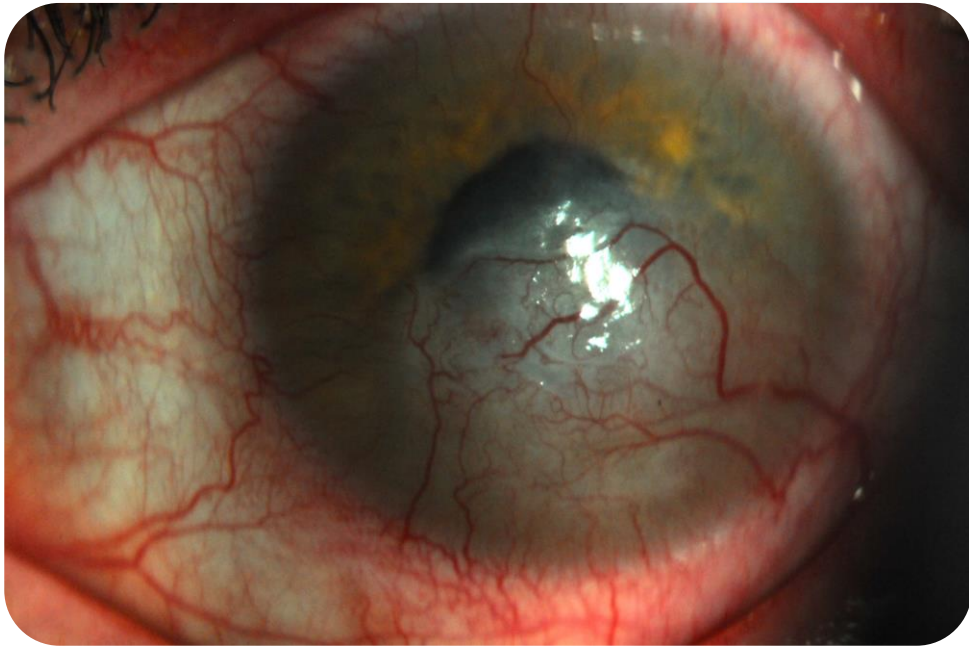


# Angiografia del segmento anteriore

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Vito Romano

*Moorfields Eye Hospital  
London  
United Kingdom*

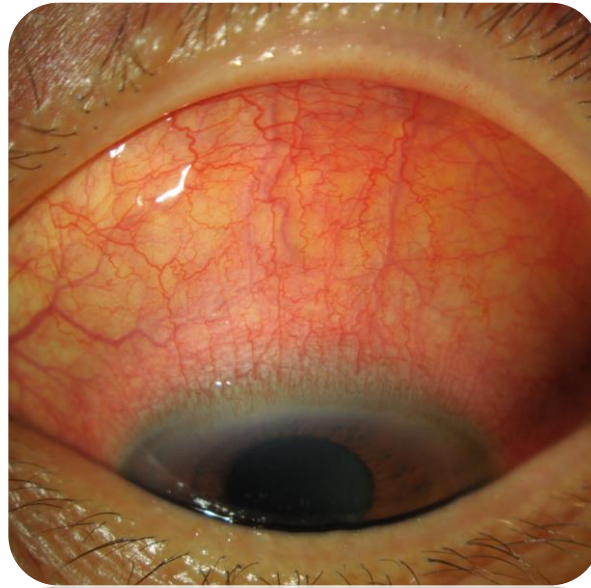
# ANGIOGRAFIA SEGMENTO ANTERIORE

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Neovascolarizzazione  
corneale



