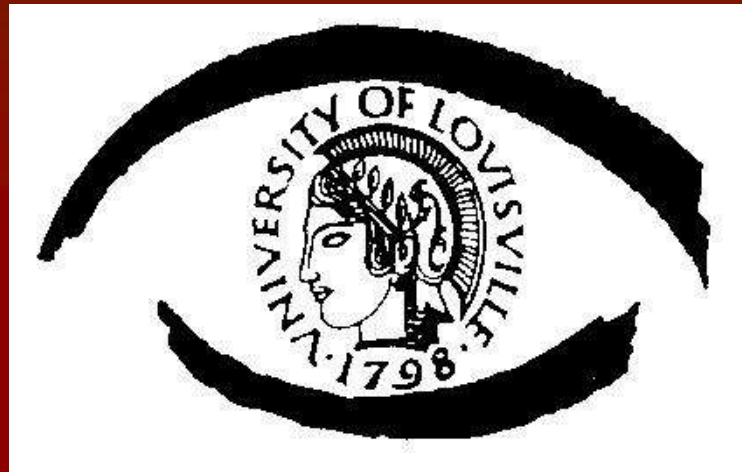


Grand Rounds



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Subjective

CC/HPI: 64 year old Caucasian lady presented for an evaluation of a chronic eye condition. She has complaints of poor vision in the left eye, and itching, burning, and epiphora worse in the right eye.

POH: Corneal Transplant 1959

PMH: None significant
(Tubal Ligation 1980, Ankle surgery 1964)

