



Università di Palermo
Dipartimento di Biomedicina Sperimentale
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Sezione di Oftalmologia
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CHERATOPLASTICA IN IDROPE CORNEALE ACUTA DA CHERATOCONO. NOSTRA ESPERIENZA

SCUOLA DI SPECIALIZZAZIONE OFTALMOLOGIA PALERMO

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Campofelice di Roccella – 15 Aprile 2016

CHERATOCONO


PATOLOGIA
ECTASICA NON
INFIAMMATORIA
DELLA CORNEA , LA
QUALE ASSUME UN
ASPETTO CONICO
SECONDARIO AD
ASSOTTIGLIAMENTO
E PROTRUSIONE .




CHERATOCONO

- **50- 230 CASI PER 100.000**
 - **ESORDIO ALLA PUBERTA'**
 - **10 -20 ANNI DI PROGRESSIONE**
 - **BILATERALITA'**
 - **TRASMISSIONE EREDITARIA 6%**
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

CHERATOCONO

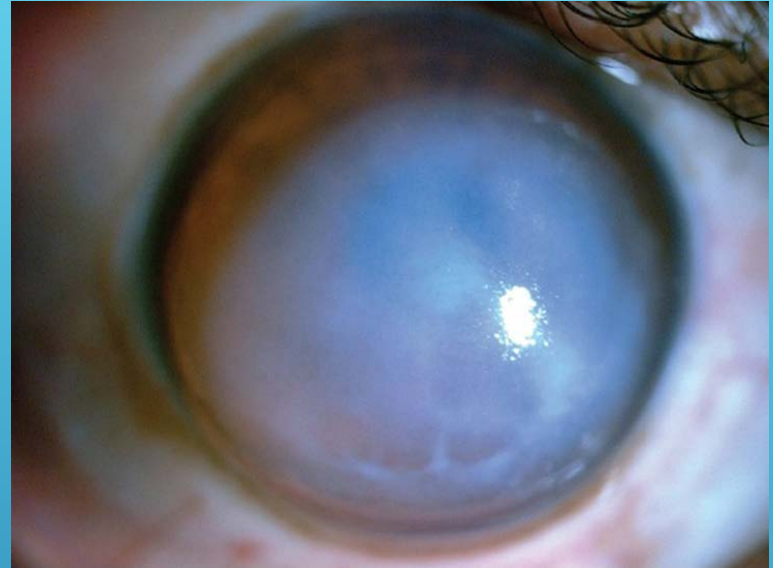
- **ATOPIA**
 - **SINDROME DI DOWN**
 - **SINDROME DI EHLNER-DANLOS**
 - **OSTEOGENESI IMPERFETTA**
 - **PROLASSO DELLA VALVOLA MITRALE**
 - **FLOPPY EYELID SYNDROME**
- 

CHERATOCONO

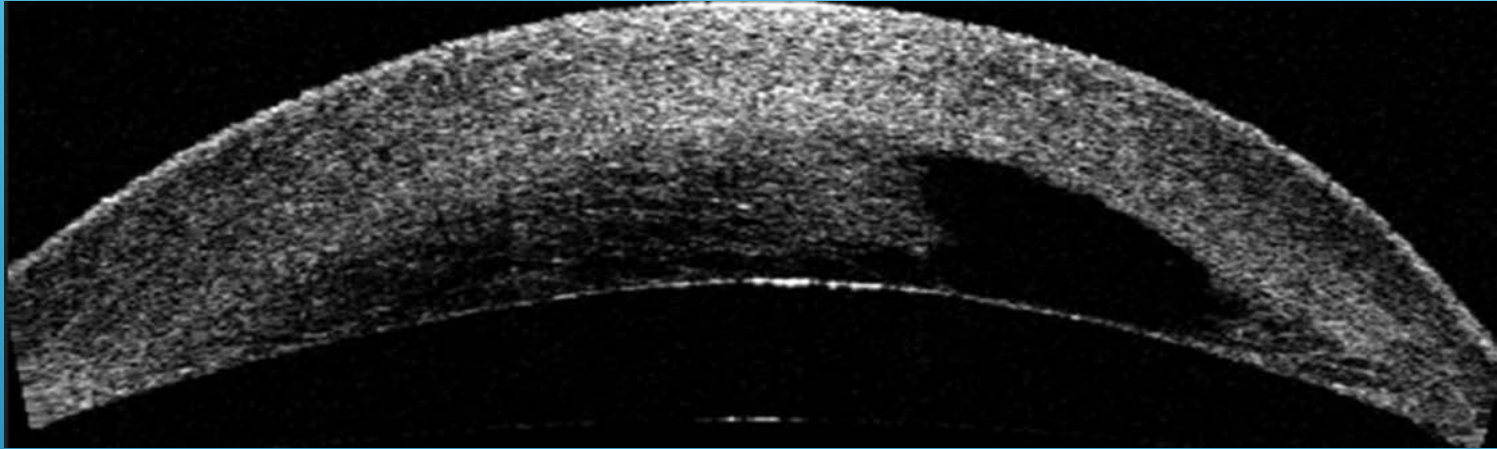
- **PROGRESSIVO ANNEBBIAMENTO VISIVO**
 - **DISTORSIONE DELLE IMMAGINI**
 - **FOTOFOBIA**
 - **DIPLOPIA MONOCULARE**
 - **IRRITAZIONE OCULARE**
 - **ASTIGMATISMO MIOPICO IRREGOLARE**
 - **RIFLESSO RETINOSCOPICO A FORBICE**
- 