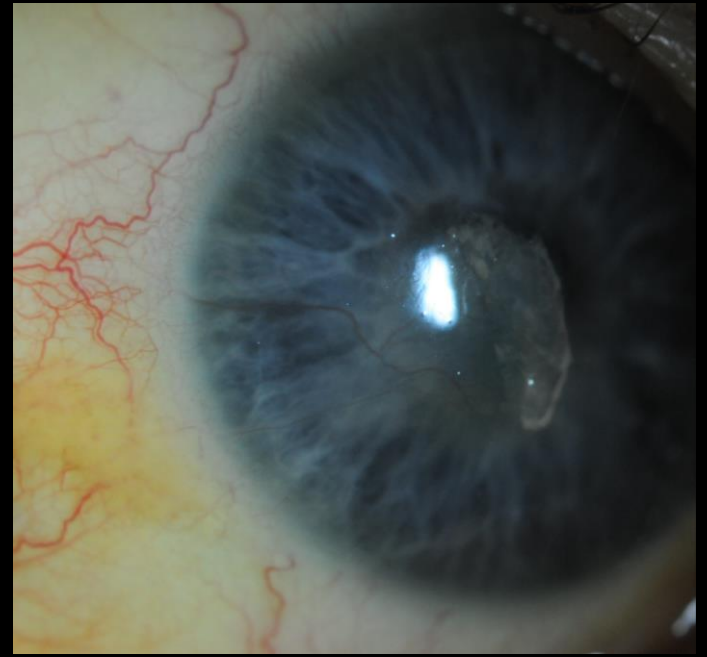
Patologie  
infiammatorie della  
superficie oculare



