

# Sutureless Tectonic Mini-Descemet's Stripping Automated Endothelial Keratoplasty ('mini-DSAEK') for the management of corneal perforations

Mr Ahmed Roble FRCOphth BSc MBBS

Senior Post-CCT Cornea Fellow

Mr James Myerscough

Southend University Hospital, United Kingdom



	Advantages	Disadvantages
Cyanoacrylate glue	<ul style="list-style-type: none"> <li>Performed by a generalist</li> <li>Less invasive</li> <li>Quick</li> <li>Cheap</li> </ul>	<ul style="list-style-type: none"> <li>Temporary measure</li> <li>Higher re-gluing rates</li> </ul>
Tectonic keratoplasty	<ul style="list-style-type: none"> <li>Seals with tissue</li> </ul>	<ul style="list-style-type: none"> <li>Astigmatism</li> <li>Suture related problems</li> <li>More invasive</li> </ul>
Therapeutic keratoplasty	<ul style="list-style-type: none"> <li>Treatment and visual rehabilitation combined</li> </ul>	<ul style="list-style-type: none"> <li>Hot eye complications</li> </ul>

# Case 1

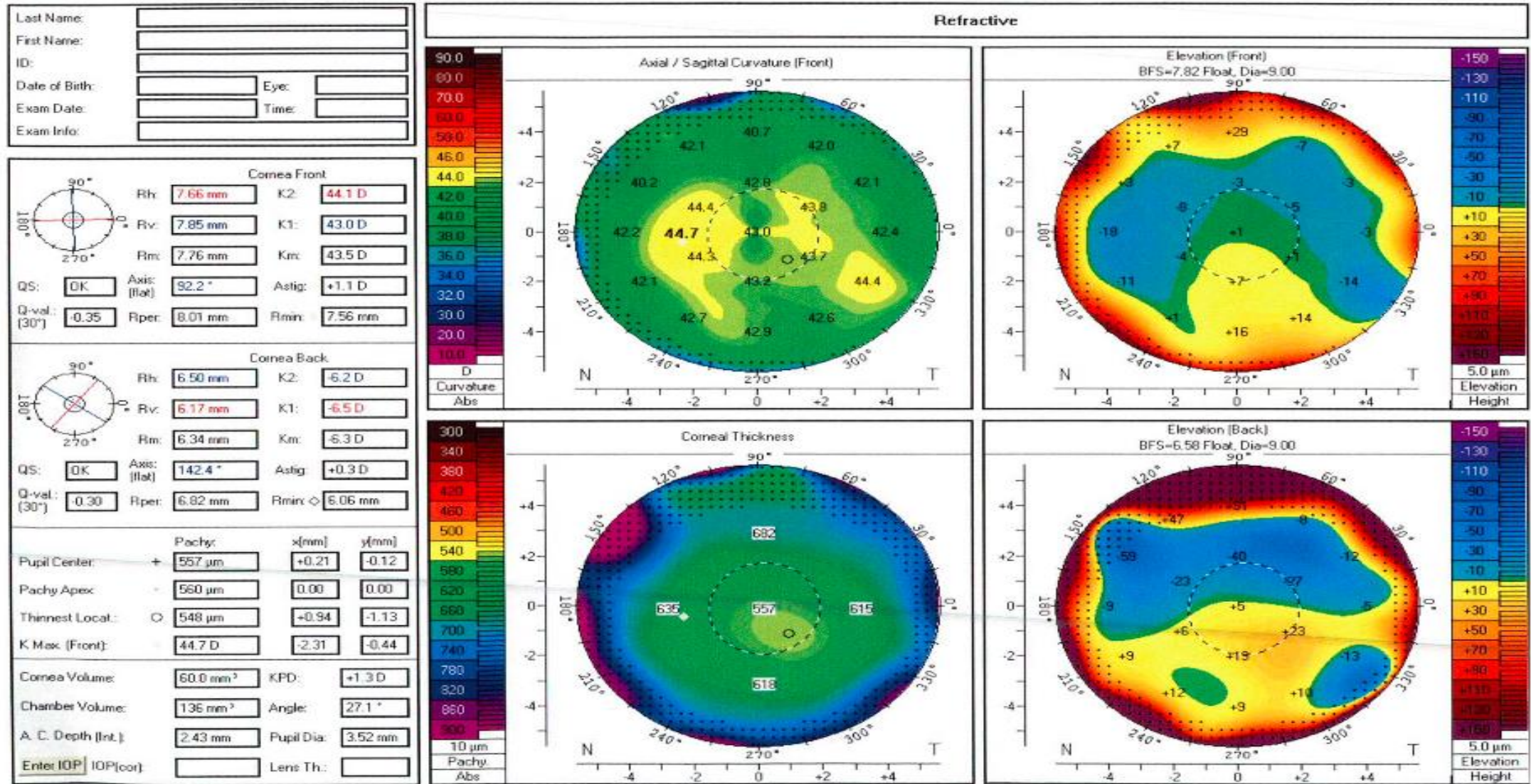
- 69yr male
- 2.5mm inferior perforation caused by metallic foreign body
- Best corrected VA 6/36
- Same day mini tectonic DSAEK
- Bare stroma re-epithelised by one week
- Developed traumatic cataract
- Final keratometric astigmatism of 1.1D
- Final VA of 6/6