CHERATOCONO

- CICATRIZZAZIONE
- IDROPE CORNEALE
- PSEUDOCISTI CORNEALI
- FISSURAZIONI INTRASTROMALI
- NEOVASCOLARIZZAZIONE



▶ IDROPE ACUTA



E' IL RISULTATO DELL'IMBIBIZIONE STROMALE DI ACQUEO IN SEGUITO ALLA ROTTURA DELLA MEMBRANA DI DESCHEMET.

L'EDEMA PUÒ PERDURARE PER SETTIMANE O MESI , RISOLVENDOSI GENERALMENTE IN UN TEMPO VARIABILE DI 5-36 SETTIMANE.

Intracameral Air Injection for Acute Hydrops in Keratoconus

KAZUNORI MIYATA, MD, HIDEKI TSUJI, MD, TATSURO TANABE, MD,
YOSHIKO MIMURA, MD, SHIRO AMANO, MD, AND TETSURO OSHIKA, MD



- **PURPOSE:** To evaluate the efficacy and safety of intracameral air injection in treating acute hydrops in keratoconus.
- **DESIGN:** Retrospective, nonrandomized, comparative trial.
- **METHODS: PATIENTS:** Thirty eyes (30 patients) with acute hydrops secondary to keratoconus. **INTERVENTION:** Nine eyes (nine patients) with acute hydrops in keratoconus were treated with intracameral injection of 0.1 ml filtered air. Additional 0.1 ml filtered air was injected if corneal edema persisted when air disappeared from the anterior chamber. Twenty-one eyes (21 patients) with acute hydrops that received no therapy or conventional therapy not likely to shorten the duration of hydrops served as controls. **MAIN OUTCOME MEASURES:** The period of persistence of corneal edema, the interval between the onset of acute hydrops, and the time when the eye could begin to wear a hard-contact lens, and best spectacle-corrected and hard-contact lens-corrected visual acuity after corneal edema subsided were used as criteria to evaluate any differences between the two groups.
- **RESULTS:** The average period of persistence of corneal edema was 20.1 ± 9.0 days (\pm SD) in the intracameral air injection group and 64.7 ± 34.6 days in the control ($P = .0008$). The average interval between the onset of acute hydrops and the time when the eye could begin to wear a hard-contact lens, was 33.4 ± 5.6 days in the air injection group and 128.9 ± 85.8 days in the control group ($P = .0058$). The best-corrected visual acuity after corneal edema subsided was similar between the two groups. Intracameral air injection induced no complications.
- **CONCLUSIONS:** The results suggest that the intracameral air injection is a safe and useful therapy to shorten the period of corneal edema in acute hydrops secondary

Acute Corneal Hydrops Treated by Intracameral Injection of Perfluoropropane (C₃F₈) Gas

Susmita G. Shah, DNB, M.S. Sridhar, MD, and Virender S. Sangwan, MD

PURPOSE: To report a case of acute hydrops with intrastromal cleft in a patient of keratoconus with associated Marfan's syndrome, treated with intracameral injection of perfluoropropane (C₃F₈) gas.