MEDS: Acular, Cromolyn Ophthalmic 4%

Objective

	OD	OS
<u>BCVA:</u>	20/30	20/LP
<u>IOP (mmHg):</u>	16	18

Pupils: Round & Reactive, No RAPD

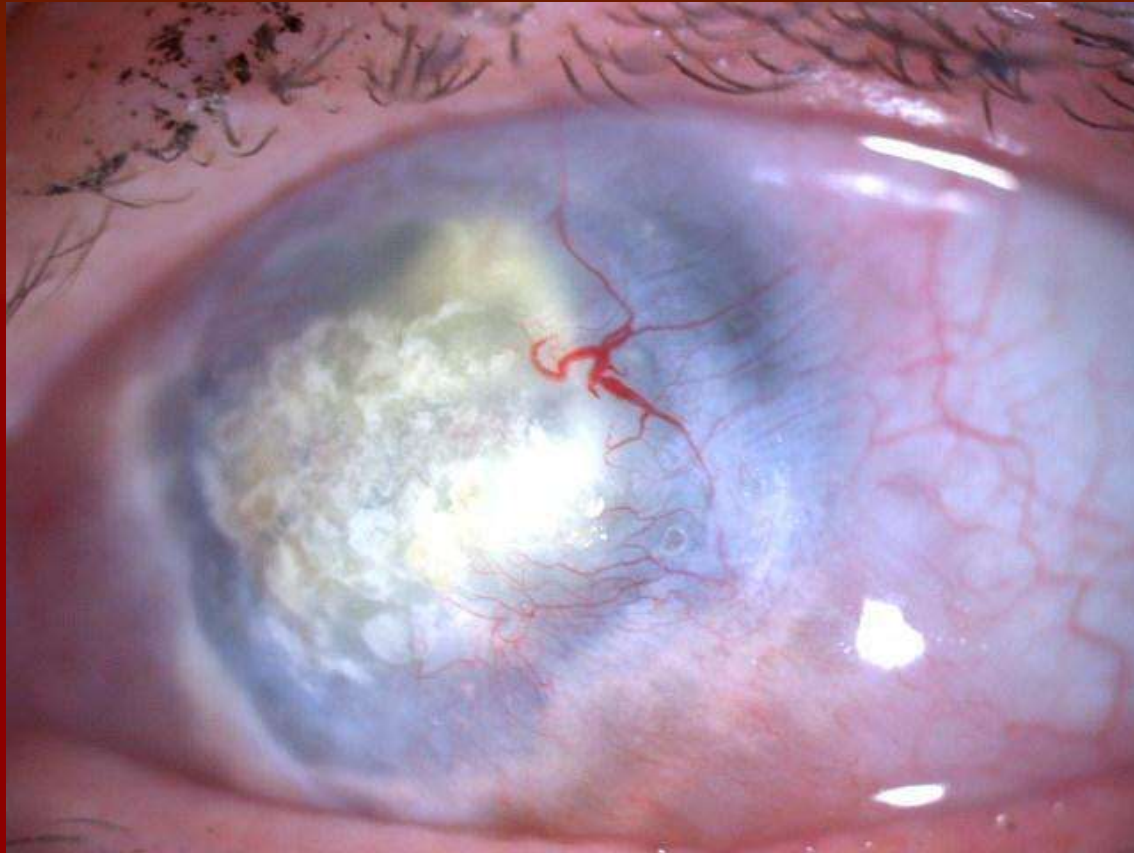
Anterior Segment Photos



Anterior segment photo of right eye [left] showing calcium and lipid accumulation in the corneal stroma. An area of focal corneal thinning is seen superiorly.

Anterior segment photo of left eye [right] showing diffuse lipid and calcium accumulation diffusely within the cornea, with obscuration of other anterior segment structures

Anterior Segment Photo



Color Fundus Photo of left eye showing again showing accumulated lipid and calcium within the corneal stroma. Peripheral thinning is noted in the superior and temporal areas, as well as significant neovascular growth.

History

- Previous prolonged idiopathic corneal inflammation
- No known ocular trauma or infectious diseases.
- No specific medication (ointment or eye drops) had been applied

Assessment/Differential Diagnosis

- 64 yo WF with lipid and calcium deposits in the corneal stroma and corneal vascularization

Diagnosis: Lipid Keratopathy

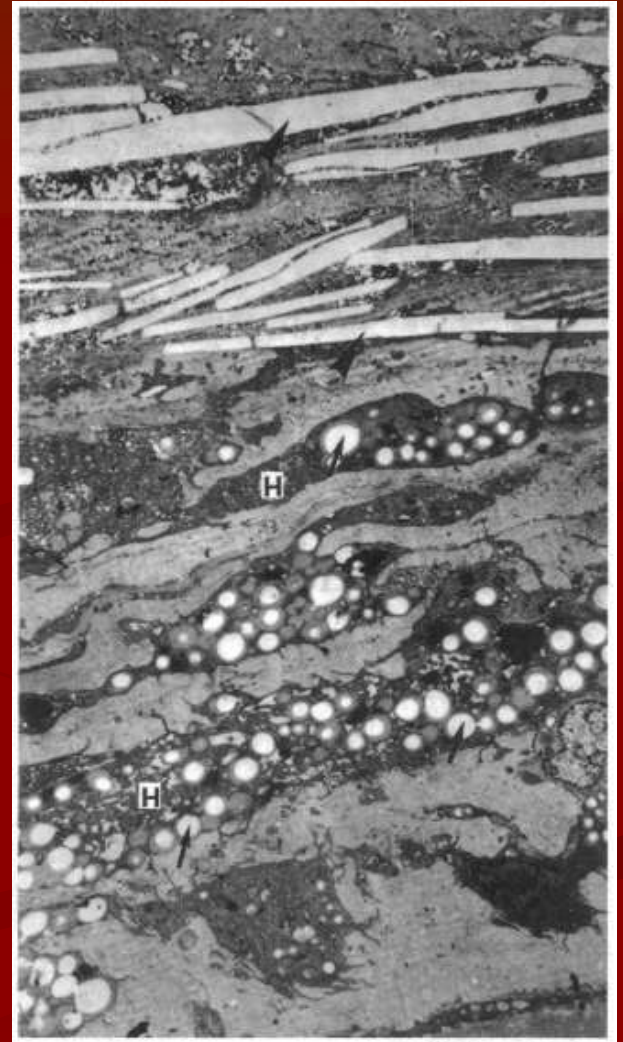
Lipid Keratopathy

- Appears dense as yellow or cream-colored opacification of the corneal stroma, usually in areas surrounding blood vessels
 - Thought to be a result of cholesterol or fatty acid extravasation
- Primary vs. Secondary:
 - Primary form (usually bilateral)
 - No evidence of antecedent infection, inflammation or corneal damage
 - Conditions such as Tangier disease (Familial High Density Lipoprotein Deficiency) and LCAT (Lecithin Cholesterol Acyltransferase) deficiency
 - Secondary form (most common)
 - Related to the presence of corneal vascularization due to a wide variety of corneal lesions (Trauma, interstitial keratitis or herpes zoster keratitis)

* Unusual Idiopathic Lipid Keratopathy....

