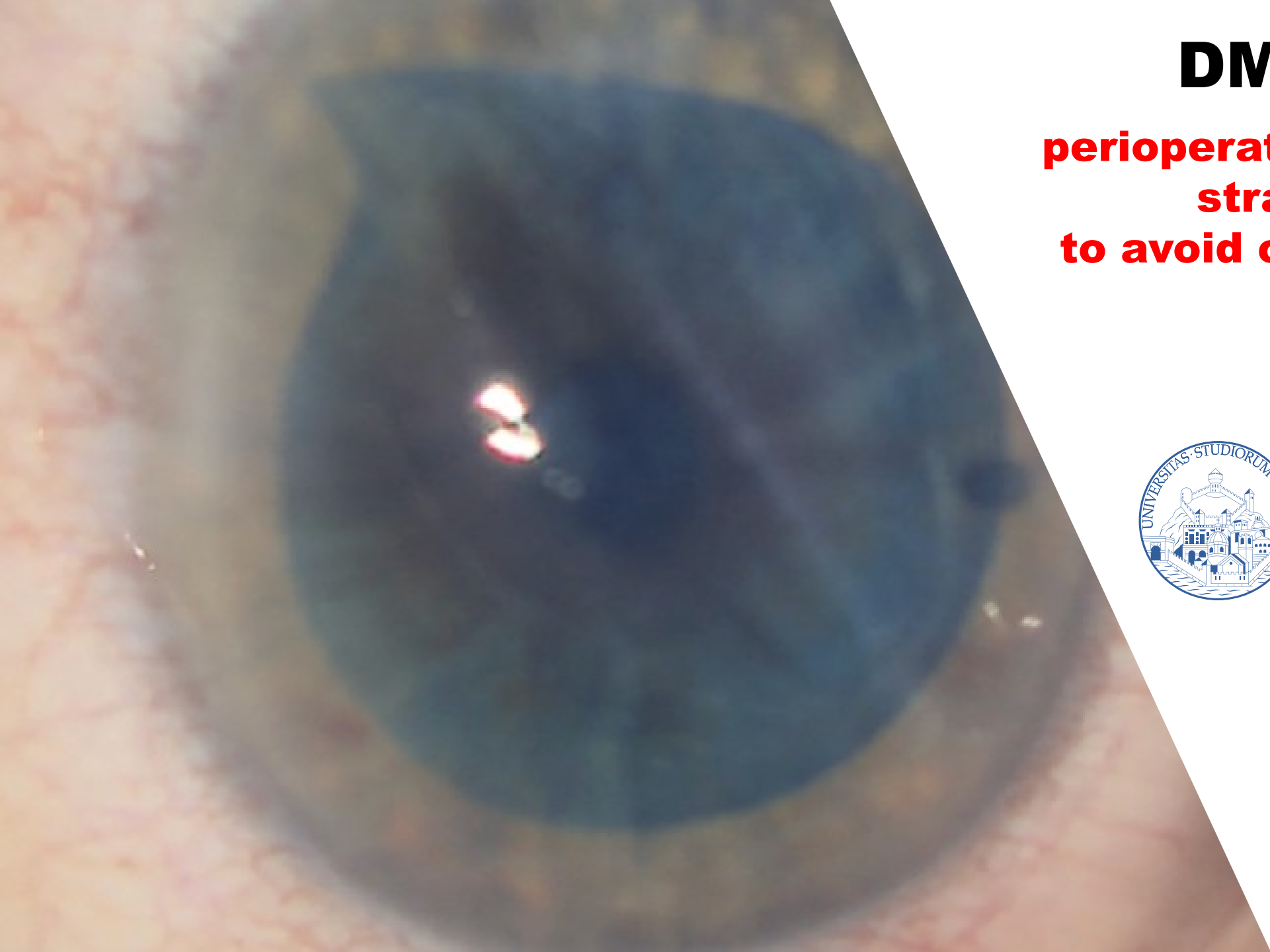




DMEK

**perioperative & surgical
strategies
to avoid complications**



UNIVERSITY
OF BRESCIA

Prof. Vito Roman

No financial interest
related to the topic

PRE-OP

**SURGICAL
TECHNIQU
E**

POST-OP

PRE-OP

CLINICAL OEDEMA

POSTERIOR STROMAL RIPPLES & Stromal Hyperreflectivity

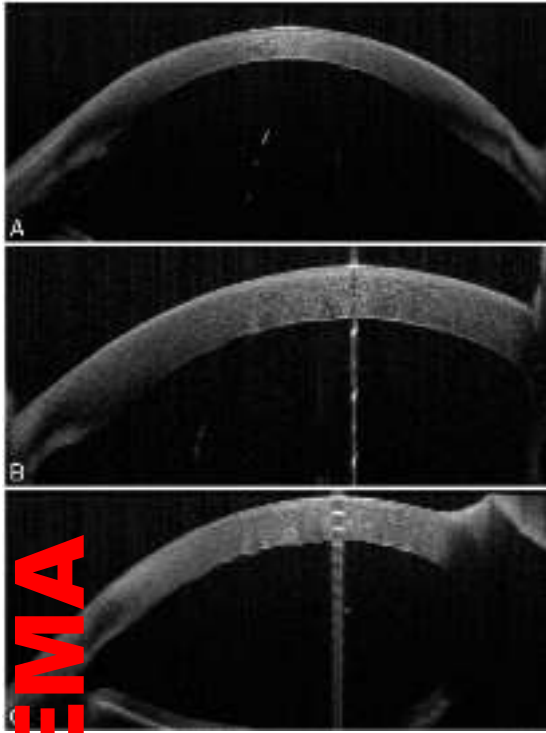
Preoperative Posterior Stromal Ripples as Predictive
Biomarkers of Visual Recovery After DMEK

Mariacarmela Ventara, MD,*† Matteo Airaldi, MD,†§§ Chiara Ancona, MD,* Enrico Neri, MD,||
Erika Bonucci, MD,† Emilio Pedroni, MD,† Alfredo Borgia, MD,§ Matteo Pasarelli, MD,§
Hannah J. Lewis, PhD,§ Francesco Semeraro, MD,* Stephen B. Kaye, MD, PhD,§§
Pietro Viola, MD,|| and Vito Romano, MD*§§