Congiuntiviti  
allergiche  
giganto papillari

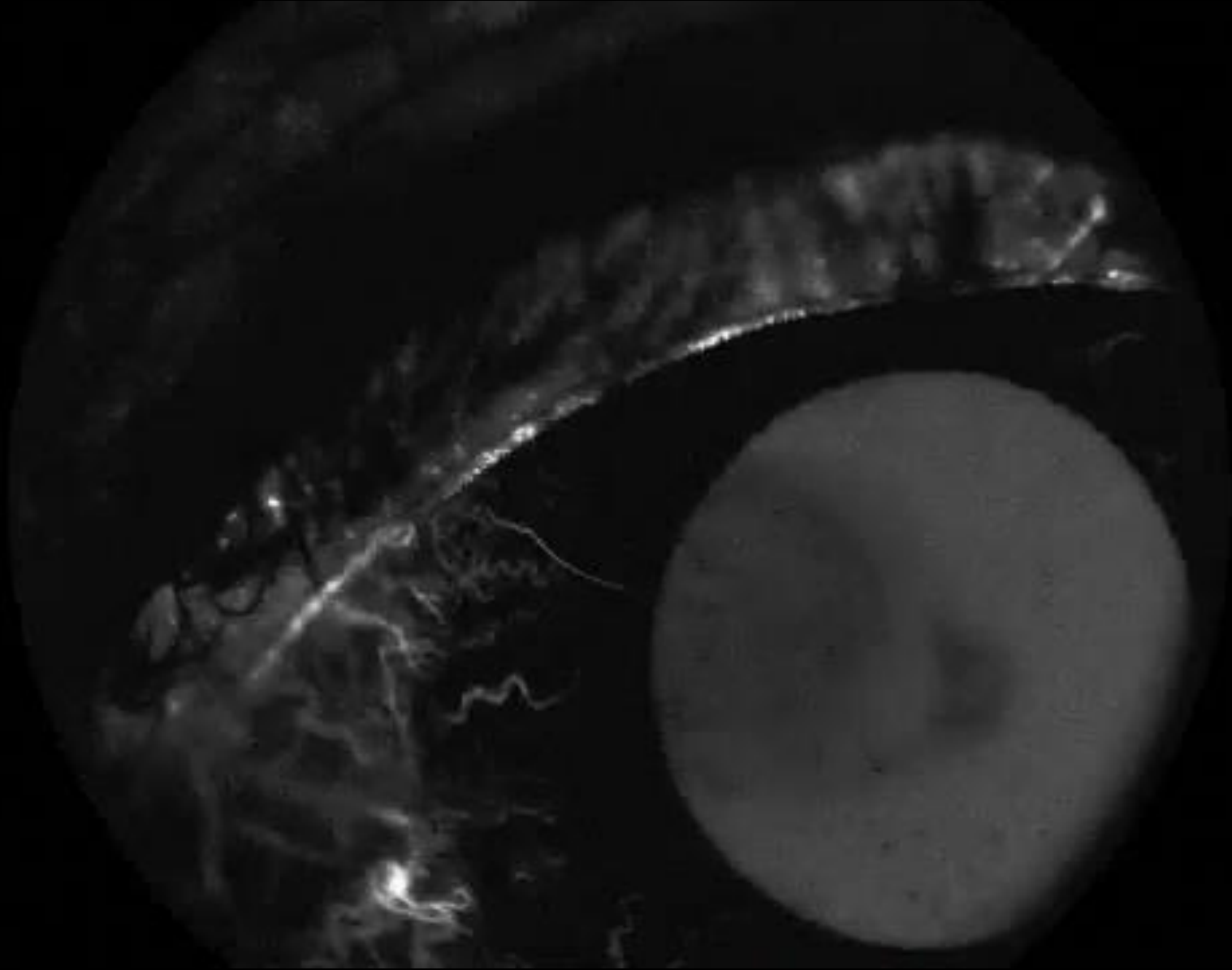


# Lampada a fessura



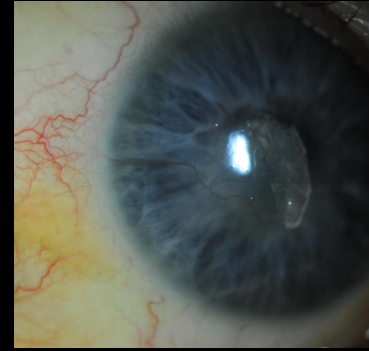
- Non tutte CoNV sono clinicamente evidenti, soprattutto in presenza di cicatrici
- No informazioni riguardanti lo stadio della CoNV
- Non è facile differenziare vasi afferenti dai vasi efferenti

# Angiografia corneale

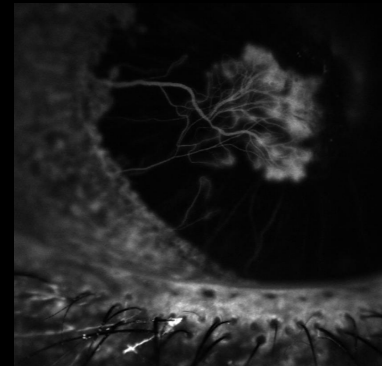
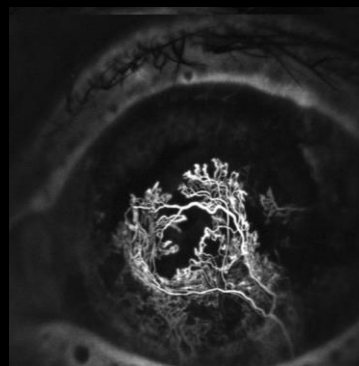
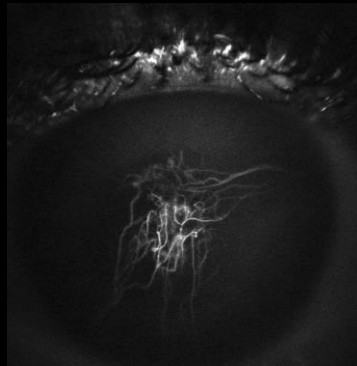




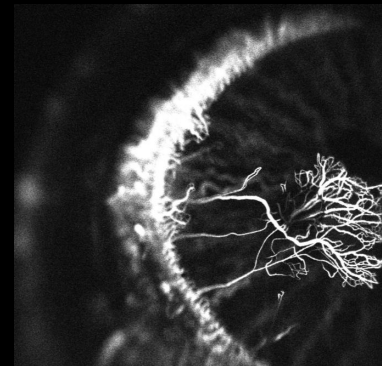
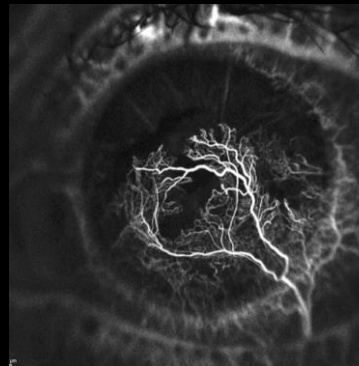
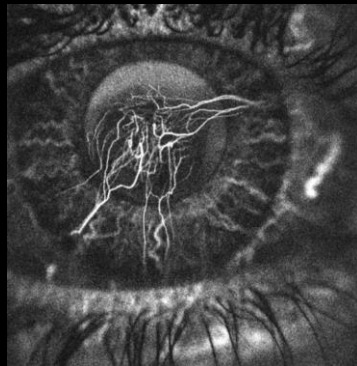
# Staging / Caratterizzazione CoNV