DESIGN: Interventional case report.

METHODS: A nonexpansile concentration of perfluoropropane gas (0.2 ml) was injected intracamerally in the operating room under aseptic precautions.

RESULTS: There was complete and rapid resolution of corneal edema.

CONCLUSION: Intracameral perfluoropropane gas in nonexpansile concentration may be a useful modality for

Intracameral Perfluoropropane Gas in the Treatment of Acute Corneal Hydrops

Sayan Basu, MD,¹ Pravin K. Vaddavalli, MD,¹ Muralidhar Ramappa, MD,¹ Sushmita Shah, MD,² Somasheila I. Murthy, MD,¹ Virender S. Sangwan, MD¹

Purpose: This study is aimed to evaluate the role of 14% nonexpansile concentration of perfluoropropane (C_3F_8) gas in the management of acute hydrops in corneal ectasias.

Design: Retrospective, nonrandomized, comparative, interventional case series.

Participants and Controls: The study group consisted of 62 eyes of 57 patients and the control group included 90 eyes of 82 patients with acute corneal hydrops who presented within 30 days of onset of symptoms.

Intervention: Patients in the control group underwent a single intracameral injection of 0.1 mL of nonexpansile concentration (14%) of C_3F_8 gas. Patients in the control group were treated conservatively. Patients in both groups were followed regularly for 12.6 ± 7.7 and 13.4 ± 8.3 months in the study and control groups, respectively, and assessed clinically for complete disappearance of epithelial and stromal edema on slit-lamp biomicroscopy.

Main Outcome Measures: The primary outcome measure was mean time to resolution of corneal edema, which was calculated both from the date of onset of hydrops and the date of initiation of therapy to the date of resolution in days.

Results: The overall time to resolution both from the date of onset of symptoms (90.5 ± 55.8 vs 125 ± 68.9 days; $P = 0.0005$) and from the date of initiation of therapy (78.7 ± 53.2 vs 117.9 ± 68.2 days; $P = 0.0001$) was significantly lower in the study group compared with the control group. However, on subgroup analysis a significant difference in the resolution time was found only in eyes with keratoconus ($P < 0.0001$). No difference in the resolution time was seen in eyes with pellucid marginal corneal degeneration (PMCD) or keratoglobus. The main complication of this procedure was reversible pupillary block (16%; $P < 0.0001$). There was no difference in the final visual acuity or endothelial cell counts between the 2 groups.

Conclusions: Intracameral C_3F_8 gas in a nonexpansile concentration is a useful modality for faster resolution of corneal edema in patients with acute corneal hydrops and keratoconus, and its role in the treatment of PMCD and keratoglobus needs further evaluation.

Financial Disclosure(s): The authors have no proprietary or commercial interest in any materials discussed in this article. *Ophthalmology* 2011;118:934-939 © 2011 by the American Academy of Ophthalmology.

Management of Acute Corneal Hydrops Secondary to Keratoconus With Intracameral Injection of Sulfur Hexafluoride (SF₆)

Panda, Anita MD, FICS, MRCOphth; Aggarwal, Anand MD; Madhavi, Pragati MD, FRCS; Wagh, Vijay B MD, FRCS; Dada, Tanuj MD; Kumar, Abhiyan DOMS; Mohan, Shalini MS

Purpose: To report the use of sulfur hexafluoride (SF₆) gas in the management of corneal edema caused by acute corneal hydrops secondary to keratoconus.

Methods: Nine eyes with acute hydrops secondary to keratoconus managed by SF₆ gas injected into the anterior chamber (group 1) were compared to another 9 eyes that were managed conservatively with conventional medical therapy (group 2).

Results: Of 9 eyes in group 1, 3 had 1 injection, 4 had 2 injections, and the remaining 2 had 3 injections into the anterior chamber. All the eyes in group 1 showed an early resolution of corneal edema at 4 weeks. The same was achieved in group 2 at 12 weeks. The central corneal thickness (CCT) in group 1 and group 2 was >1.0 mm at presentation. The CCT at 3 and 12 weeks in group 1 was 0.99 and 0.65 mm, respectively, whereas CCT in group 2 at 3 weeks was >1.0 mm and at 12 weeks was 0.991 mm ($P = 0.001$). The mean best spectacle-corrected visual acuity (BSCVA) at 12 weeks in group 1 and group 2 was 0.39 and 0.24, respectively ($P = 0.016$). The results were significant in favor of group 1 over group 2 both in CCT and BSCVA.