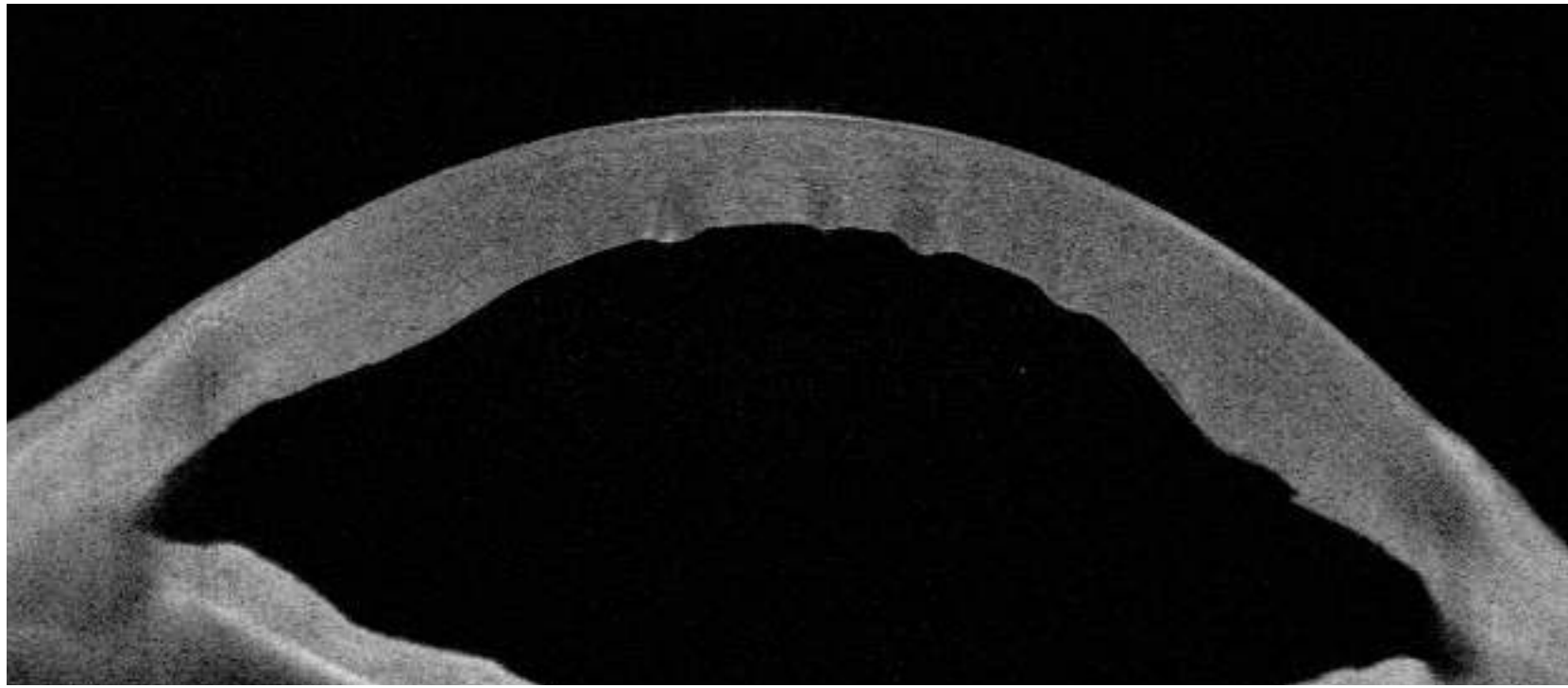
PRE-OP

CLINICAL CORNEAL

EDEMA

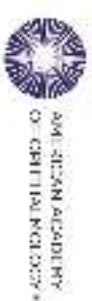
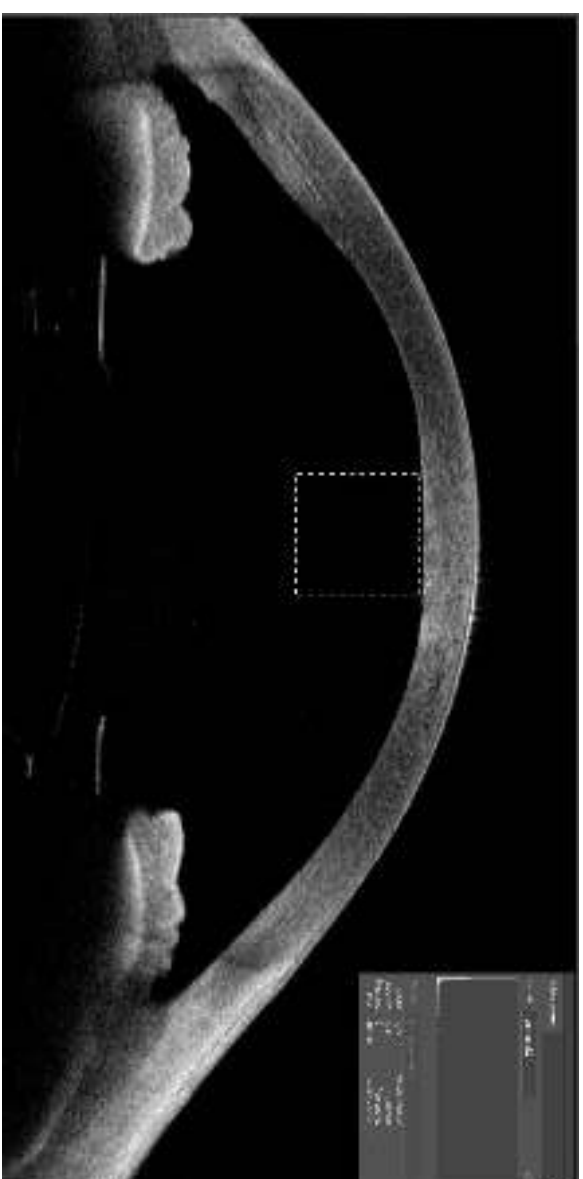
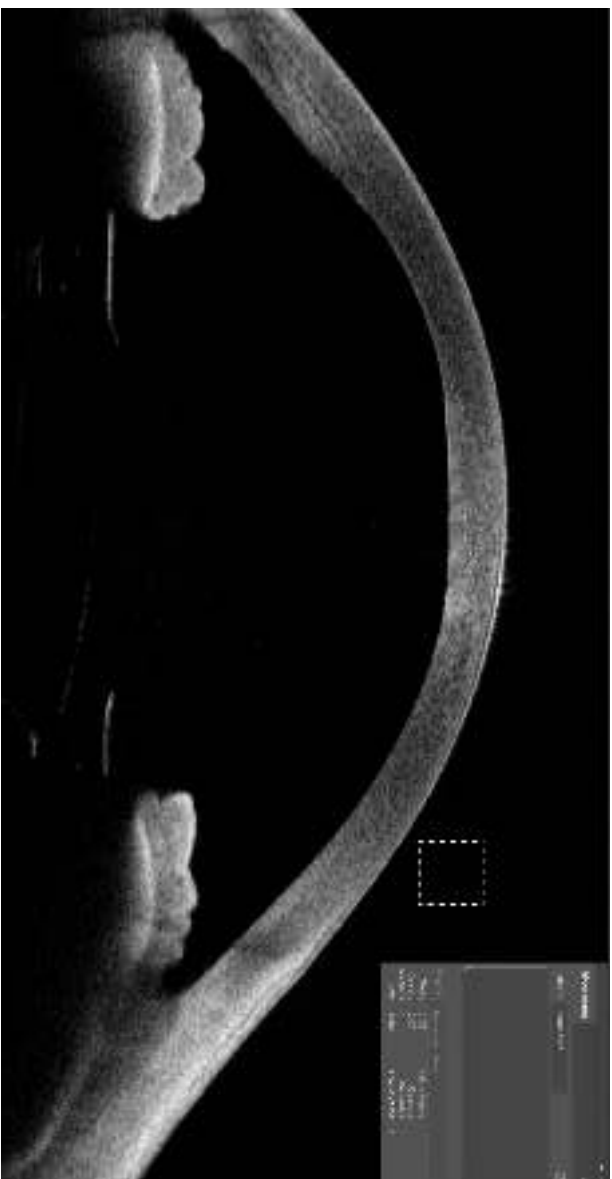