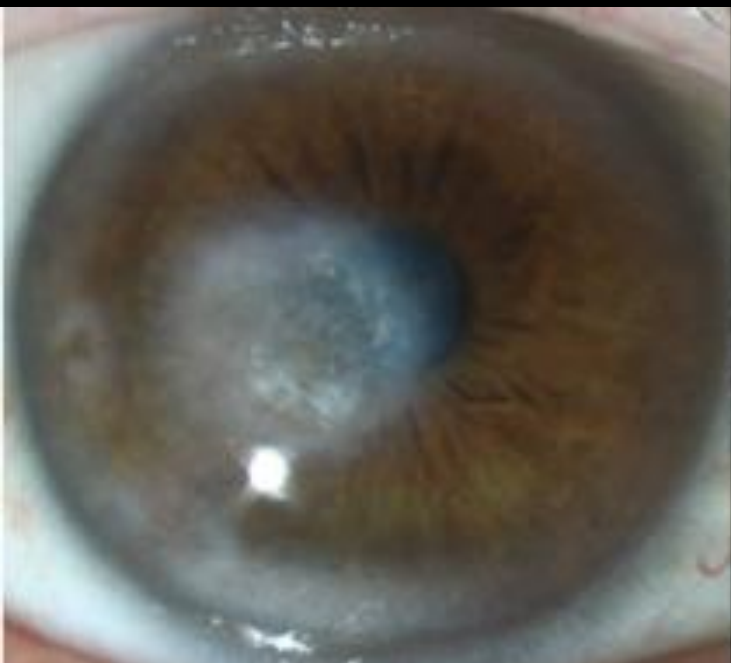
FA



ICGA



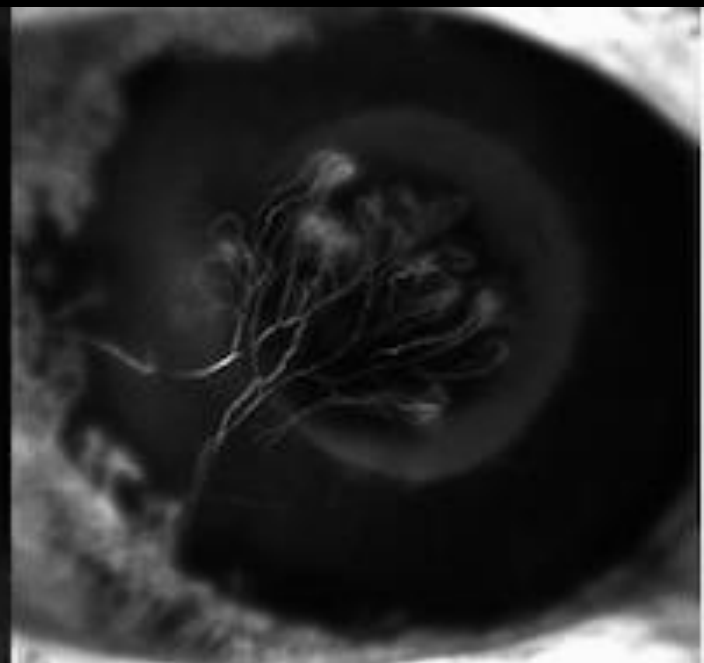
Color photo



ICGA



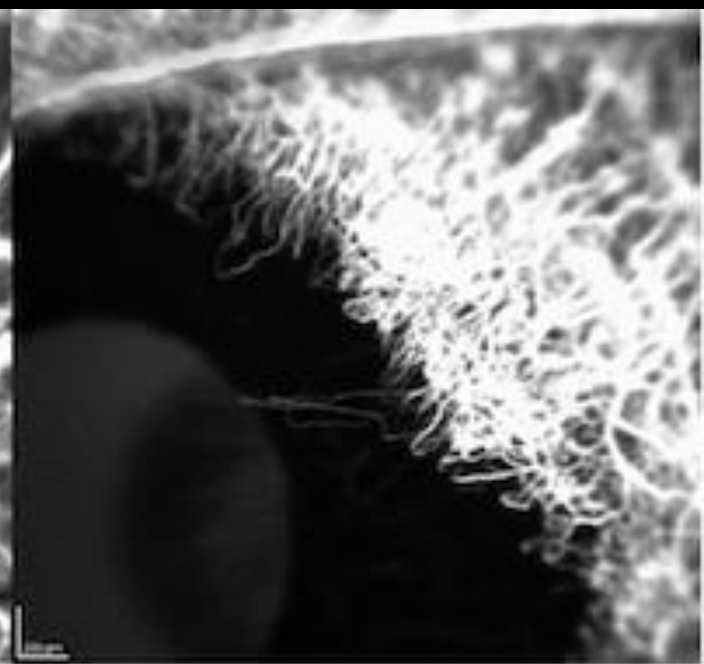