Conclusion: Early intervention with intracameral SF₆ injection is a safe and effective therapy for early reduction of corneal edema in eyes with keratoconus and acute hydrops.

Predescemetetic Dissection for Healed Hydrops—Judicious Use of Air and Fluid

Hamed Mofeez Anwar, FRCS(Glasg) and Mohammad Anwar, FRCS(Ed)

Purpose: To demonstrate the efficacy of a planned near-Descemet dissection deep anterior lamellar keratoplasty (nddDALK) in posthydrops corneal scarring.

Methods: In a retrospective noncomparative case series, nddDALK was performed on 22 consecutive eyes of 22 patients with posthydrops scarring because of keratoconus. After a partial thickness corneal trephination, air was injected at superficial to midstromal depth, followed by an anterior keratectomy. Multiple episodes of stromal hydration with a blunt cannula followed by air injection were repeated to leave a thin stromal layer. A #69 Beaver blade (BD, Franklin Lakes, NJ) was used to remove the scar. The best spectacle-corrected visual acuity (BSCVA), spherical equivalent, and refractive cylinder were recorded 12, 24, and 36 months after surgery. Intraoperative and postoperative complications were noted.

Results: Twelve months after surgery, the BSCVA was $\geq 20/40$ in 68.1% of patients. The mean spherical equivalent was -3.53 ± 2.94 diopters (D), and the average refractive cylinder was 3.42 ± 1.7 D. Microperforations occurred in 6 patients, all of which were successfully tamponaded by an intracameral air injection alone.

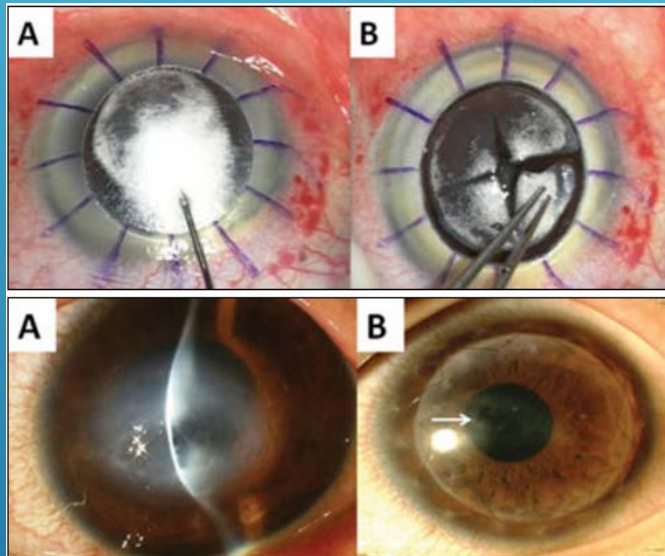
Conclusions: nddDALK gives good visual results and quality of vision. In developing countries, lamellar-grade donor corneas are almost the only option available. Apart from visual benefits, the procedure puts the patient at a minimal risk of immune rejection, which is a major complication of penetrating keratoplasty.

Key Words: deep anterior lamellar keratoplasty, DALK, penetrating keratoplasty, PKP, keratoconus, hydrops

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Outcomes of deep anterior lamellar keratoplasty in keratoconic eyes with previous hydrops

Mayank A Nanavaty,¹ Sheraz M Daya^{1,2}



ABSTRACT

Aim To evaluate outcomes of deep anterior lamellar keratoplasty (DALK) in keratoconic eyes with previous hydrops.

Methods In this retrospective, non-comparative study, keratoconic eyes with previous hydrops that underwent DALK were included. DALK was performed using a modification of Melles's technique of optical recognition with pre-Descemet's membrane dissection. Data on preoperative and postoperative uncorrected distance visual acuity and best spectacle corrected distance visual acuity (BSCVA), postoperative spherical equivalent (SEQ); keratometry and adverse events were recorded for all eyes.