Coco & Romano et al Acta 2022



**Posterior stromal
ripples**

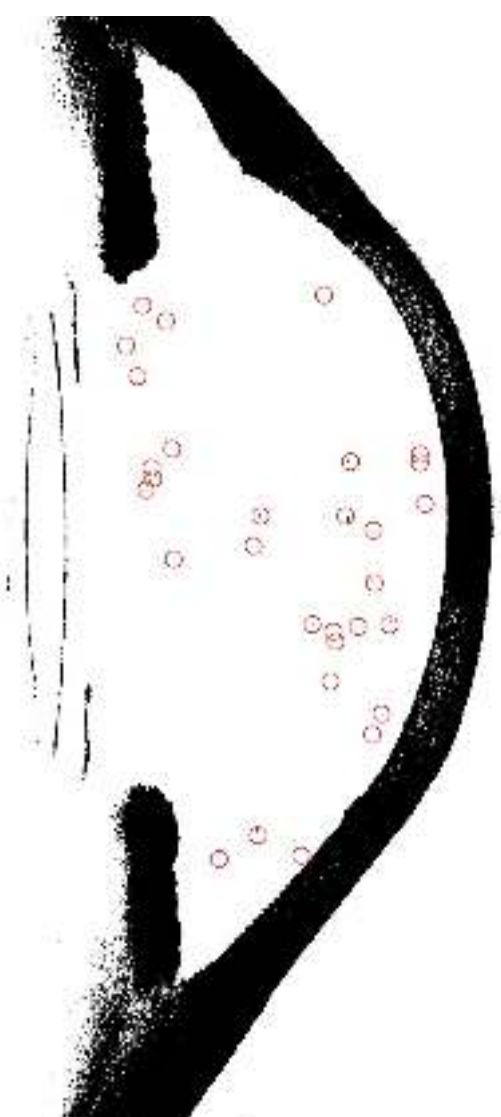
PRE-OP AC-CELLS & ARI



Anterior Chamber Inflammation and Descemet Membrane Endothelial Keratoplasty

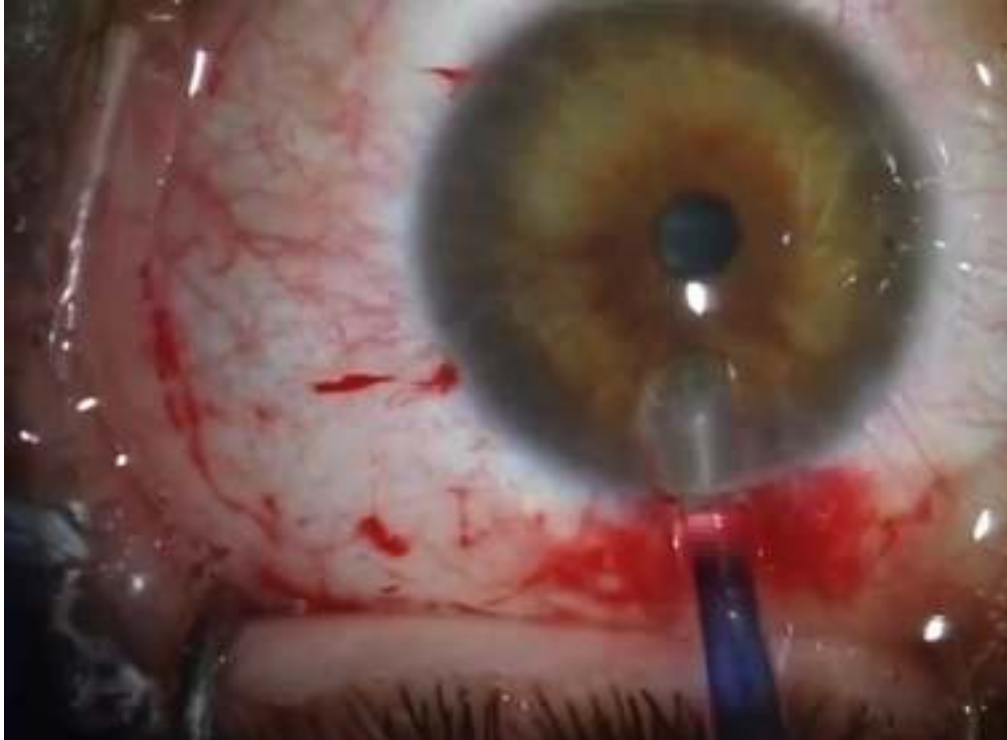
An Anterior Segment-OCT-Based Analysis

Sabrina Vaccaro, MD,^{1,*} Giacinto Besci, MD,^{2,*} Paolo Comissov, MD,² Matteo Arnoldi, MD,² Miroslava Venturoli, MD,² Francesco Semerario, MD,¹ Vito Raimmo, MD,^{1,2}



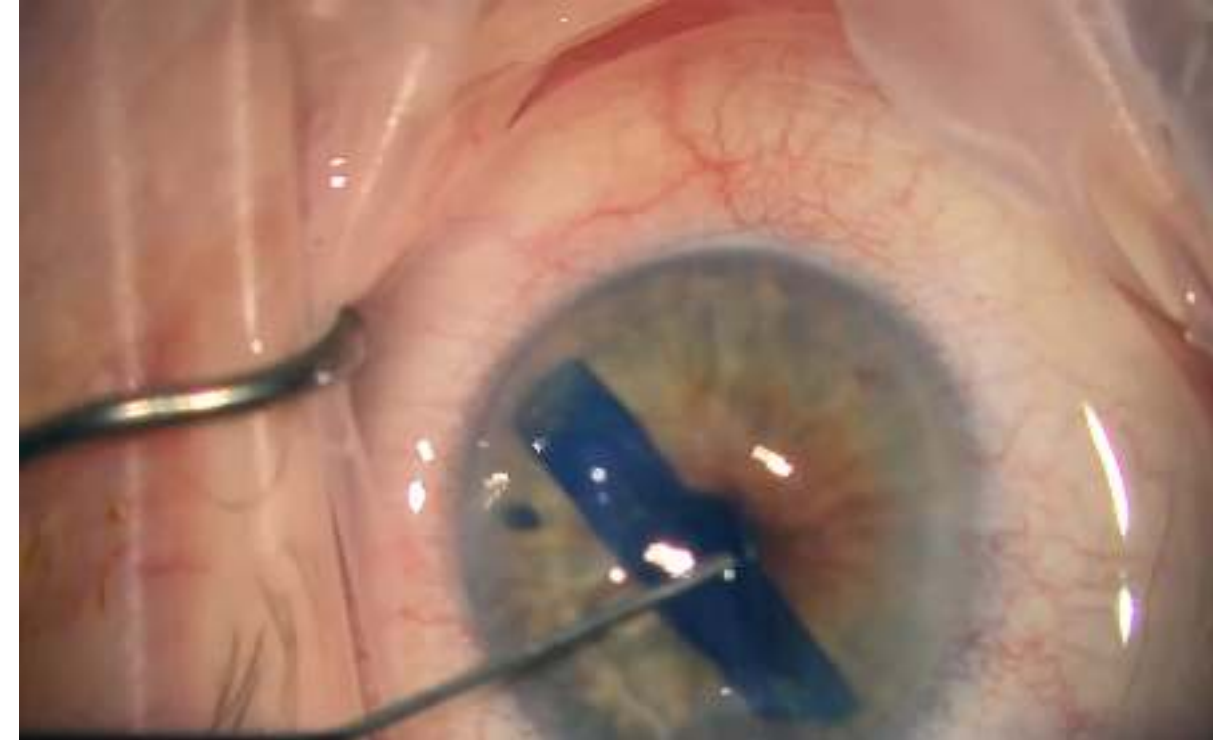
DMEK graft: One size does not fit all

Mohit Parekh¹ | Davide Romano² | Rintra Wongvisavavit^{3,4} | Giulia Coco⁵ |
 Giuseppe Giannaccare⁶ | Stefano Ferrari⁷ | Carlos Rocha-de-Lossada^{8,9,10} |
 Hannah J. Lewis¹¹ | Francesco Semeraro² | Marina Rodríguez Calvo-de-Mora^{8,9,12} |
 Vincenzo Scorcía⁶ | Vito Romano²



Grafts (>8.5 mm)

- More endothelial cells, potential longer survival
- Indicated in PBK, myopic/buphthalmic eyes
- Higher detachment/rebubbling rates



Grafts (7.5 -8.5 mm)

- Useful in narrow AC, glaucoma devices, failed PK
- Most widely used (~93% of surgeons).
- Balanced handling, survival, complication