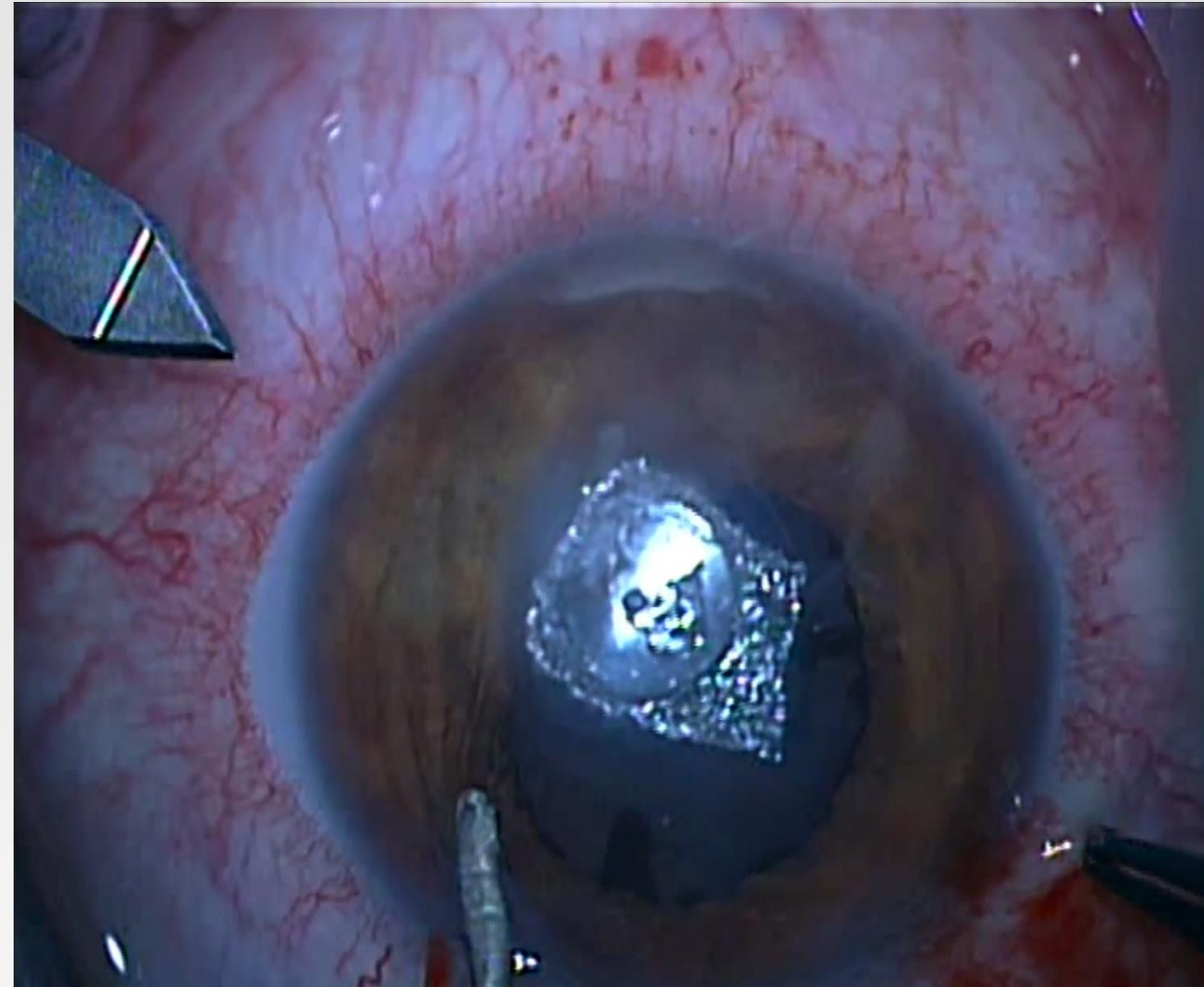
# OCULUS - PENTACAM 4 Maps Refractive



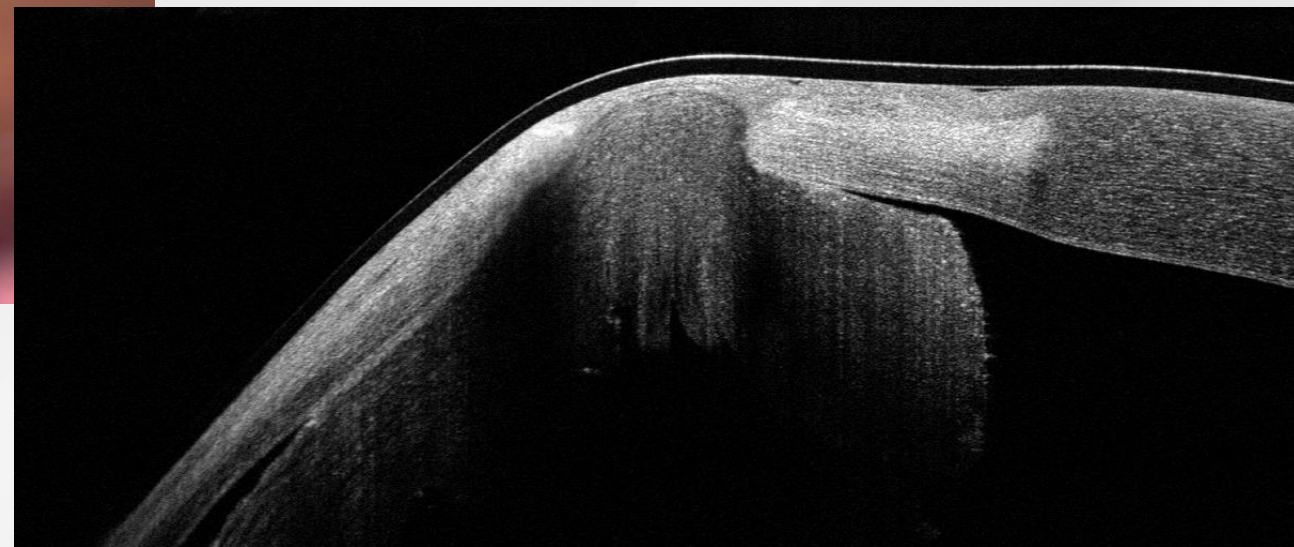
**FIGURE 3.** Nine-month Pentacam showed 1.1D astigmatism. (The full color version of this figure is available at [www.corneajrnl.com](http://www.corneajrnl.com).)