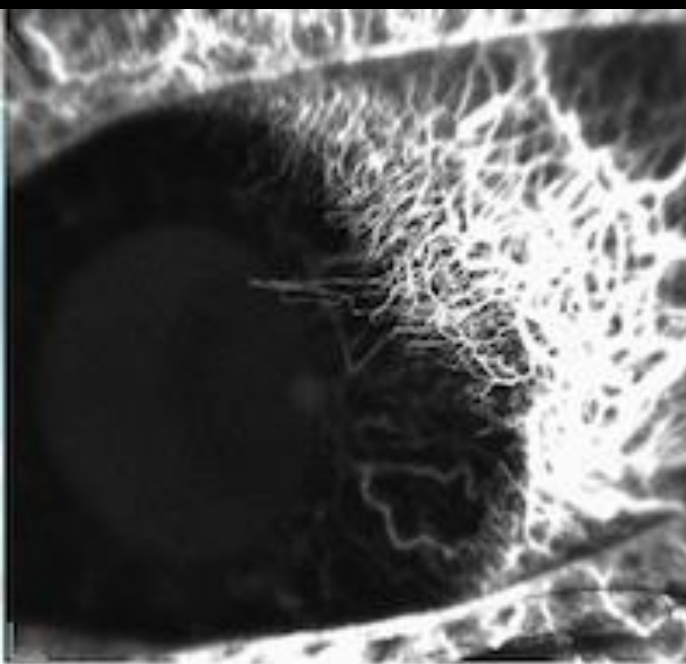
FA



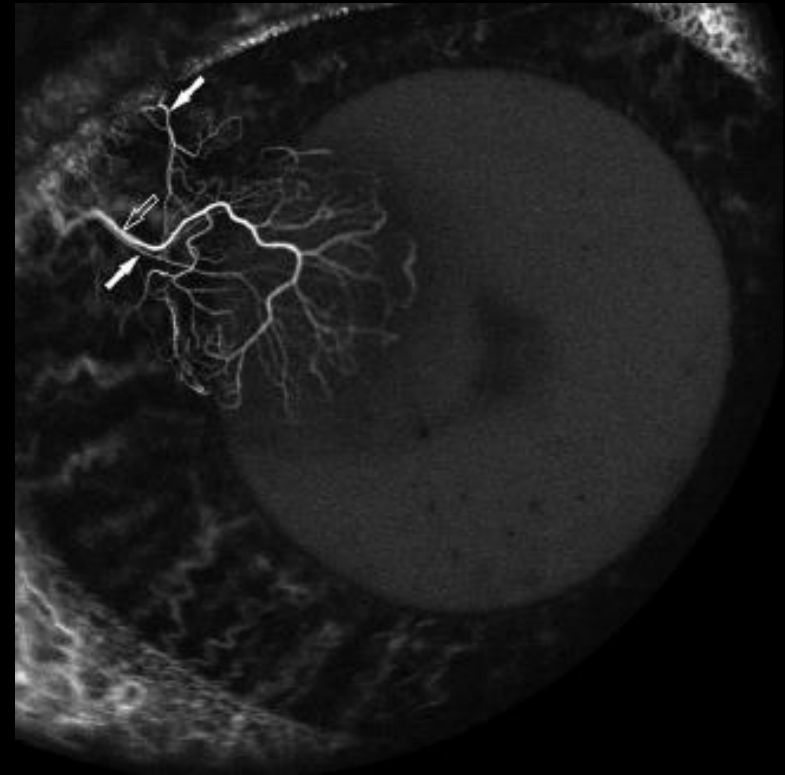
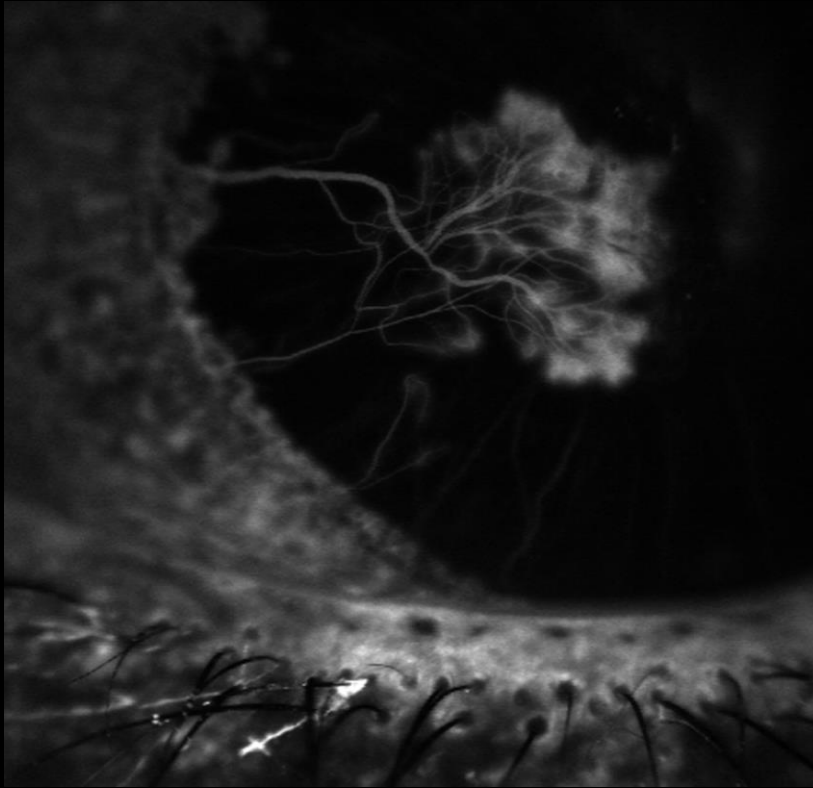
Color photo

