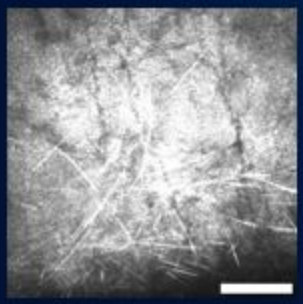
Schnyder Corneal Dystrophy

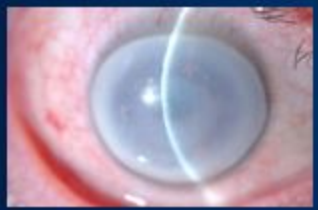
シュナイダー角膜ジストロフィ

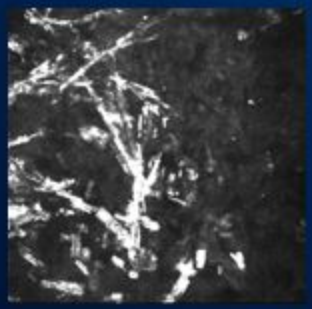
- We found three novel mutations in the *UBIAD1* gene (Y174C, K181R, and N233H) in three pedigrees confirming genetic heterogeneity.
  シュナイダー角膜ジストロフィの遺伝的異質性の確認を確認した
- *In vivo* confocal microscopy showed subepithelial highly reflective crystals.
  共焦点顕微鏡では上皮下の多数の高輝度結晶状沈着物を認めた

UBIAD1 K181R

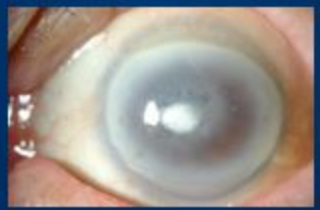


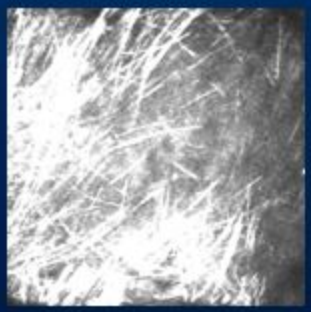
UBIAD1 N274C





UBIAD1 Y174C





Kobayashi A , et al. Ophthalmology 2009

K-structure and fluorescein corneal mosaic was completely identical!
K-structureと角膜モザイクは完全に一致した！

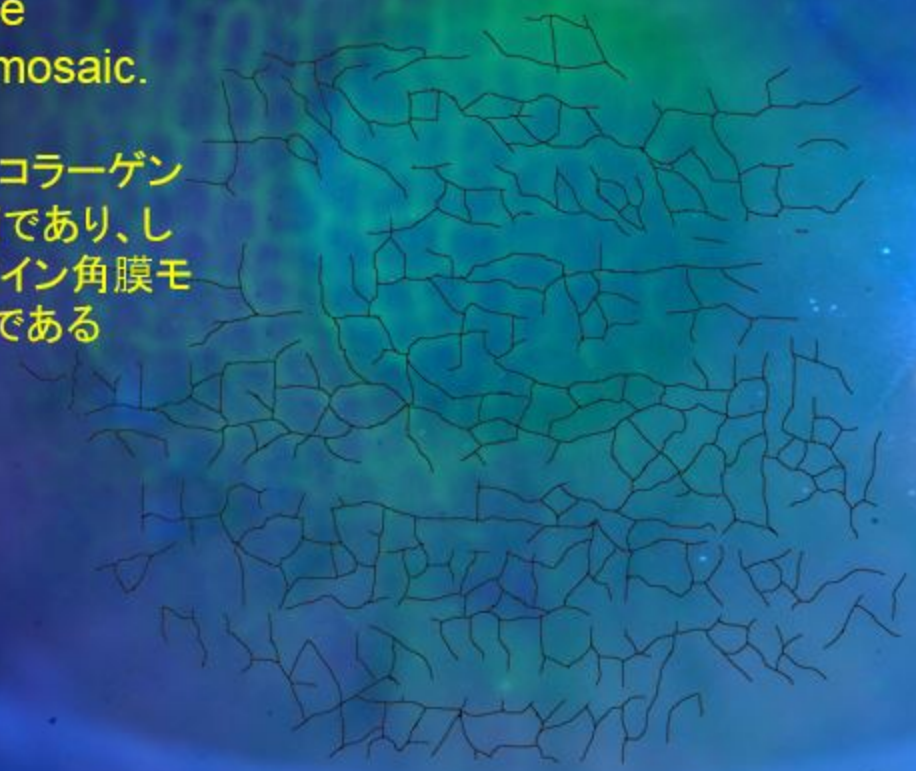
We concluded that the K-structure is a collagen fiber terminals of the anterior stromal surfaces and is a structural basis of the fluorescein corneal mosaic.