# Case 2

- 32yr male
- Background of HSK
- Multiple non-attender to clinic
- 2mm central perforation with flat AC on presentation
- Mini-DSAEK performed



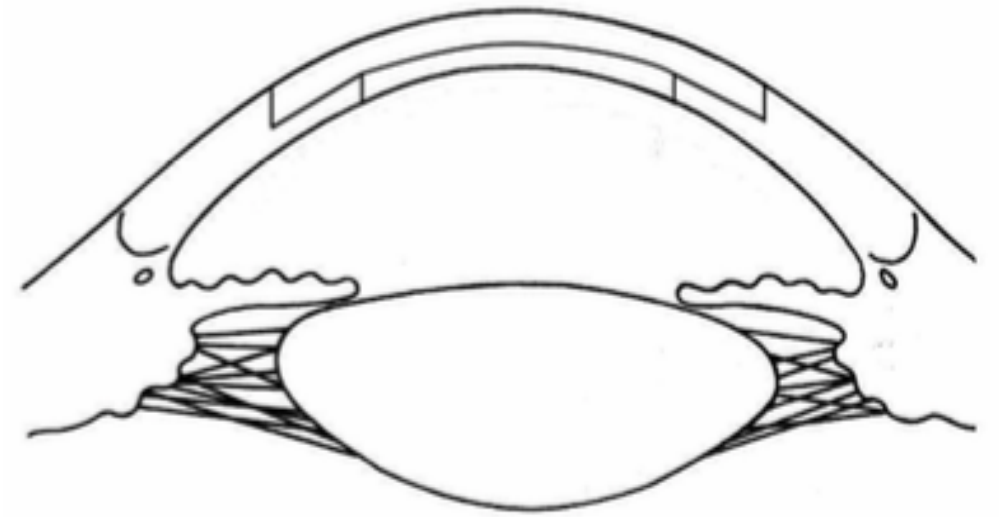
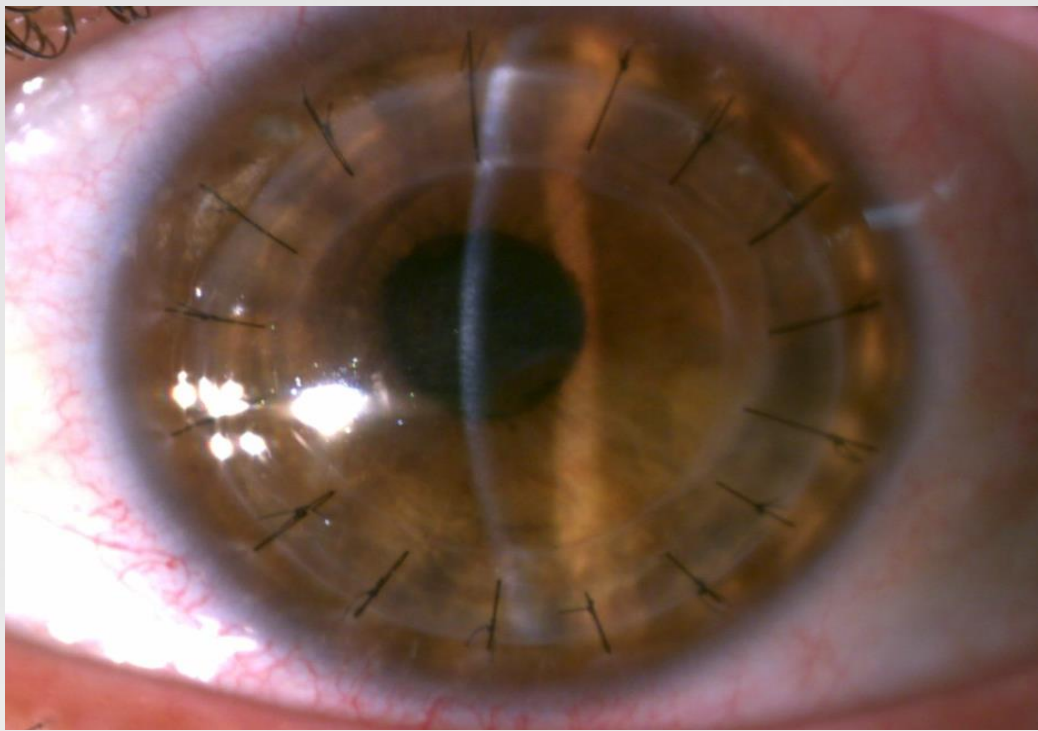




