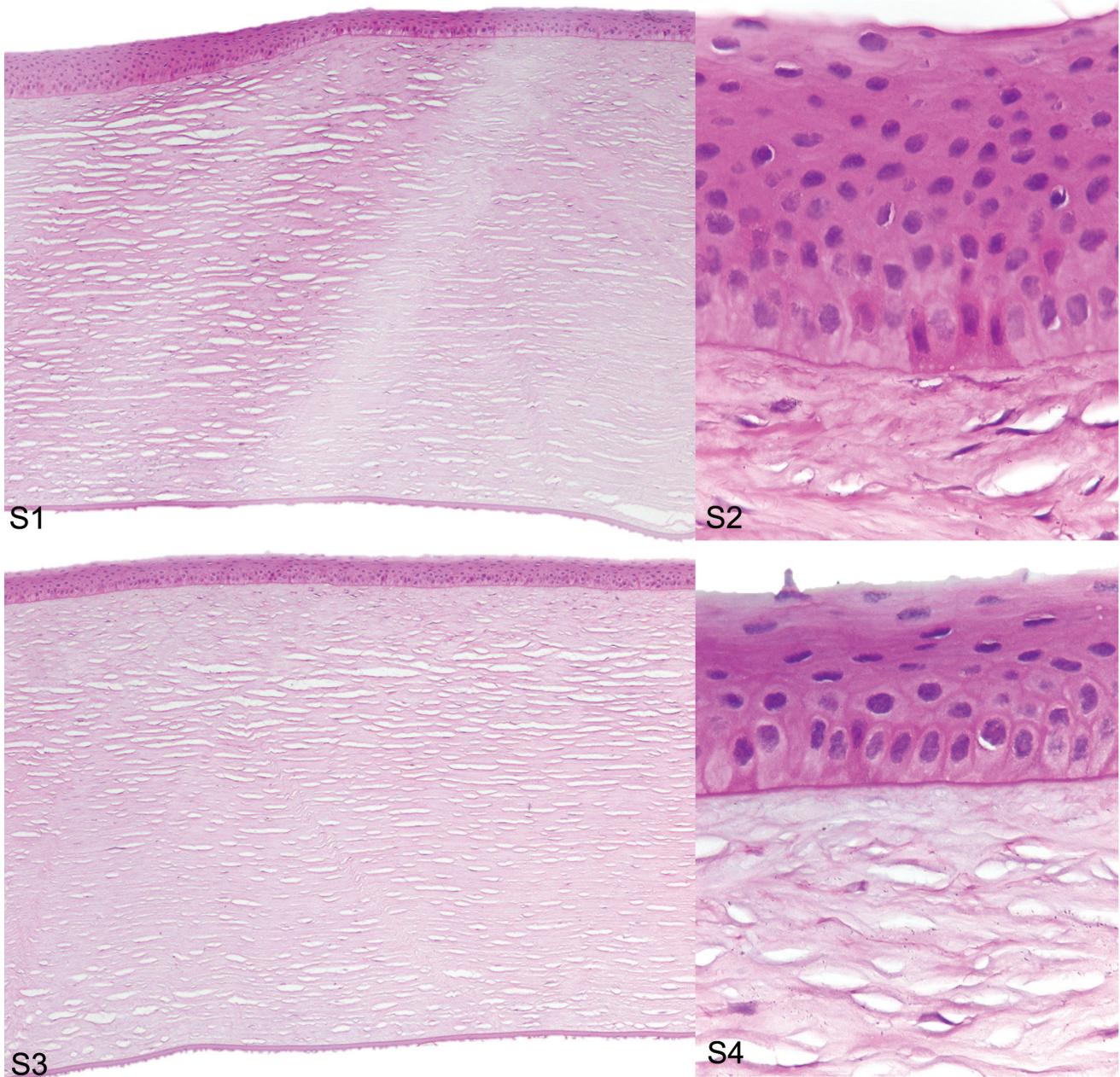
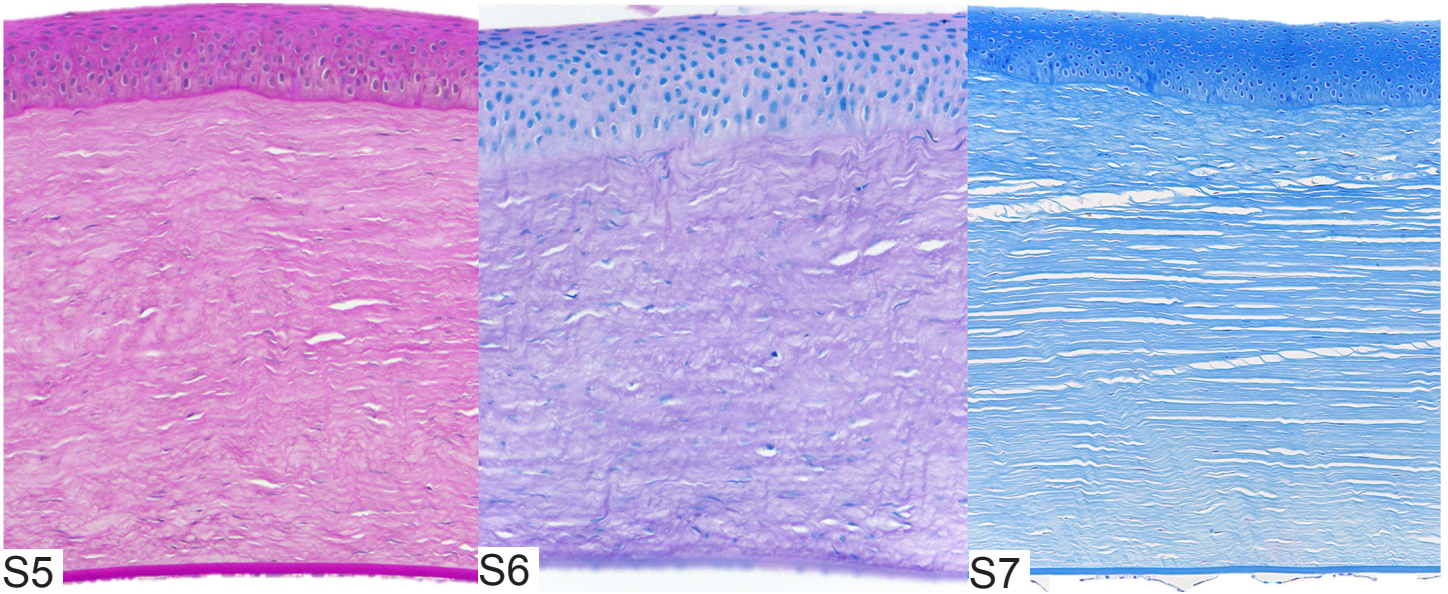