ICGA

FA



# Staging / Caratterizzazione CoNV



FA

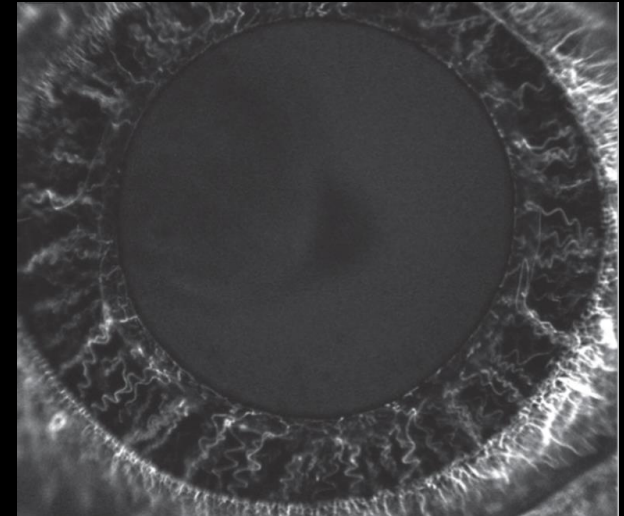
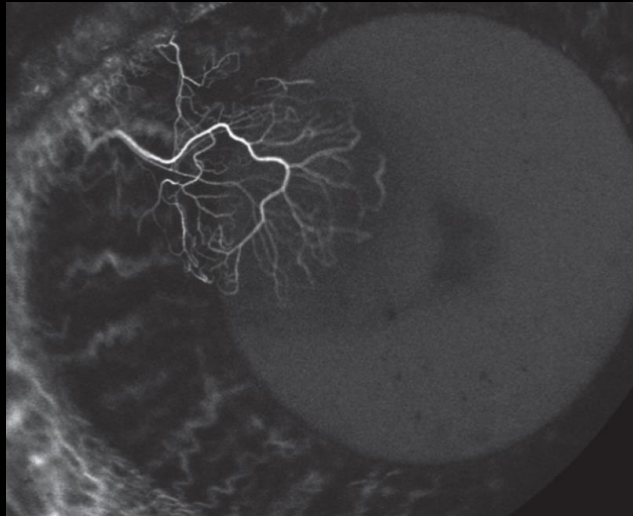
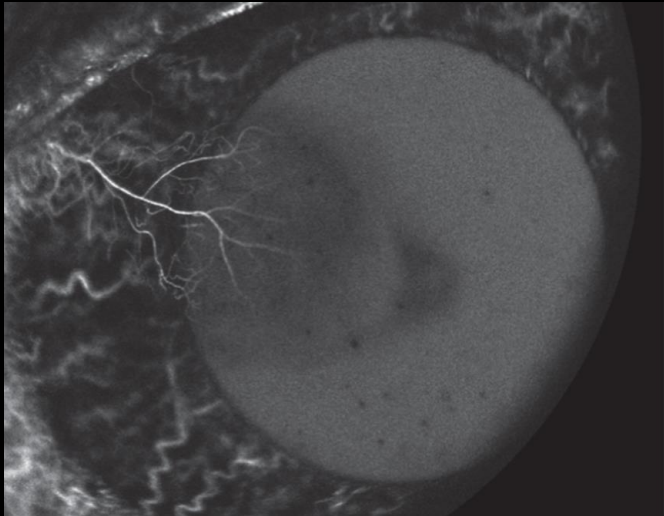
leakage è indicativo della **maturità** dei vasi, utile nella valutazione della risposta al trattamento medico