**10<sup>TH</sup> EVOLVING PRACTICE OF OPHTHALMOLOGY  
MIDDLE EAST CONFERENCE**

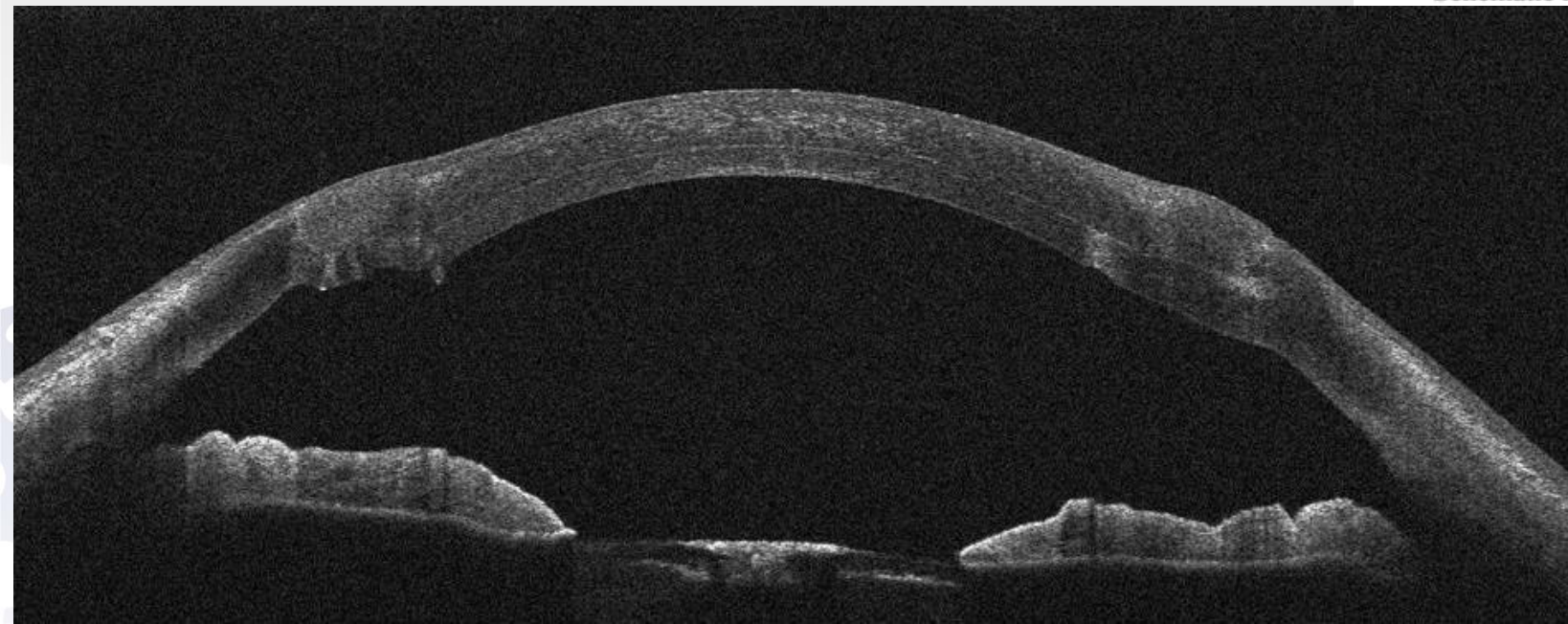


# Case 2



**FIGURE 4**

Schematic representation of a two-piece mushroom penetrating keratoplasty.