K-structureは角膜実質コラーゲン線維終末部の前額断面であり、しかも、それがフルオレセイン角膜モザイクの解剖学的原因である

Mapping of Normal Corneal K-Structures by In Vivo Laser Confocal Microscopy

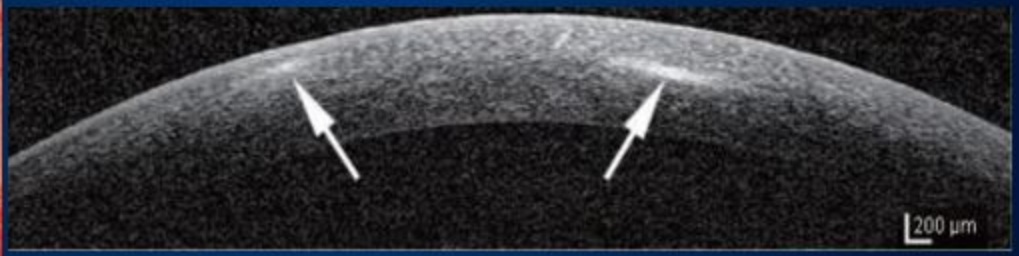
Hideaki Yokogawa, MD, Akira Kobayashi, MD, PhD, and Kazuhisa Sugiyama, MD, PhD

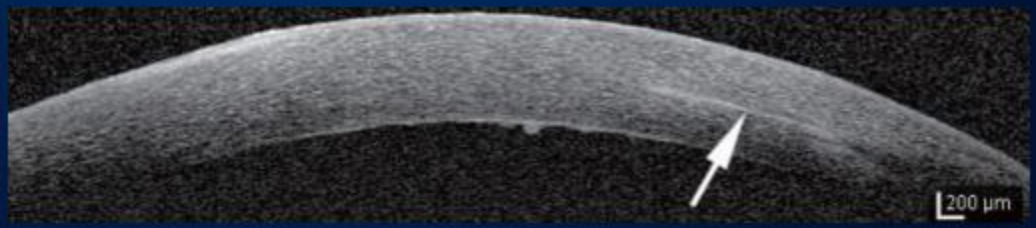
Yokogawa and Kobayashi, Cornea 2008



Visualization of radial keratoneuritis by anterior segment OCT
前眼部OCTを用いた放射状角膜神経炎の可視化

- Highly reflective bands or lines of various widths between 50 to 200 μm by AS-OCT.
  放射状角膜神経炎は角膜実質内の50～200μmの様々な太さの帯状病変として描出された
- Detection of radial keratoneuritis by AS-OCT is quite useful for early diagnosis of AK.
  前眼部OCTによる放射状角膜神経炎の描出もアカントアメーバ角膜炎の診断に有用である