ICGA

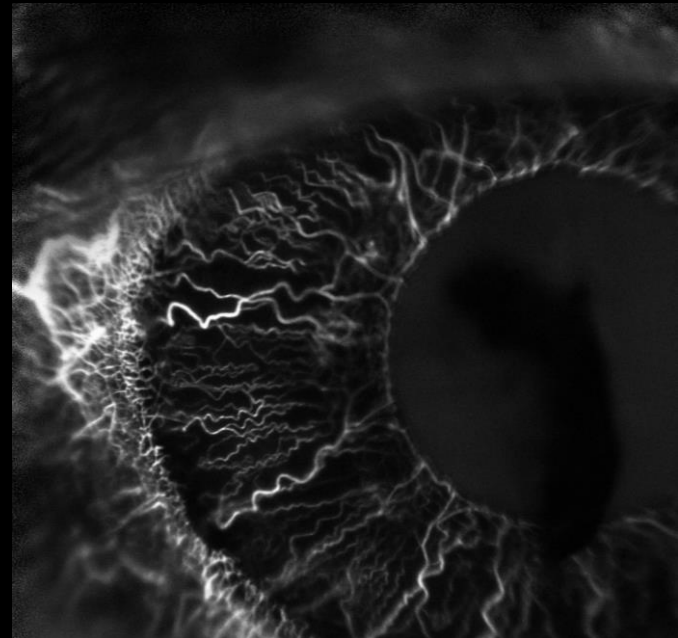
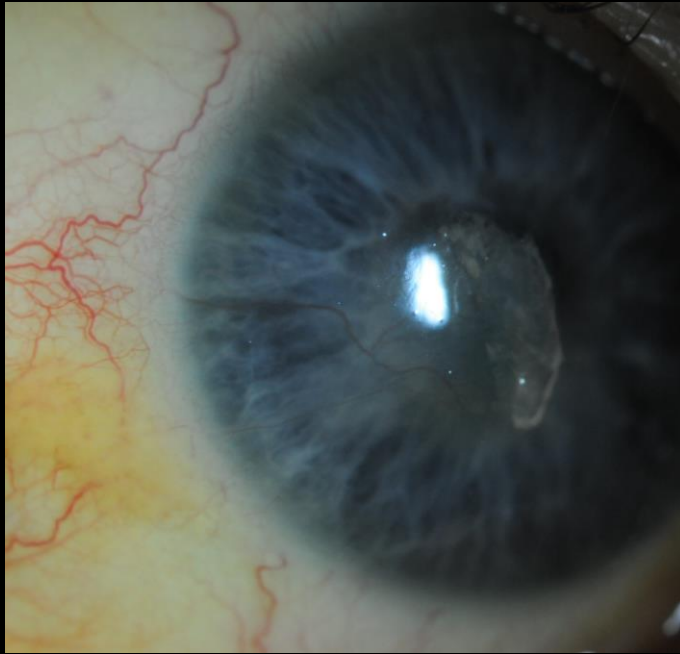
definisce l'**architettura** della CoNV, utile per guidare il trattamento chirurgico