INTRA-OP

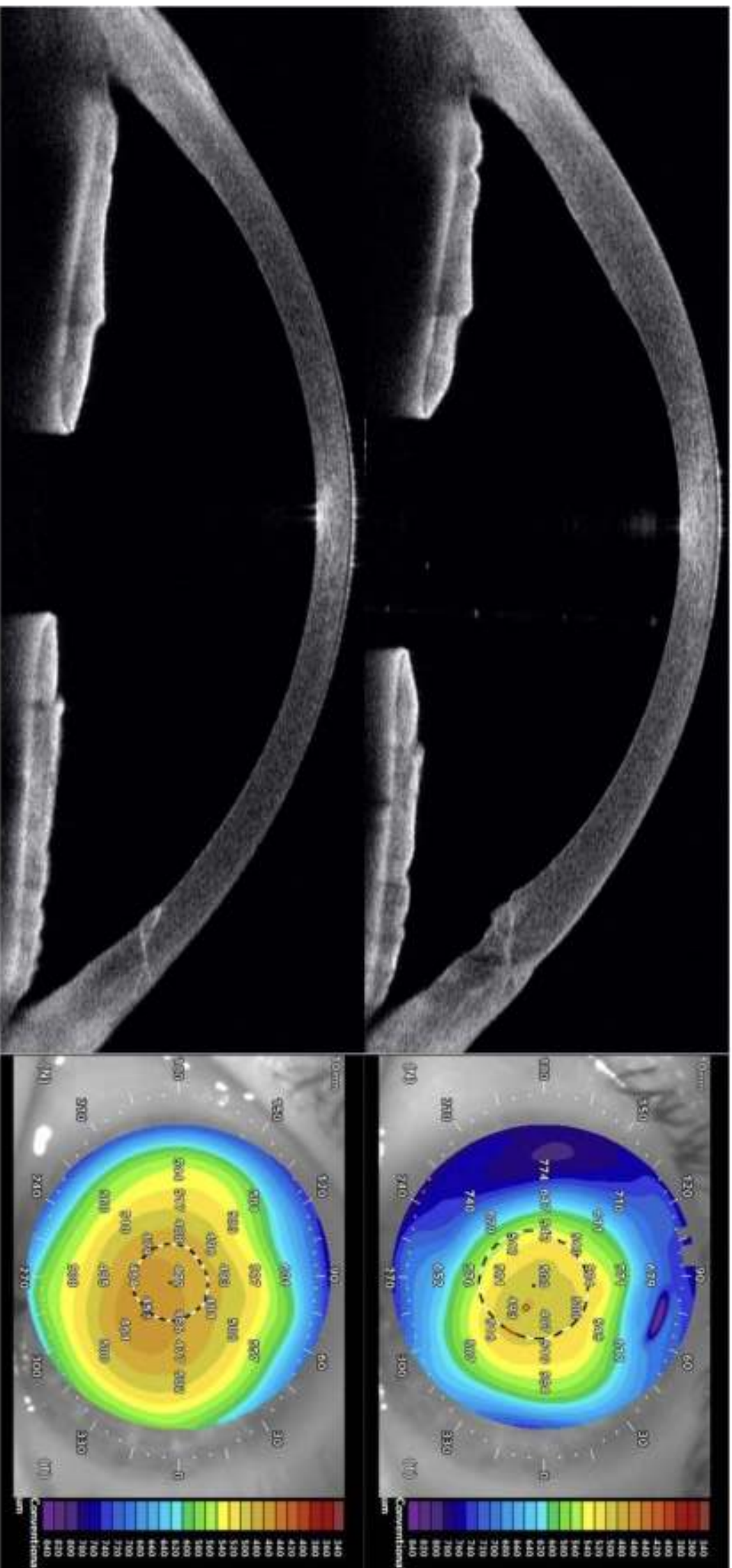
DMEK centration

Off-Centered DMEK Grafts: Impact and Resolution

Vito Romano, MD, Matteo Airaldi, MD,*[†] Davide Romano, MD,* Francesco Miglio, MD,**

Alfredo Borgia, MD,[†] Mohi Parekh, PhD,[‡] Francesco Semeraro, MD, and*

Nicolas Cesário Pereira, MD§



INTRA-OP

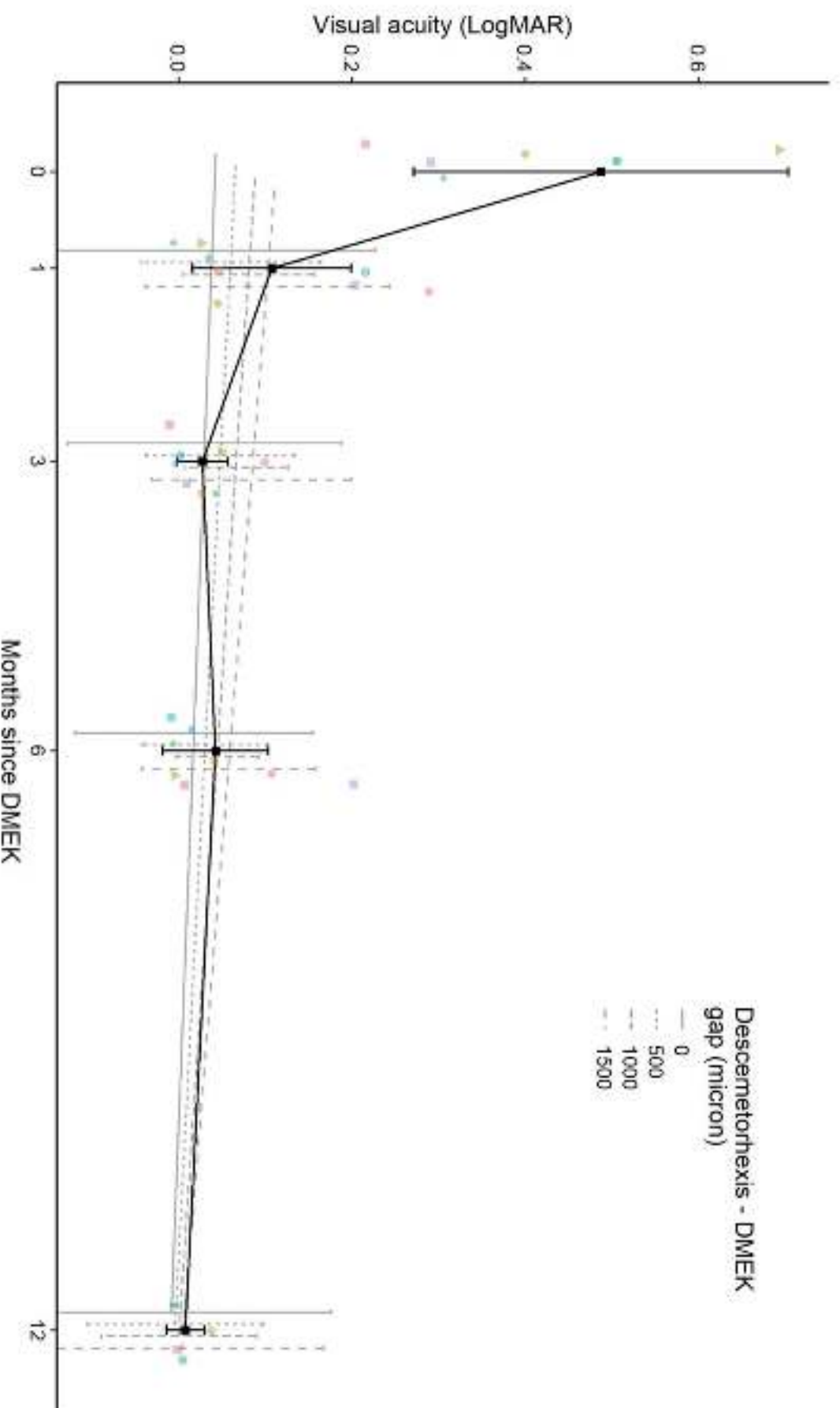
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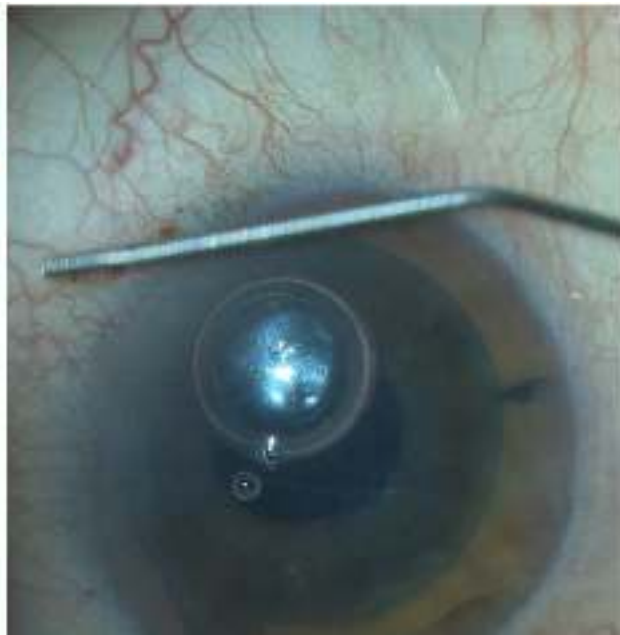
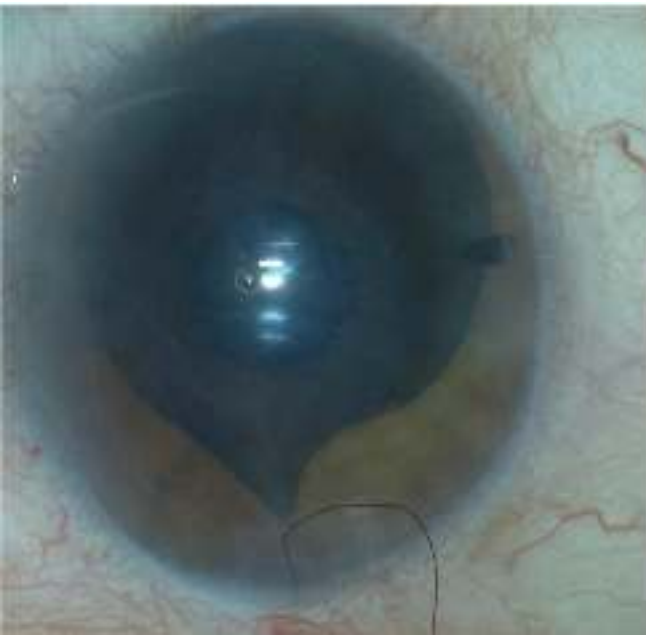
Alfredo Borgia, MD,† Mohit Parekh, PhD,‡ Francesco Semeraro, MD, and*