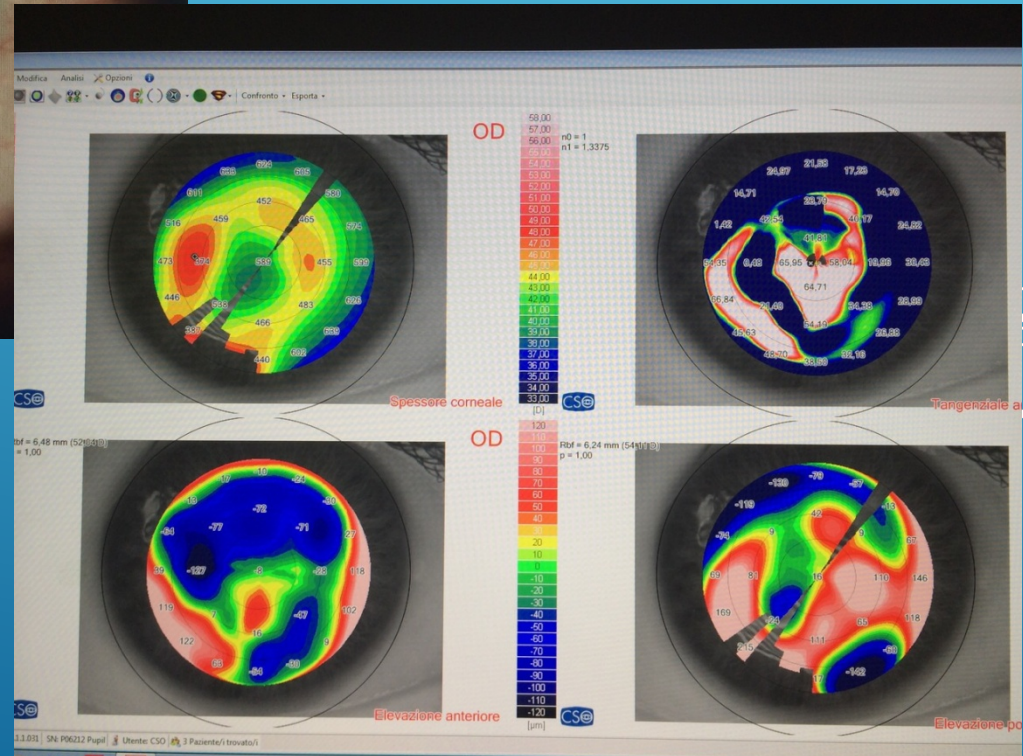
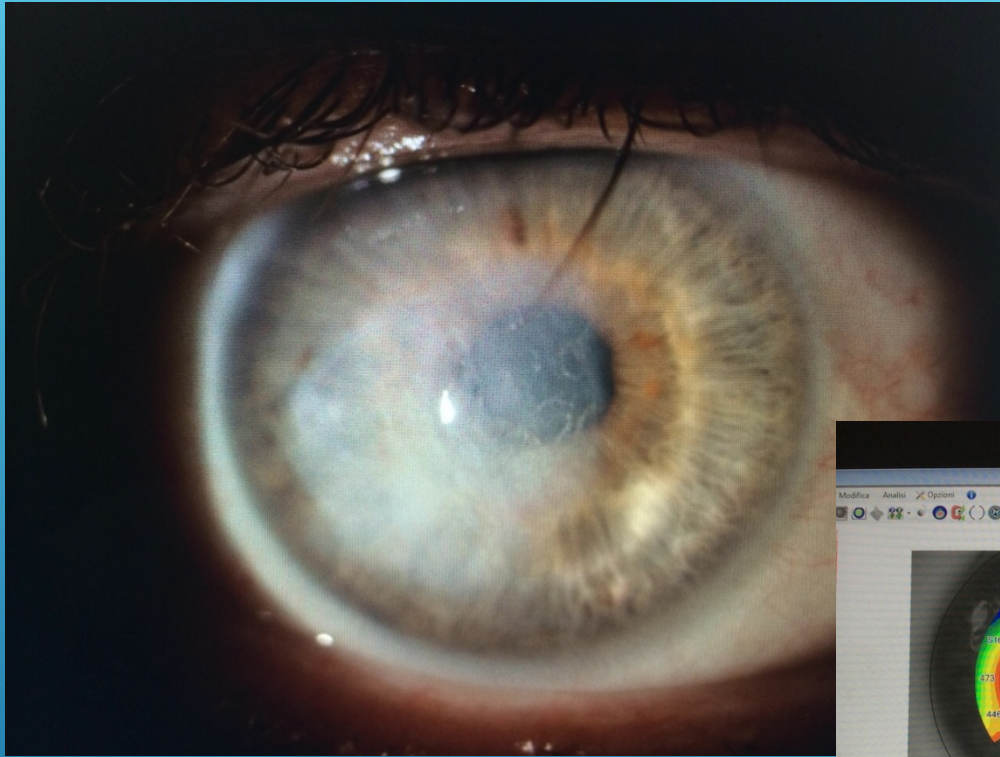
Results Ten eyes (10 patients) underwent DALK in keratoconic eyes with previous hydrops. Mean follow-up was 56.4 ± 23.8 months. Preoperatively BSCVA was 6/24 or worse in all eyes. At last follow-up, 100% had BSCVA of 6/12 or better. Intraoperative microperforation at the site of previous hydrops occurred in six eyes but none required conversion to penetrating keratoplasty. At latest follow-up, mean SEQ was -2.4 ± 4.2 D, keratometric astigmatism was 3.8 ± 1.6 D and refractive astigmatism was 3.4 ± 2.2 D. Mean postoperative keratometry was 43.7 ± 2.6 and central pachymetry 572.6 ± 65.0 μm .

