7 Summary

Gmeiner, Helmut, 2006: Non-invasive assessment of the feline retinal morphology by OCT.

In human ophthalmology optical coherence tomography (OCT) has proven to be a non-invasive imaging tool for the assessment of the retina. As corresponding investigations are lacking for the feline eye, this study intended to examine the feasibility of OCT for the measurement of feline retinal thickness.

We conducted bilateral OCT measurements at 16 adult cats chosen from the investigator's own small animal practice. Another 12 adult cats which had undergone an unilateral retinal implant surgery were available for measurements of the contralateral eye.

In general anesthesia in every cat eye five vertical and five horizontal OCT scans were carried out starting from the peripapillary region in the direction of the area centralis. Some missing values were due to involuntary movements under anesthesia. Additionally, one eye could not be assessed because of a corneal opacity.

The OCT images yielded high quality without artefact except for some movement artefacts.

In comparison to human OCT scans the OCT images of the feline eye showed an increased width of the band adjacent to the chorioidea, probably corresponding to the tapetum lucidum.

Mean retinal thickness war 204 ± 11 µm. The mean value was statistically significant higher (245 ± 21 µm) in the peripapillary region and statistically significant lower in the area centralis (182 ± 11 µm, all $p < 0{,}0001$).