Nicolas Cesário Pereira, MD§



Off-Centered DMEK Grafts: Impact and Resolution

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Nicolas Cesário Pereira, MD§*



INTRA-OP

DMEK centration

Off-Centered DMEK Grafts: Impact and Resolution

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INTRA-OP

DMEK centration

Off-Centered DMEK Grafts: Impact and Resolution

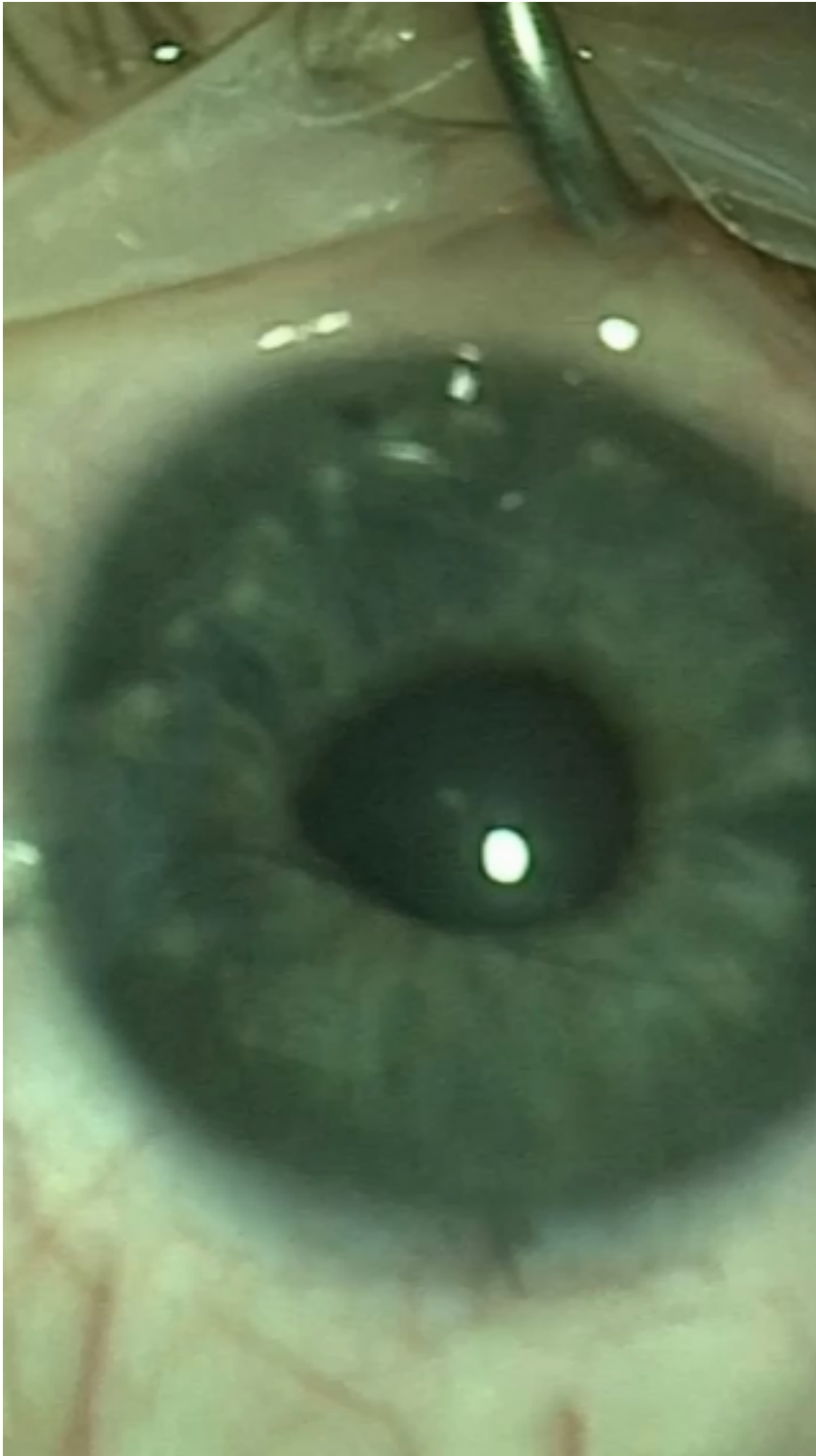
Vito Romano, MD, Matteo Airaldi, MD,*† Davide Romano, MD,* Francesco Miglio, MD,**