Conclusions DALK in keratoconic corneas with prior hydrops is a safe and effective option that preserves host endothelium. Intraoperative microperforations at the site of hydrops are common, however with good management favourable outcomes are possible.

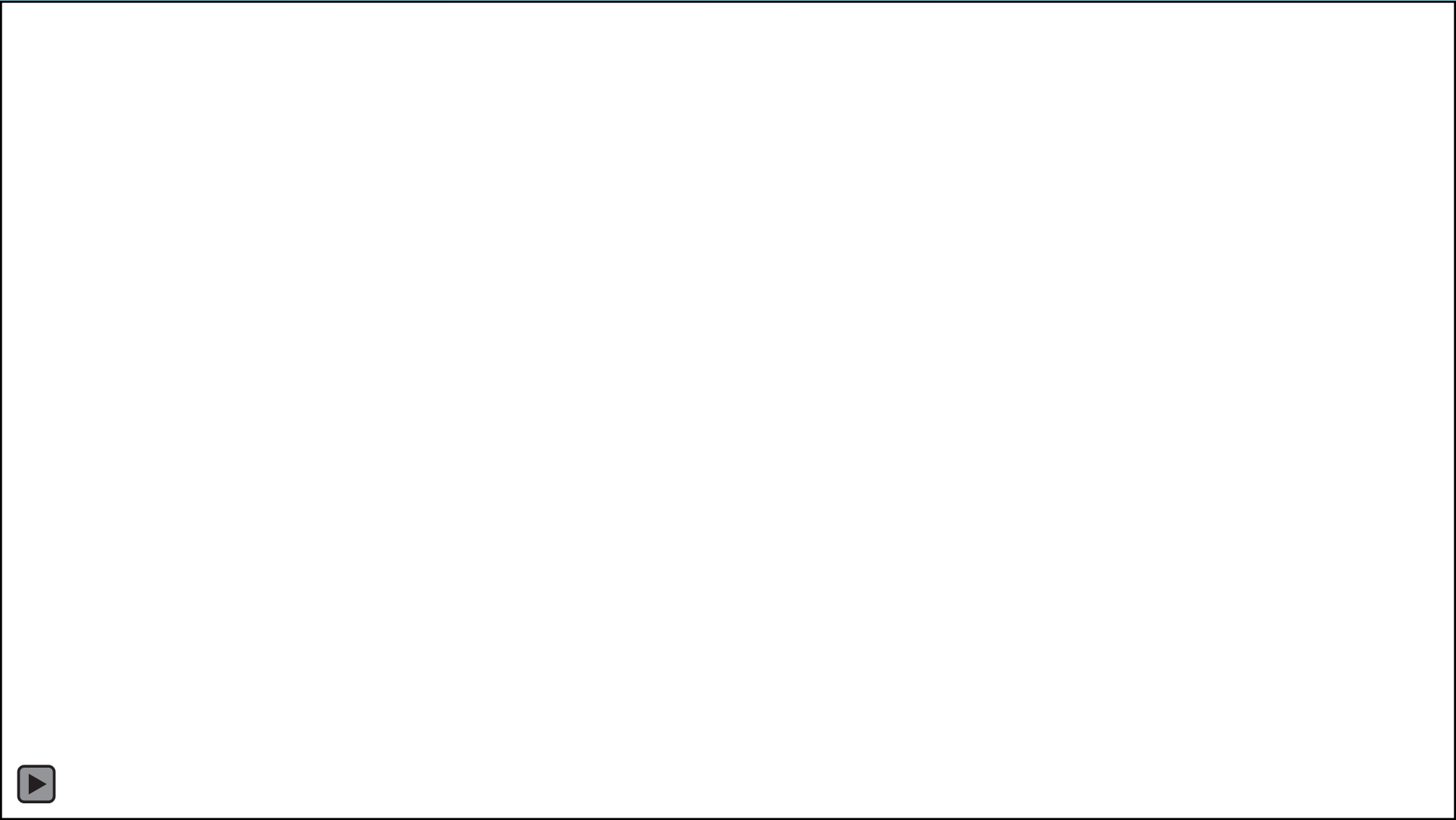
BR J OPHTHALMOLOGY
2012;96(10):1304-1309