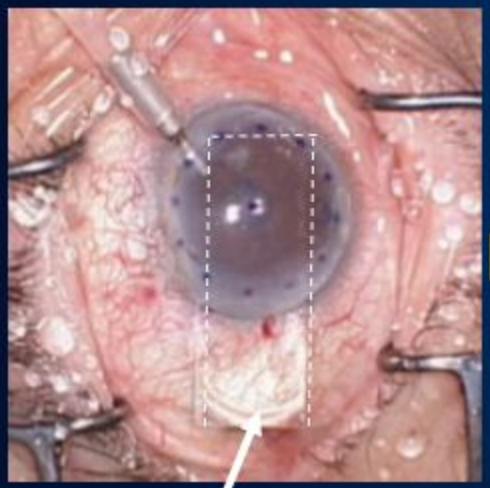




Yamazaki (Mori) N, Kobayashi A, et al. Ophthalmology 2014

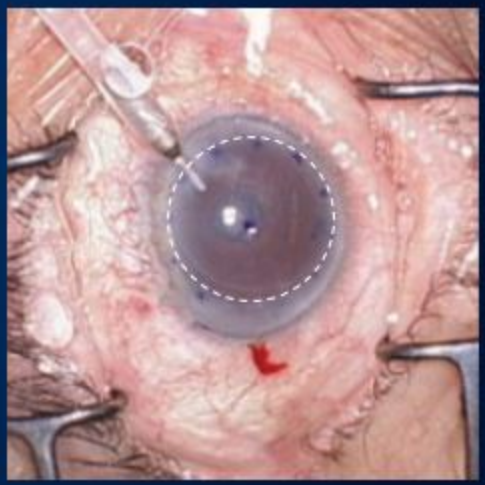
My idea “Double glide pull-through technique”
ダブルグライドテクニックの開発

- The use of Busin glide and IOL sheets glide decrease the complication dramatically with preservation of ECD (as low as 22.0% cell loss after 6 M)
  DSAEKドナー内皮細胞障害が20%以上減少、手術の成功率がほぼ100%と飛躍的に上昇