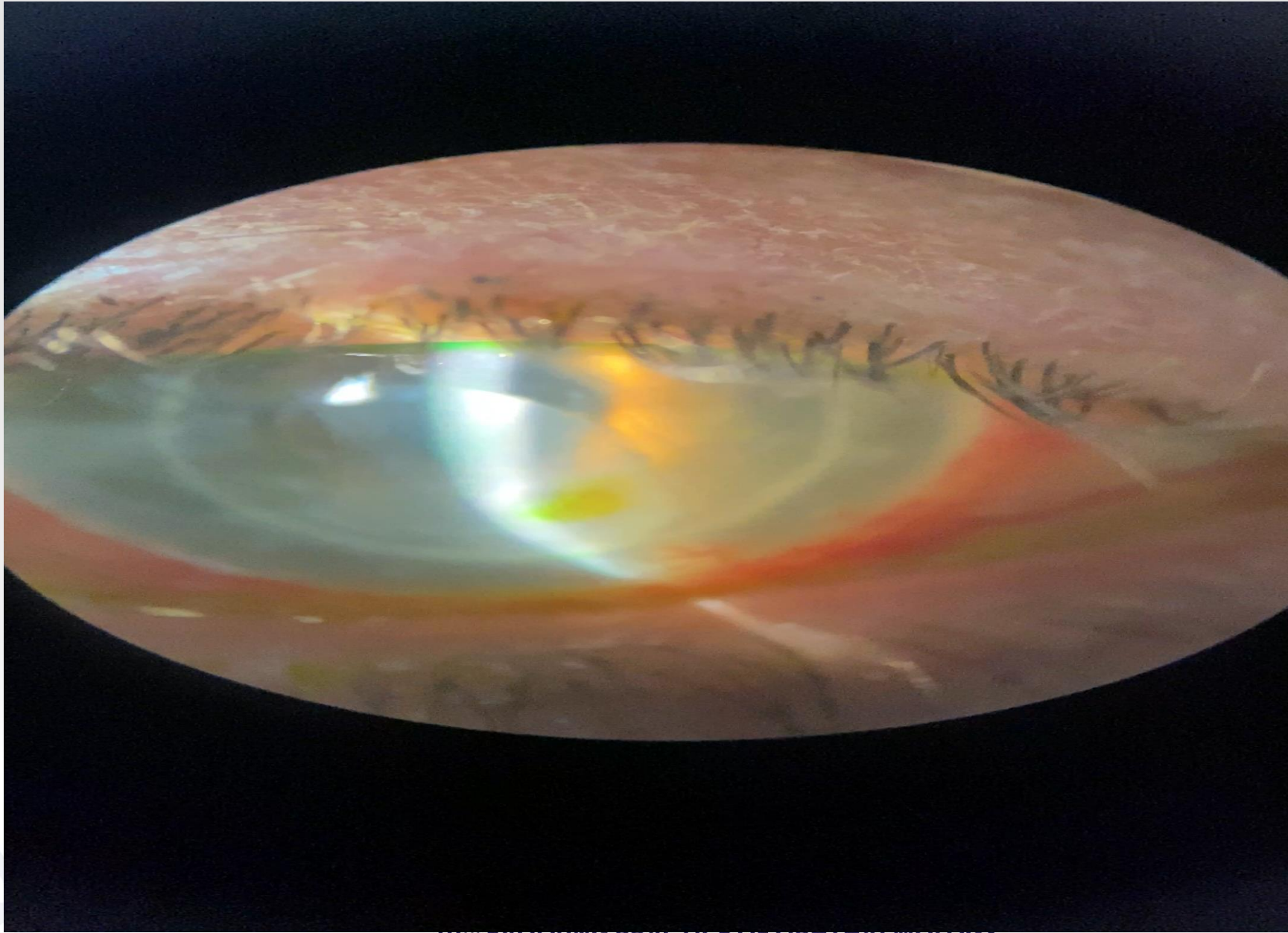


# Case 3

- 59 year old lady with:
  - keratoconus
  - Penetrating keratoplasty for KC
  - HSK in the graft
  - Dupilumab induced ocular surface disease
  - Neurotrophic cornea
- Developed a persistent epithelial defect (4 weeks)
- She developed a 0.5mm perforation in the area of the persistent epithelial defect with a flat anterior chamber
- Semi circular mini DSAEK performed