CASO CLINICO 1

- **UOMO**
- **30 AA**
- **PREGRESSO IDROPE ACUTO IN
CHERATOCONO**
- **ESITO IN CICATRICE DOPO 3 MESI:
AV = 1/20**
- **PK IN ELEZIONE**







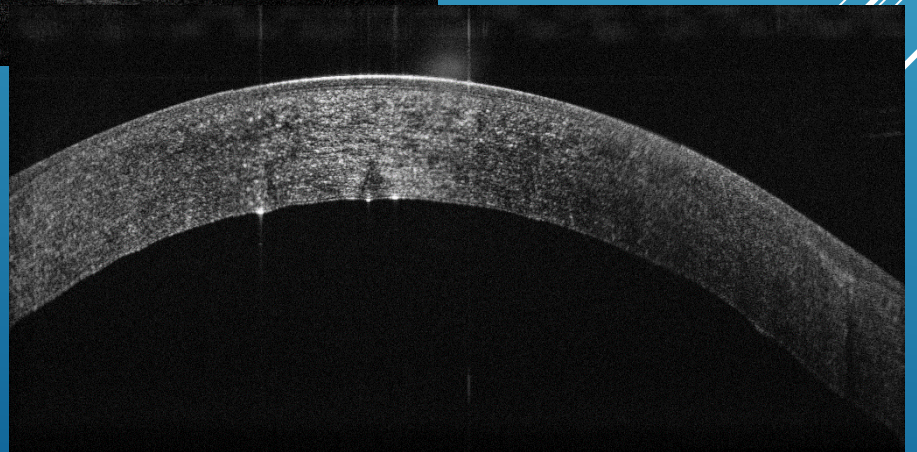
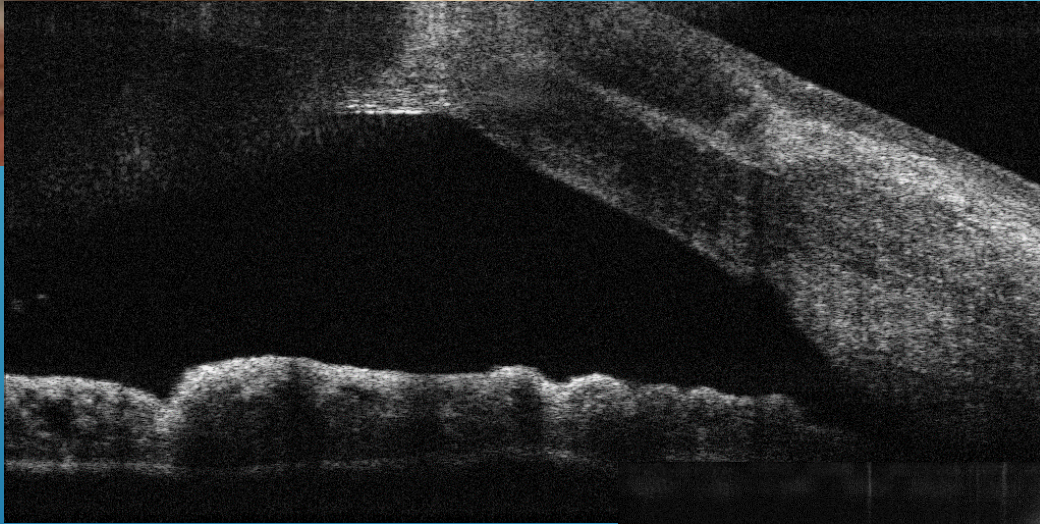
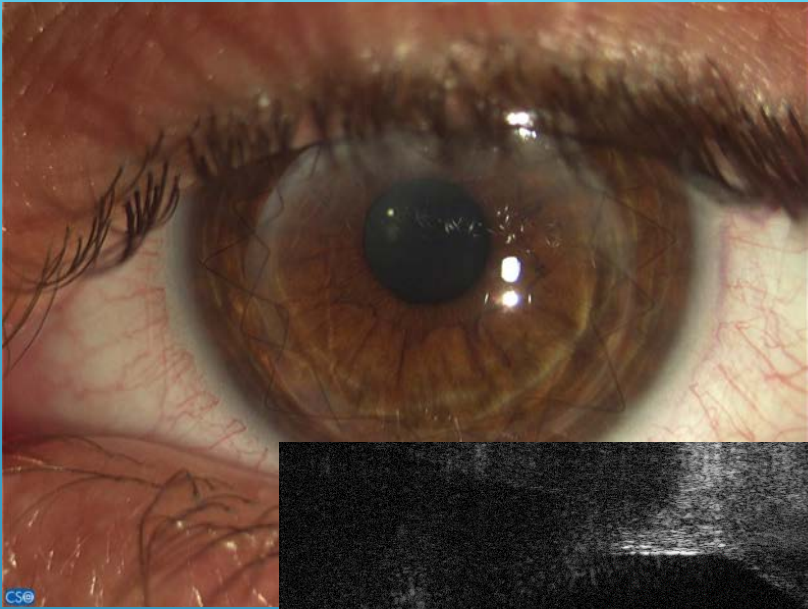
CASO CLINICO 1

- Uomo
- 30 AA
- PREGRESSO IDROPE ACUTO IN CHERATOCONO
- ESITO IN CICATRICE DOPO 3 MESI: AV = 1/20
- PK IN ELEZIONE
- RISULTATO FUNZIONALE 8/10 CYL +2.00 @ 160

CASO CLINICO 2

- **UOMO**
 - **34 AA**
 - **IDROPE ACUTO CON PERFORAZIONE E LEAKAGE APICALE IN CHERATOCONO**
 - **PK IN URGENZA**
- 





▶ **CASO CLINICO 2**

▶ **UOMO**

▶ **34 AA**

▶ **IDROPE ACUTO CON PERFORAZIONE E
LEAKAGE APICALE IN CHERATOCONO**

▶ **PK IN URGENZA**

▶ **RISULTATO FUNZIONALE 5/10 CYL -2.50
(70°)**

► CONCLUSIONI

- ***L'IDROPE ACUTA É UNA COMPLICANZA RARA DEL CHERATOCONO CHE RICHIEDE TALVOLTA UN TRATTAMENTO CHIRURGICO IN URGENZA.***
- ***IN LETTERATURA SOLO ALCUNI STUDI RETROSPETTIVI O CASE SERIES***
- ***PK É CONSIDERATA DA ALCUNI LA TECNICA CHIRURGICA GOLD STANDARD***
- ***NELLA NOSTRA ESPERIENZA LA PK SI É MOSTRATA UNA TECNICA CHIRURGICA SICURA E CON UN BUON OUTCOME FUNZIONALE***
- ***NECESSARI FUTURI STUDI COMPARATIVI SU CAMPIONI AMPII E CON FOLLOW-UP PIÙ LUNGHI .***

GRAZIE PER L'ATTENZIONE