IOL glide insertion
眼内レンズグライドを挿入

Donor insertion using Busin glide and IOL glide
ダブルグライド法



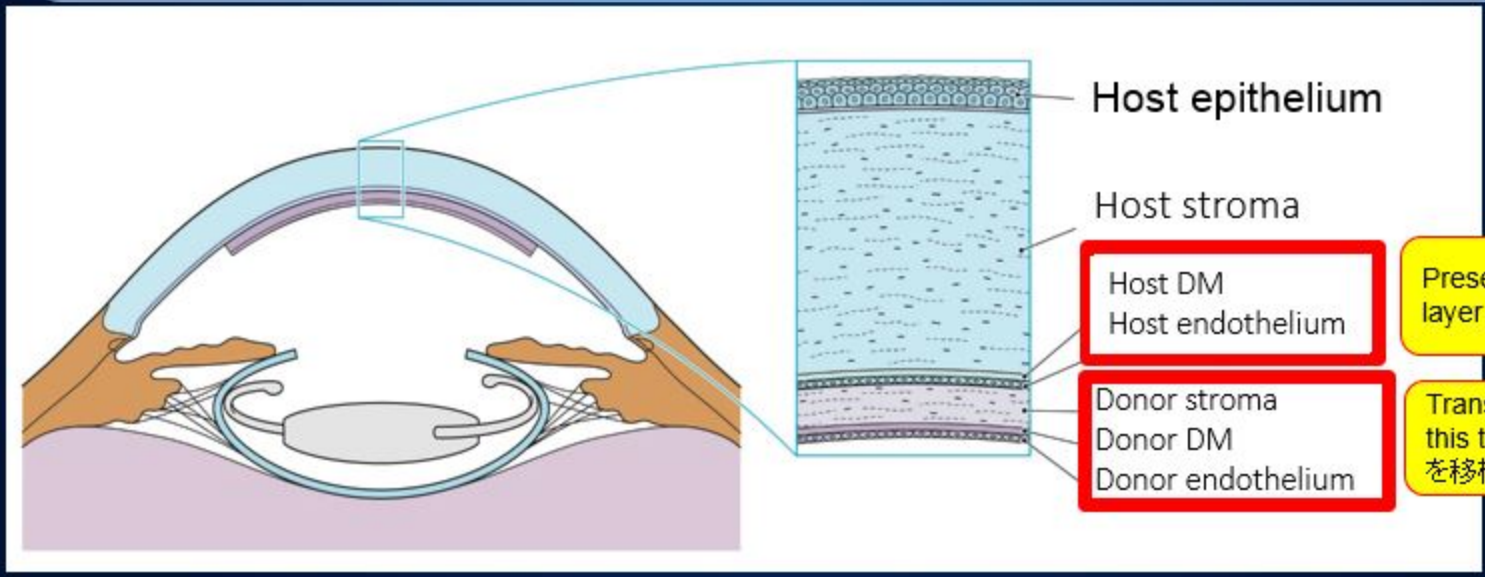
Donor insertion completed
DSAEKドナー挿入完了

Kobayashi A, et al. Cornea 2008
Kobayashi A, et al. Am J Ophthalmol 2008
Kobayashi A. et al. Ophthalmology 2009

Development of nDSAEK（non-Descemet stripping automated endothelial keratoplasty）
デスメ膜内皮温存角膜内皮移植の開発

Clinical question：Is it possible to leave the host Descemt's membrane in cases of non-Fuchs bullous keratopathy that is predominant in Japan?
私の疑問：フックスジストロフィ以外では、デスメ膜を剥離除去する意義はあるのか？

I developed nDSAEK（non-Descemet Stripping Automated Endothelial keratoplasty）, enabling OR time reduction and less traumatic surgery.
nDSAEK(デスメ膜内皮温存角膜内皮移植)を開発し、手術時間の短縮とより低侵襲角膜内皮移植の実現



Kobayashi A, et al. Am J Ophthalmology 2008
Kobayashi A, et al. Ophthalmology 2009
Kobayashi A, et al. Jpn J Ophthalmol 2012

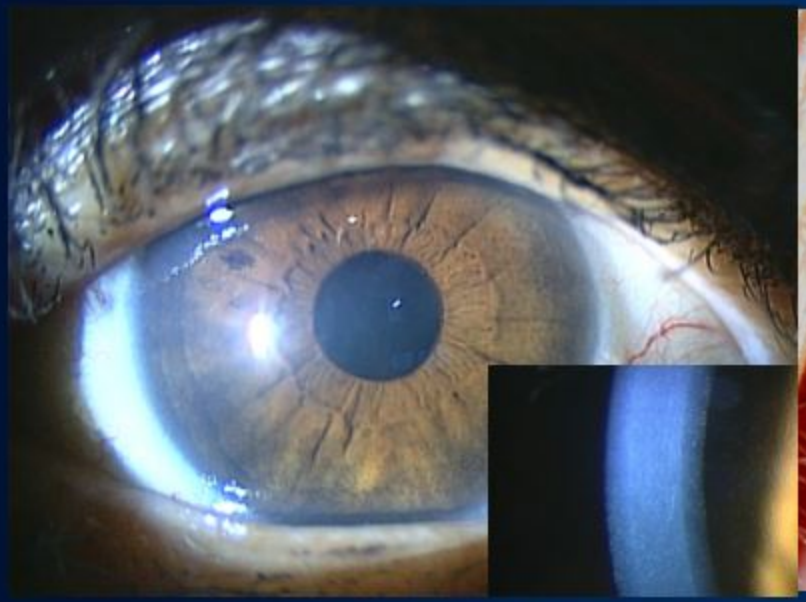
DSAEK live surgery at 5th Asia Cornea Society Meeting, St. Mary's Hospital at Seoul, Korea. Dec.11th, 2017