Electron Micrograph (EM)

- EM of the corneal stroma (x3050)
- Histiocytes (H) with lipid vacuoles (arrows)
- Extracellular cholesterol clefts (arrowhead) can also be seen



* Primary Lipid Keratopathy....

Treatment Options

- Argon laser treatment to close the feeder vessels
- Penetrating keratoplasty
 - May recur in the graft
- Keratoprosthesis (KPro)
 - An evolving alternative

Indications for Boston KPro

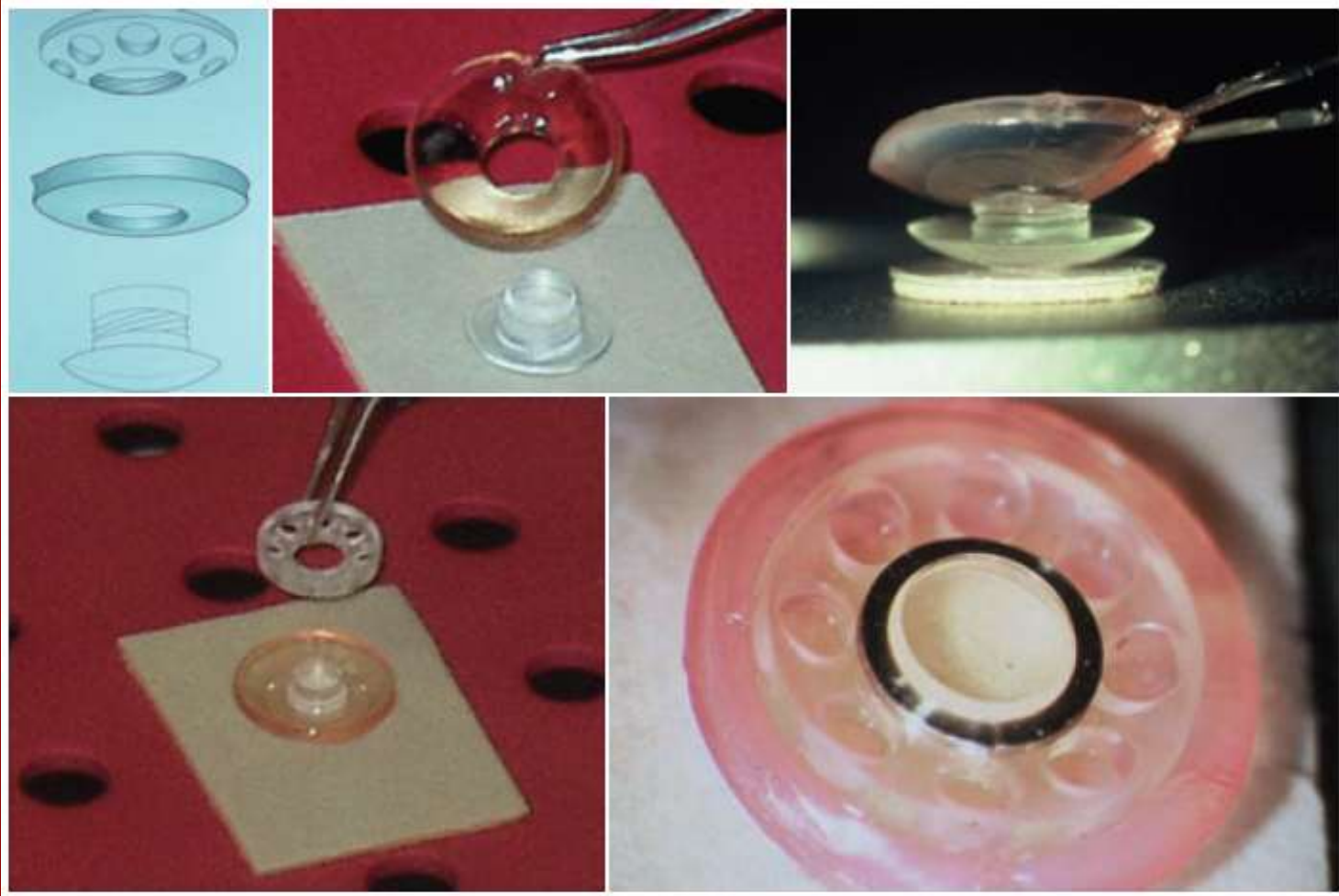
- Cases of refractory corneal blindness
 - Repeated failed corneal grafts
 - Cases where corneal grafting is deemed high risk