Alfredo Borgia, MD,† Mohit Parekh, PhD,‡ Francesco Semeraro, MD, and*

Nicolas Cesário Pereira, MD§

INTRA-OP

DM-rhexis and DMEK

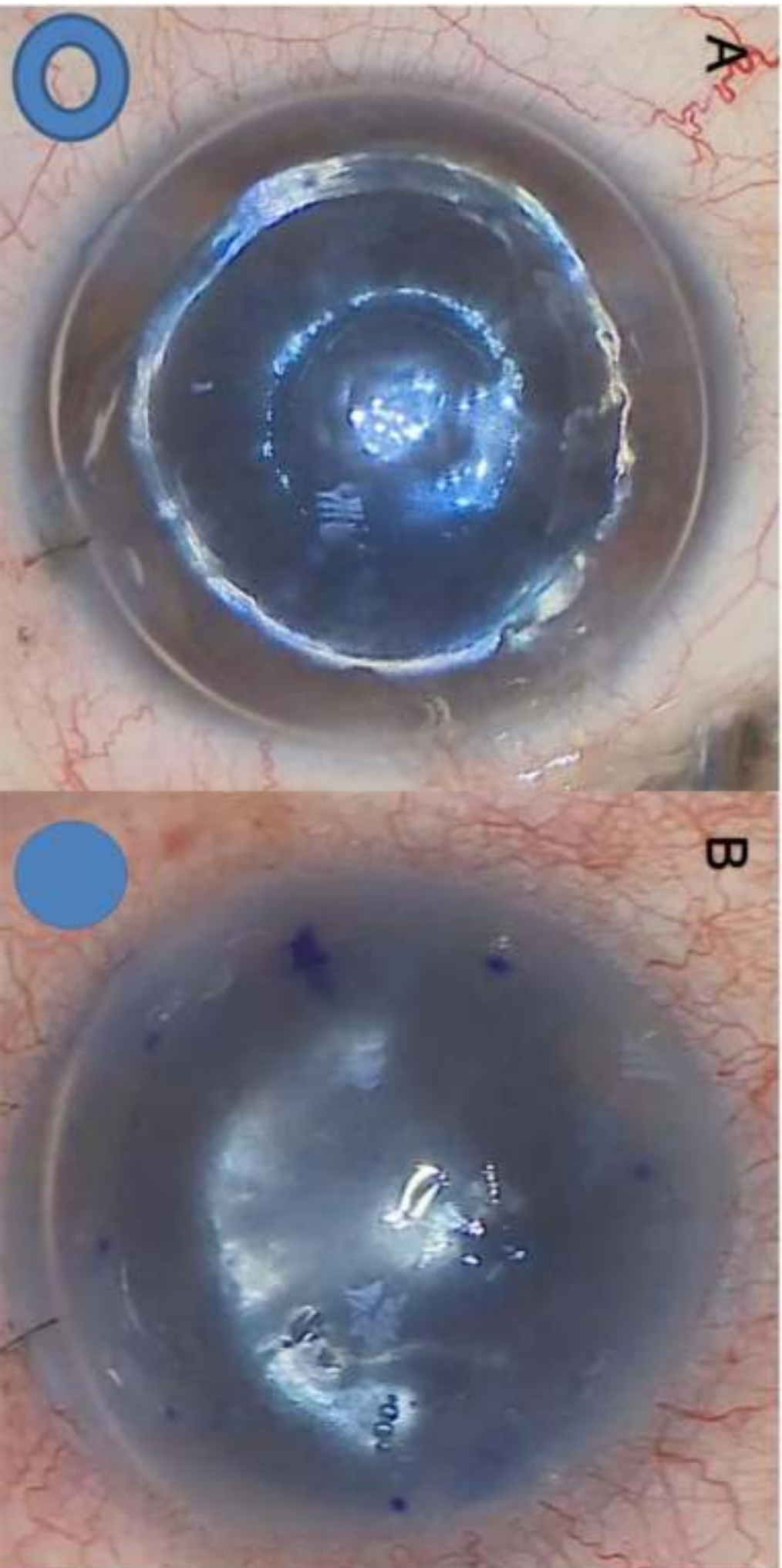


INTRA-OP

DMEK air injection

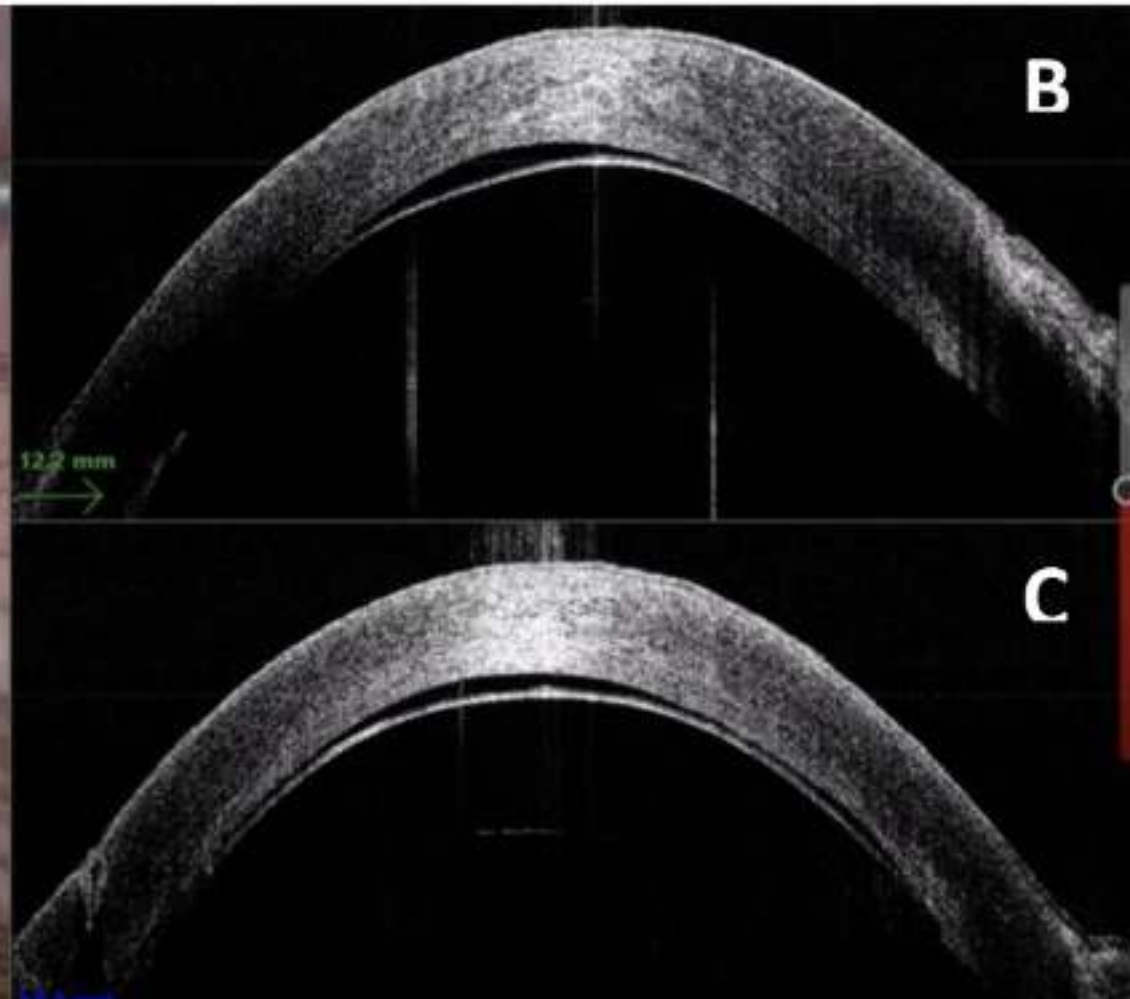
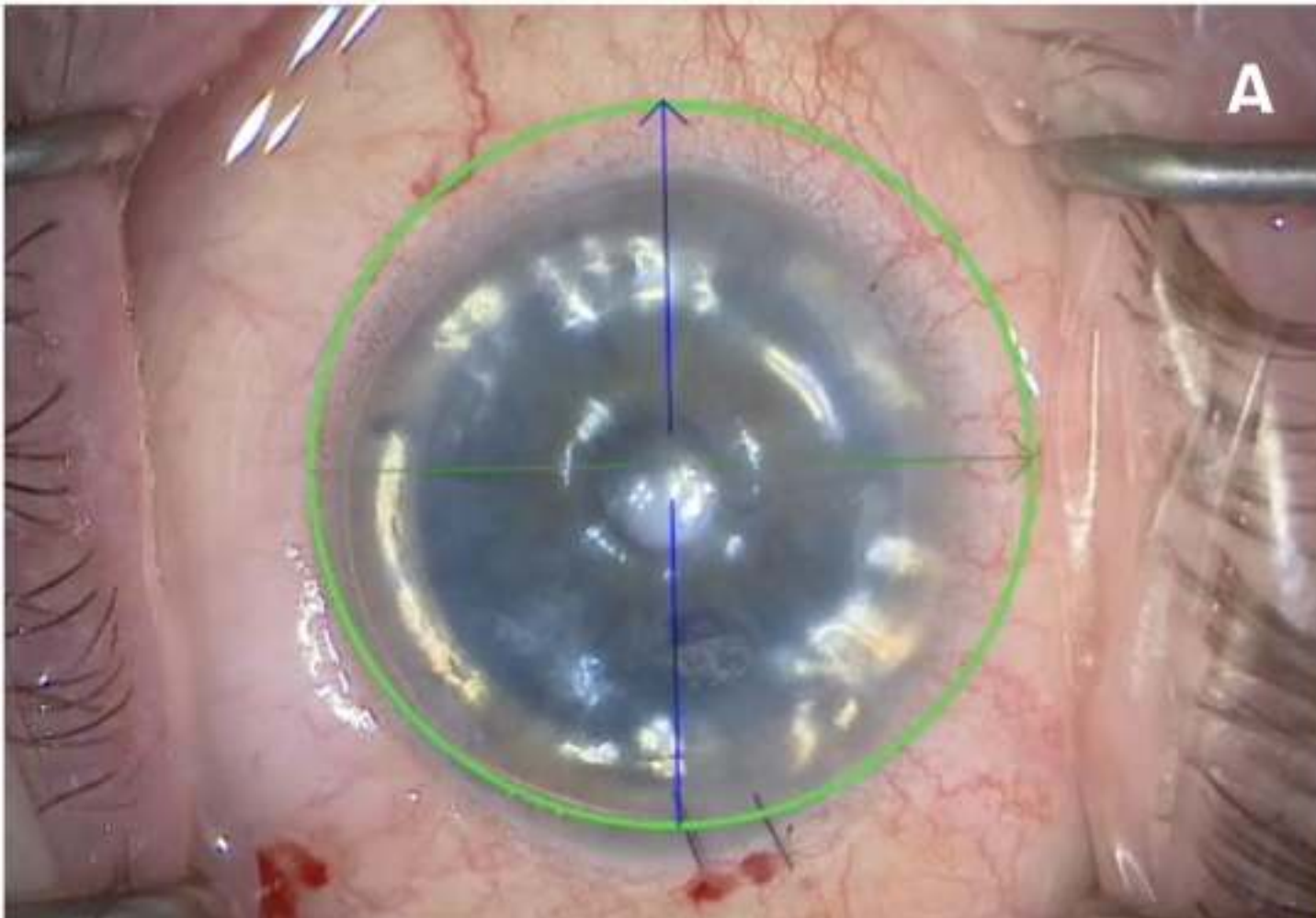
Bagel sign and how to avoid it in DMEK surgery