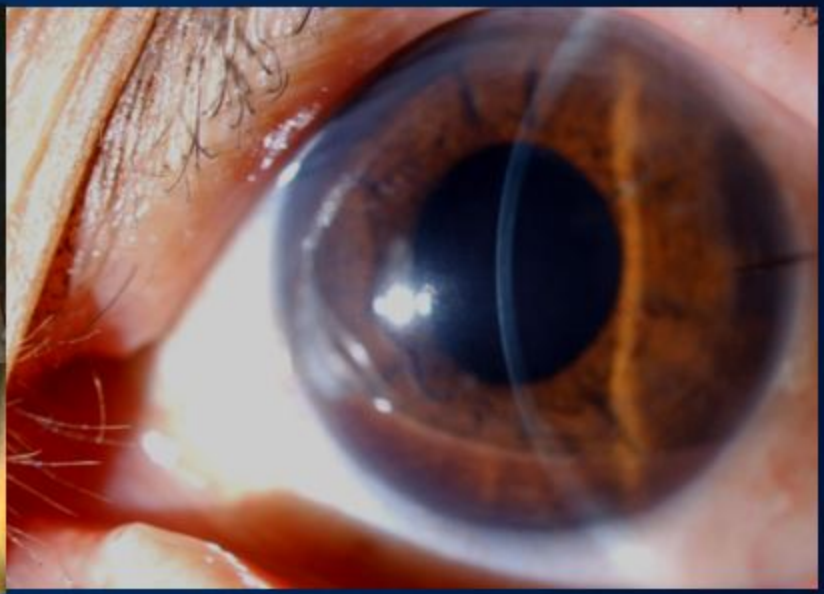
Prof. Choun-Ki Joo

Prof. Donald Tan

First DMEK in Asia at Kanazawa University Hospital

Fuchs dystrophy, 71 y.o. female

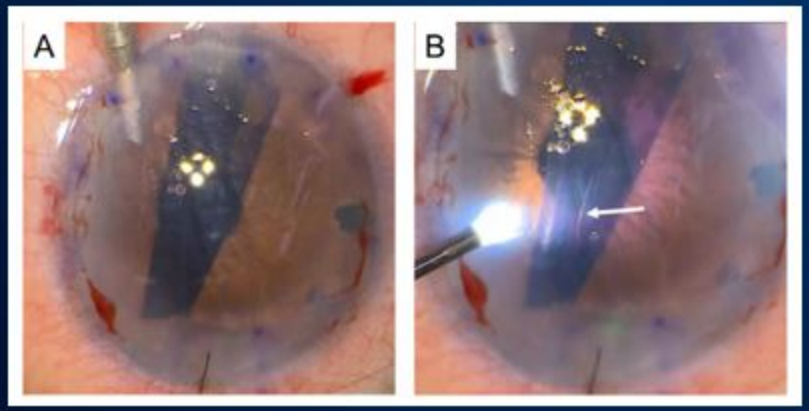




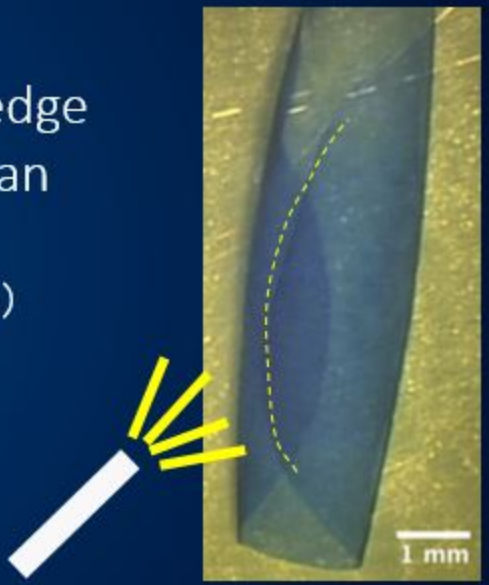
Preope VA 0.4（0.5×-0.5Dcyl-0.75D Ax70） 2 week postope 0.9（1.5×+1.25Dcyl-1.25D Ax85）

Kobayashi-sign (K-sign)

- A simple finding which can be used to determine tight-roll DMEK donor tissue orientation.
（丸まったDMEKグラフトの裏表を見分ける簡単な方法）
- K-sign the appearance of a highly reflective round curved line from an overlapping graft edge within the anterior chamber using light from an endoilluminator.
（光源を当てると、丸まったドナーのエッジが高輝度に光る）



K-sign (-)　　K-sign (+)



Kobayashi A, et al. Cornea 2021 in press