- Ideally, no evidence of retinal or optic nerve disease
 - Minimum vision of light perception with good projection in the four quadrants.

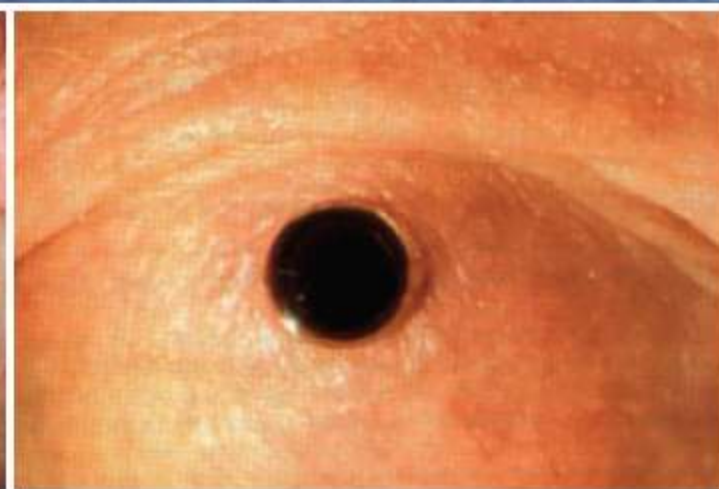
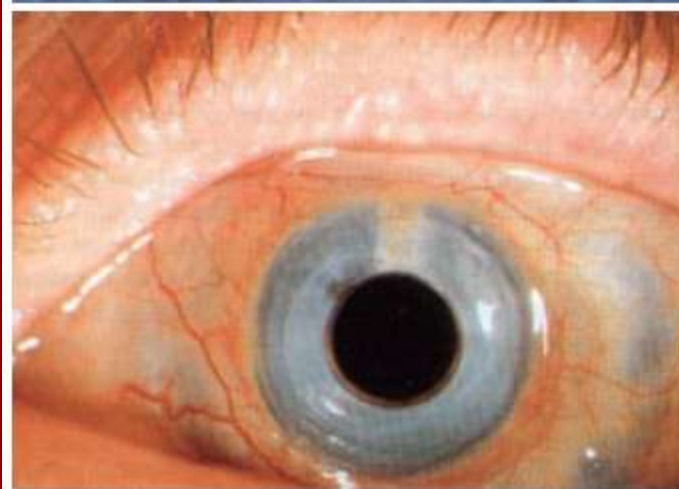
Boston KPro

- Two types are available:
 - Both have optical components made from PMMA (poly-methyl-methacrylate)
- Type 1 device:
 - PMMA optical front plate and stem
 - Inserted through and sandwiches a corneal graft button which has been centrally trephined
 - Locks into a larger back plate
- Type 2 device:
 - Similar design, with an added anterior cylinder that protrudes through a permanently closed upper eyelid, and is used in end-stage dry eye

Type 1 Boston KPro - Assembly



Boston KPro



Complications

- Common to all keratoprostheses:
 - Infection
 - Glaucoma
 - Formation of retroprosthetic membranes
 - Extrusion.

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Thank You!