Luca Pagano^{1,2} , Fadi Alfaqawi¹, Alfredo Borgia¹ ,
Francesco Aiello³ , Matteo Airaldi^{4,5}, Stephen B Kaye¹
and Vito Romano^{4,5} 



Bagel sign and how to avoid it in DMEK surgery

Luca Pagano^{1,2} , Fadi Alfaqawi¹, Alfredo Borgia¹ ,
Francesco Aiello³ , Matteo Airaldi^{4,5}, Stephen B Kaye¹
and Vito Romano^{4,5} 



INTRA-OP

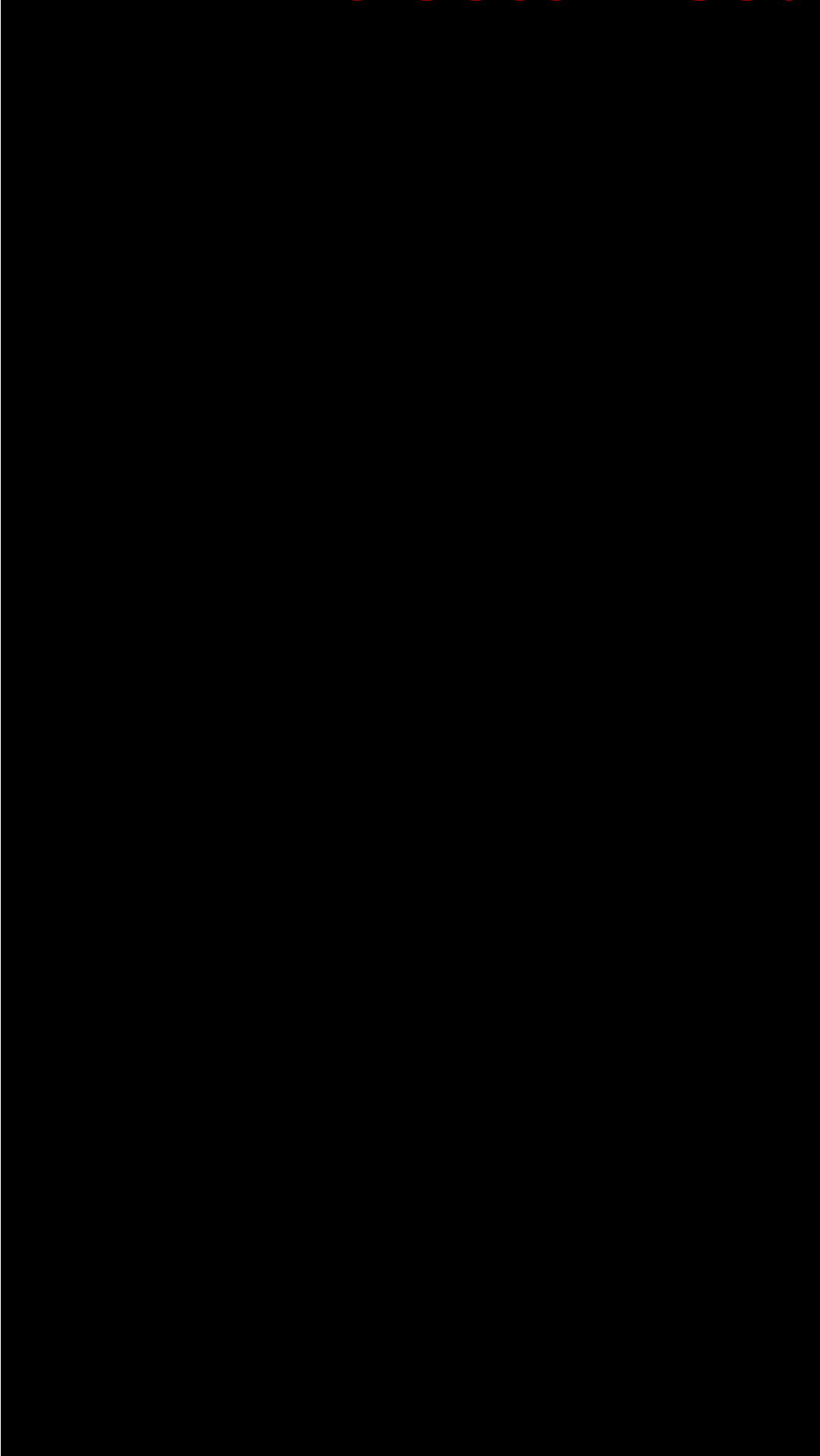
DMEK air injection

Bagel sign and how to avoid it in DMEK surgery

Luca Pagano^{1,2} , Fadi Alfaqawi¹, Alfredo Borgia¹ ,
Francesco Aiello³ , Matteo Airaldi^{4,5}, Stephen B Kaye¹
and Vito Romano^{4,5} 

Efficacy of Sutureless Scleral Fixation of One-Piece T-Shaped Haptic Intraocular Lens in Maintaining Anterior Chamber Stability During Descemet Membrane Endothelial Keratoplasty in Vitrectomized Eyes: Leak Test and Iris Diaphragm Reconstruction

Agostino Salvatore Vajano ^{1,*}, Antonio Greco ¹, Maria Marengo ¹, Andrea Greco ¹, Alessandro De Filippis ¹, Fabio Garavelli ¹, Riccardo Merli ¹ and Vito Romano ²



Descemet's membrane endothelial keratoplasty (DMEK) versus Descemet's stripping automated endothelial keratoplasty (DSAEK) for corneal endothelial failure (Review)

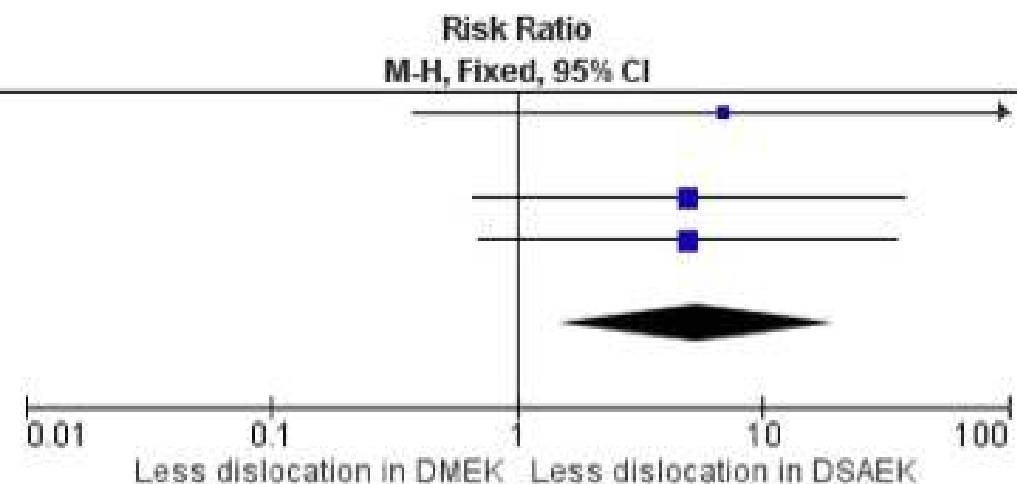
Shortt AJ, Romano V, Virgili G, Shortt AJ

Study or Subgroup	DMEK		DSAEK		Weight	Risk Ratio M-H, Fixed, 95% CI
	Events	Total	Events	Total		
Bandari 2015	3	30	0	30	20.0%	7.00 [0.38, 129.93]
Goldich 2015	0	17	0	17		Not estimable
Guerra 2011	5	15	1	15	40.0%	5.00 [0.66, 37.85]
Water 2015b	5	10	1	10	40.0%	5.00 [0.70, 35.50]
Total (95% CI)		72		72	100.0%	5.40 [1.51, 19.27]

Total events: 13 (DMEK) vs 2 (DSAEK)
 Heterogeneity: $\chi^2 = 0.04$, $df = 2$ ($P = 0.98$); $I^2 = 0\%$
 Test for overall effect: $Z = 2.60$ ($P = 0.009$)

Graft detachment and rebubbling rate in Descemet membrane endothelial keratoplasty

Mohit Parekh, PhD^{a,b,*}, Pia Leon, MD^{c,d,e}, Alessandro Ruzza, BSc^a, Davide Borroni, MD^{f,g}, Stefano Ferrari, PhD^a, Diego Ponzin, MD^a, Vito Romano, MD^h