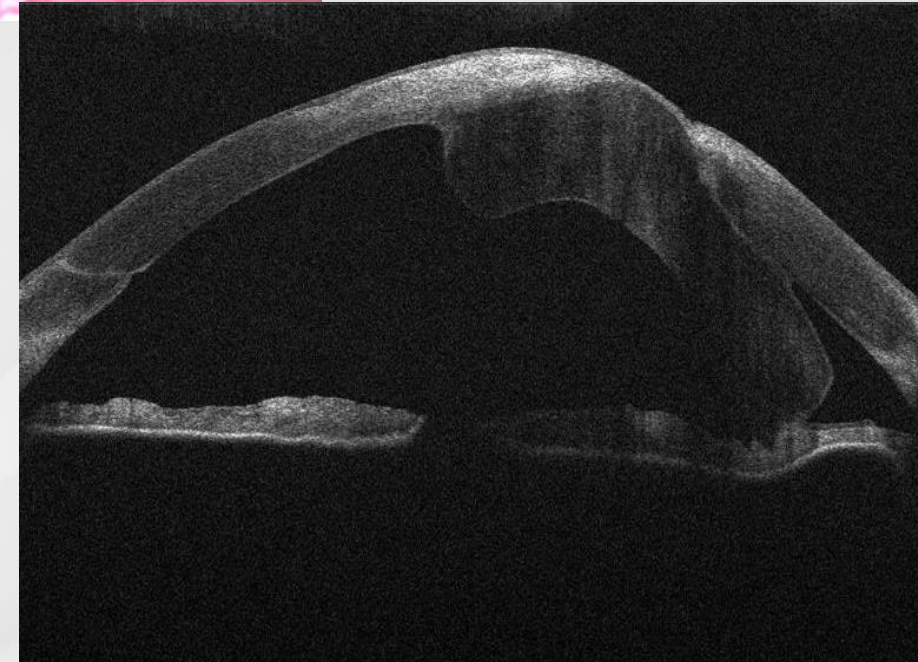
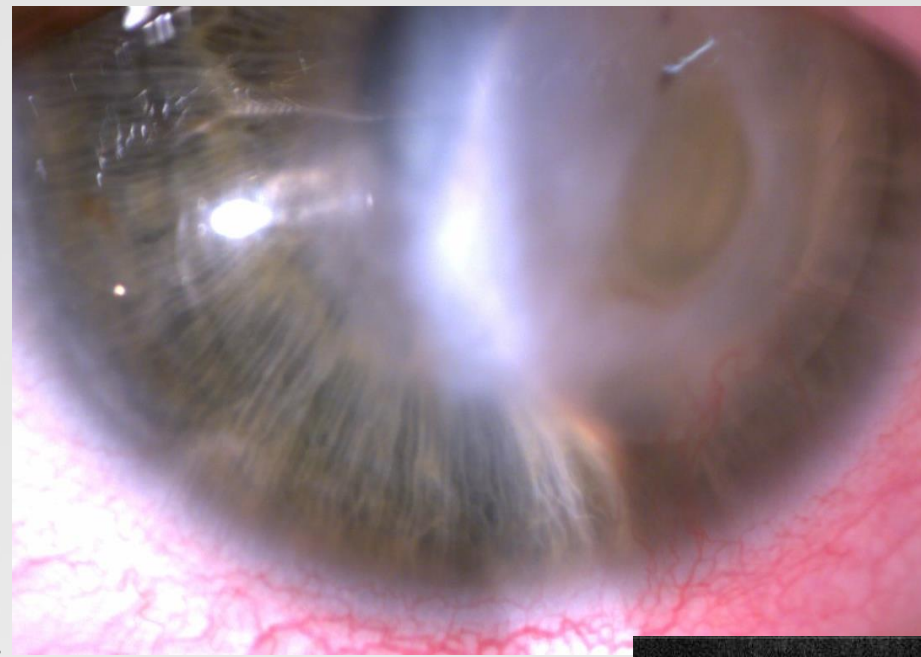


10<sup>th</sup> EVOLVING PRACTICE OF OPHTHALMOLOGY  
MIDDLE EAST CONFERENCE



# Case 4

- 22yr contact lens wearer
- Pseudomonas keratitis with perforation
- Initially glued and stable
- 24 days later glue dislodged
- Corneal button from leftover DMEK
- Tectonic ab-interno stromal patch used to plug defect
- Host endothelium grows over stromal DSAEK button



Tectonic Mini-DSAEK Facilitates Closure of Corneal Perforation in Eyes With Healthy Endothelium. *Cornea*. 2021 Jun 1;40(6): 790-793

# Summary

- Tectonic mini-DSAEK is a safe technique in the management of corneal perforations
- Low stigmatic profile
- Rapid visual recovery
- Stroma from leftover DMEK can be used
- Host endothelisation over donor button

