvement and 43 (42.6%) had iris affection. A total of 18 patients (17.2%) had posterior capsule rupture. The main surgical procedure was phacoemulsification with simultaneous IOL implantation. The IOL was implanted mainly in the bag (70.7%). VPP was needed in 44.4%, because of IOFB or posterior capsule rupture. Median LogMAR final VA was 0,30 (0,1; 0,82). These values were worse within patients who needed VPP [(0,79 \pm 0,62 vs 0.35 \pm 0.40), p<LT; 0.001], and within patients with iris involvement [(0.77 \pm 0.63 vs 0.35 \pm 0.44), p<LT; 0.001].

Conclusion: According to our study, two factors may influence final visual prognosis in patients with traumatic cataract with anterior segment affection alone: patients who need VPP and patients with iris affection (dialysis, sphincter rupture and traumatic iridectomy) had worse final VA. Initial VA, posterior capsule rupture, IOL local implantation and presence of IOFB showed no difference in final visual prognosis.

- ISOT-03-05 **Reper intraocular lens and artificial iris complex implantation for traumatic aniridia and aphakia** 14:50 – 14:55
Referent/in: Joao Heitor Marques, Porto, Portugal
- Introduction:** Combined lesions of iris and lens are frequent and severe sequelae of ocular trauma. Surgical correction has been limited to a two-device procedure, with an intraocular lens (IOL) secured to an iris prosthesis, or to one-device rigid iris-lens diaphragm implantation (Aniridia Implants, Morcher® GmbH and 311 Aniridia Lens, Ophtec). These devices require a surgical incision of 8mm or more, compromising the refractive outcome and potentiating operative and post-operative complications. Recently available in Europe, the Reper IOL and artificial iris complex is a flexible device that can be implanted with injector or forceps through a 2.7mm corneal incision. Furthermore, its diaphragm color and pattern can be customized to match the contralateral iris.
- Methods:** We report a series of consecutive Reper IOL implantation cases. Patients underwent photography of the anterior segment of the eye, corneal tomography, specular microscopy with endothelial cells count, optic disc and macular optical coherence tomography, both before and after the surgery. The surgical procedure was video recorded.
- Cases:** Three patients were included, two had traumatic aniridia and aphakia and one had traumatic mydriasis and aphakia. Due to photophobia complaints, all patients underwent reconstruction with a Reper IOL implantation with scleral fixation, given the absence of capsular bag or support. Because of the presence of scleral fixation sutures, the devices were implanted assisted with forceps. Intra-scleral polypropylene sutures were performed. All surgeries underwent without relevant complications, all eyes improved their best-corrected visual acuity and all patients improved their photophobia complaints. The longest follow-up period was 10 months.
- Conclusion:** The Reper IOL seems to be an effective and safe surgical treatment for traumatic aniridia and aphakia. Its main advantage is the possibility to be implanted through a smaller incision and the three-haptic design, which confers better stability and centration.
- ISOT-03-06 **Cyclodialysis: report of a case and review of the literature** 14:55 – 15:04
Referent/in: Maxime Delbarre, Clamart, France
- Introduction:** Cyclodialysis is a rare condition that is difficult to manage. We present the case of a woman with a cyclodialysis complicated by chronic hypotony requiring two surgeries to achieve reattachment of the ciliary body. We also report the results of a review of the literature regarding the treatment of this condition.
- Description:** This is a 46-year-old woman with history of trauma to the right eye. Examination revealed an intra-ocular pressure (IOP) of 7mmHg, a shallow anterior chamber and signs of chronic hypotony on fundus examination (vascular tortuosity, hypotony maculopathy) due to an extensive 360° cyclodialysis, confirmed by ultrasound biomicroscopy. Transcleral cryotherapy as a first-line approach did not achieve reattachment of the ciliary body. Secondary pars plana vitrectomy with gas tamponade (C2F6) reattached the ciliary body and restored the intraocular pressure (12mmHg) and normal fundus appearance. The patient recovered corrected visual acuity of 20/20.
- Discussion:** To our knowledge, there is no standardized management for cyclodialysis. The study of the literature available on the Medline database showed that direct cyclopexy remains the most common treatment, followed by vitrectomy with internal tamponade. Neither the extent nor the duration of the cyclodialysis can predict the visual recovery, which can be major even after weeks of hypotony.
- Conclusion:** The management of cyclodialysis is not well-defined; it remains a true therapeutic challenge.
- ISOT-03-07 **Persisting ocular hypotony due to ciliary body cleft - cyclopexy is the therapy of choice** 15:04 – 15:09
Referent/in: Arne Viestenz, Halle/Saale
- Background:** One to three percent of patients with severe ocular trauma may develop a ciliary body cleft. Without spontaneous cleft closure or surgical repair the eyes may become hypotonic.
- Patients and methods:** We report on 10 patients with ciliary body cleft after severe ocular trauma (closed globe and open globe eye injuries) and with ocular hypotony (IOP < 5 mmHg). The ciliary extension of body cleft ranged from 1.5 up to 12 clock hours. Three types of surgery had been used for ciliary body fixation: method with contralateral sutures, direct full thickness suturing through the sclera and partial thickness suturing through the sclera according to Naumann (with prolene 10-0 or prolene 9-0 sutures). The extension of ciliary body cleft was detected with open sky examination or UBM or gonioscopy after wound closure.
- Results:** All three surgical methods had been successful, leading to loss of corneal folds, choroidal and retinal folds and reduction of papilledema e vacuo. All eyes developed an intraocular pressure of 9 mmHg and more. The gonioscopy/UBM showed a closure of all ciliary body clefts: The technique of partial scleral thickness radial ciliary body suturing was the most successful surgery - it was complete, the other techniques showed small incomplete cleft closures between the sutures.
- Conclusions:** In case of open globe injuries, a direct cyclopexy through the sclera is possible. If there

is a time delay between primary wound repair and ciliary body fixation a cyclopsy according to Naumann is the preferred method.

ISOT-03-08 **Corneal protection after corneal burn**
Referent/in: Norbert Schrage, Köln

15:09 - 15:14