AVOID ADDITIONAL ENDOTHELIAL CELLULAR STRESS >>> rebubble only if

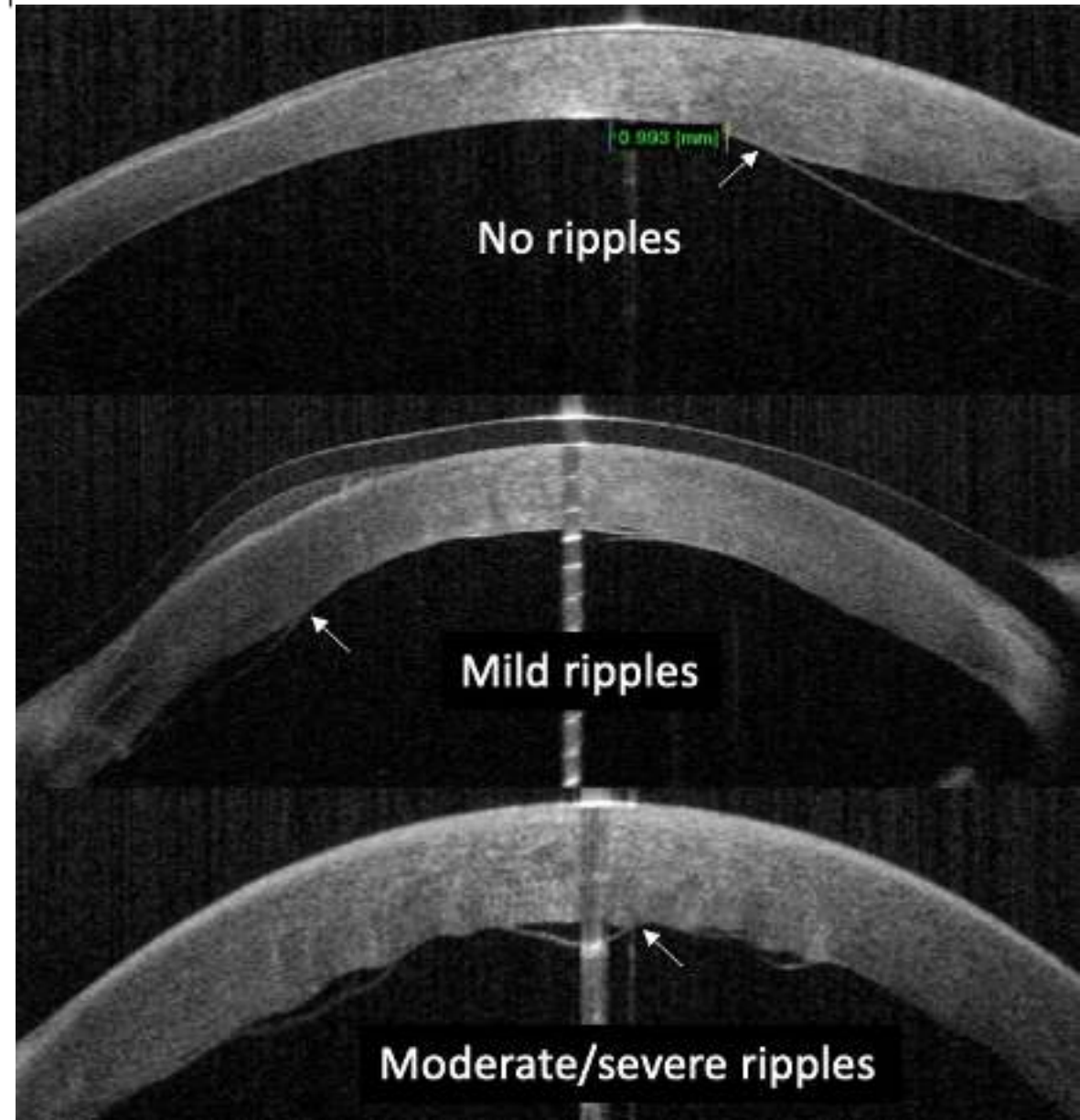
Posterior stromal ripples increase risk of Descemet's membrane endothelial keratoplasty graft detachment worsening over time

Giulia Coco^{1,2} | Hannah J. Levis³ | Alfredo Borgia¹ | Davide Romano¹ |
Luca Pagano¹ | Gianni Virgili⁴ | Stephen B. Kaye^{1,3} | Vito Romano^{1,3,5,6}

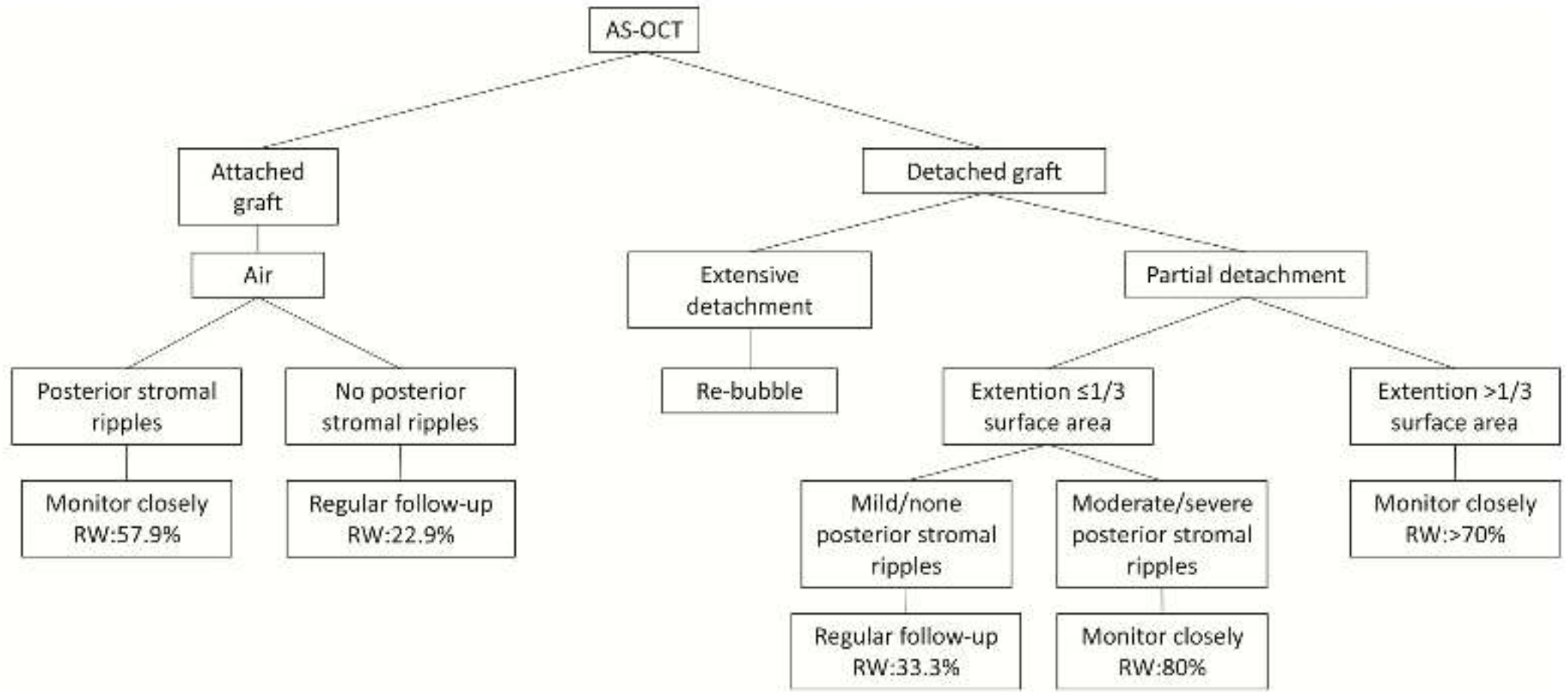
POSTERIOR STROMAL RIPPLES
are an irregularity in the posterior
corneal profile

• Increased the risk of graft
detachment worsening by 75%
(RR: 1.75)

• Overcome the protective value of
detachment extension $<1/3$



DETACHMENT & REBUBBLING



AVOID ADDITIONAL ENDOTHELIAL CELLULAR STRESS >>> rebubble on

Thank you