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Supplemental Figures S1-S2. Tropical keratopathy, right eye, cornea, cat, Case 3. Supplemental Figure S1. From right (normal area) to left (lesion), progressive epithelial hyperplasia, paralleled by progressive upper stromal collagen condensation compared with normal deep stroma, There is decrease in overall corneal thickness mainly due to stromal thickness reduction. Hematoxylin eosin (HE). Supplemental Figure S2. Detail from an area with the lesion in the previous image, showing epithelial hyperplasia (up to 12 epithelial cell layers) and upper corneal stromal condensation with thicker collagen fibrils and reduction of interlamellar spaces/clefts. The clefts in the right side of the stroma potentially represent the non-affected stroma at the margin of the lesion. HE. Supplemental Figures S3-S4. Left eye, cornea (control), case 3 Supplemental Figure S3. Uniform thickness of the corneal epithelium with no changes in the corneal stroma and Descemet membrane. HE. Supplemental Figure S4. Normal corneal epithelium with 6 to 8 cell layer, a uniform intact basal lamina and normal upper corneal stroma with keratocytes nuclei and clefts that appear during normal histological processing. HE.

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Supplemental Figures S5-7. Tropical keratopathy, cat. Supplemental Figure S5. Case 5, left eye. Normal epithelial basal lamina and Descemet's membrane. Periodic acid-Schiff. Supplemental Figure S6. Case 5, left eye. No organisms have been detected. Acid-fast stain. Supplemental Figure S7. Case 3, right eye. Absence of acid polysaccharide accumulations in the stroma. Alcian blue stain.

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Supplemental Table S1. Feline cases and lesions selected for the study

	Case No.	Year collected	Origin	Age	Sex	Breed	Lesion location	Biopsy for HE		Biopsy for TEM		Biopsy for SAXS	
								Lesion	Normal	Lesion	Normal	Lesion	Normal
Cases with lesions	1	2016	St. Kitts	young adult	male	DSH*	OS [#]	1	1 ^{&}	No	No	No	No
	2	2016	St. Kitts	adult	female	DSH	OD ^{**} , OS	2	2 ^{&}	3: 2OS, 1 OD	2: OD	3: 2OS, 1 OD	2: OD
	3	2016	St. Kitts	3 years	male	DSH	OD	1	1 ^{&}	No	No	No	No
	4	2017	St. Kitts	adult	female	DSH	OD, OS	2	2 ^{&}	2: 1 OS, 1 OD	1: OS	2: 1 OS, 1 OD	1: OS
	5	2017	St. Kitts	6 years	male	DSH	OD, OS	2	2 ^{&}	No	No	No	No
	6	2017	St. Kitts	6 years	female	Siamese mix	OD	1	1 ^{&}	No	No	No	No
Controls	7	2016	New Zealand	adult	male	DSH	None	No	1	No	2: 1 OS	1: OS	2: 1 OS
	8	2017	St. Kitts	6 mths	female	Siamese	None	No	1	No	No	No	No

* domestic shorthair cat

[#] left eye

^{**} right eye

[&] normal areas adjacent to the lesion in the same biopsy

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Supplemental Table S3: Light microscopy analysis data

Case No.	Epithelial thickness - number of layers		Corneal thickness/stromal thickness (micrometers)		Percent reduction cornea/stroma
	Lesion (up to) *	Normal area (range) *	Lesion #	Normal area #	
1	13	6-9	941.05 / 857.66	986.59 / 901	4.6 / 4.8
2	15	6-9	788.11 / 687.37	959.74 / 882.39	17.9 / 22.1
3	12	6-8	448.09 / 339.5	530.34 / 473.69	15.5 / 28.7
4	10	5-7	681.45 / 633.93	732.2 / 684.56	6.9 / 7.4
5	14	5-8	734.8 / 609.7	768.41 / 719.37	4.4 / 4.3
6	5	3	611.26 / 582.25	637.72 / 608.6	4.1 / 4.3
7	-	6-8	-	786.92 / 715.04	-
8	-	6-9	-	877.55 / 819.13	-
*P = 0.009			# No statistical significance difference		

The following Supplemental Tables are available online as Excel files:

Supplemental Table S2. SAXS Data: d-spacing, diameter and OI

Supplemental Table S4. ImageJ Data on fibril diameters