# Selective FND



# Selective FND



# Quantificazione dei ghost vessels

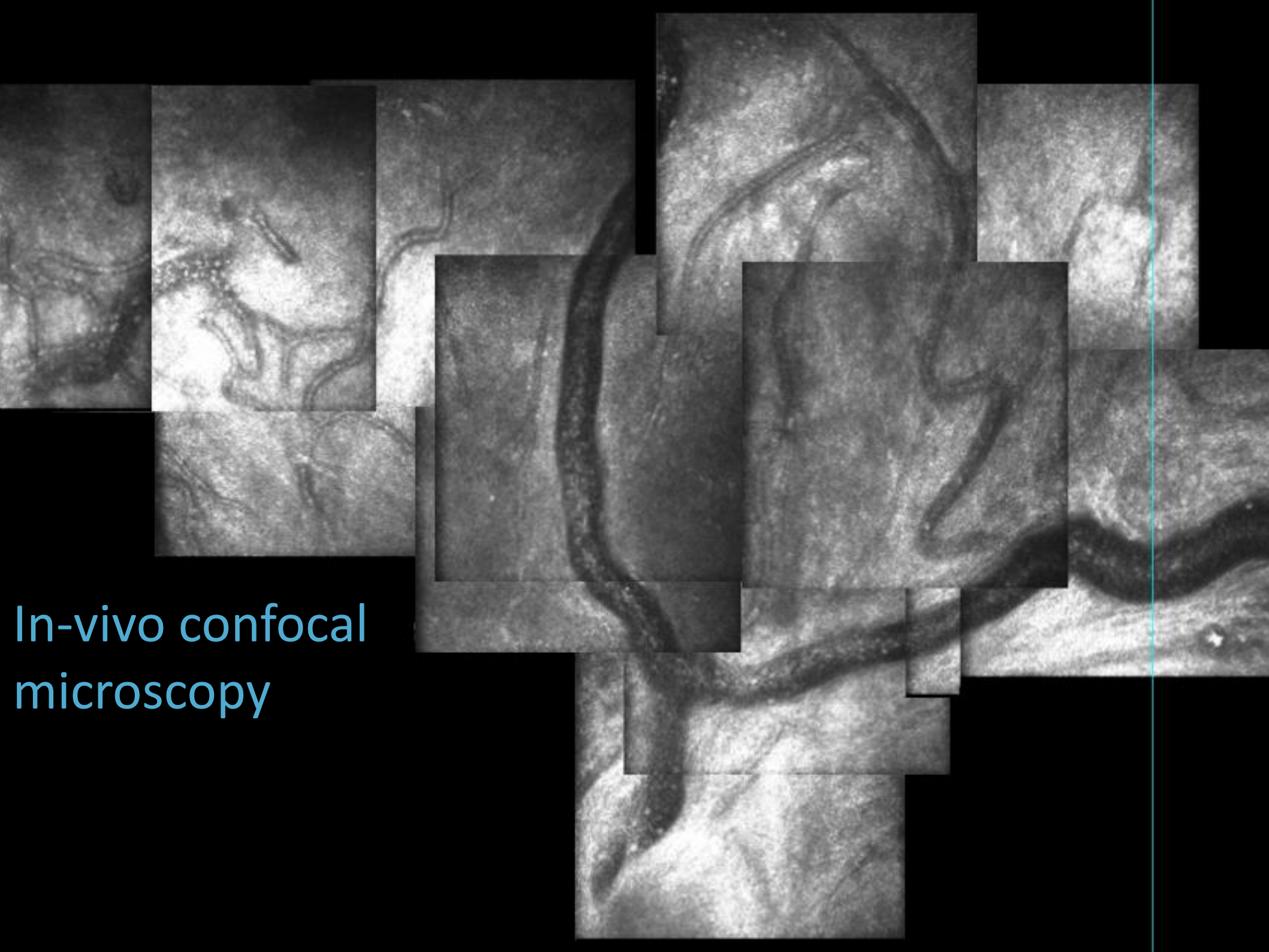
A fluorescence angiogram of a hand, showing a complex network of blood vessels. The vessels are highlighted in a bright, yellowish-green color against a dark background. The network is dense and intricate, with many small branches and loops. The vessels appear to be in various stages of development or repair, with some showing irregular shapes and others appearing more straight and uniform. The overall appearance is that of a highly vascularized tissue.

Lampada a fessura

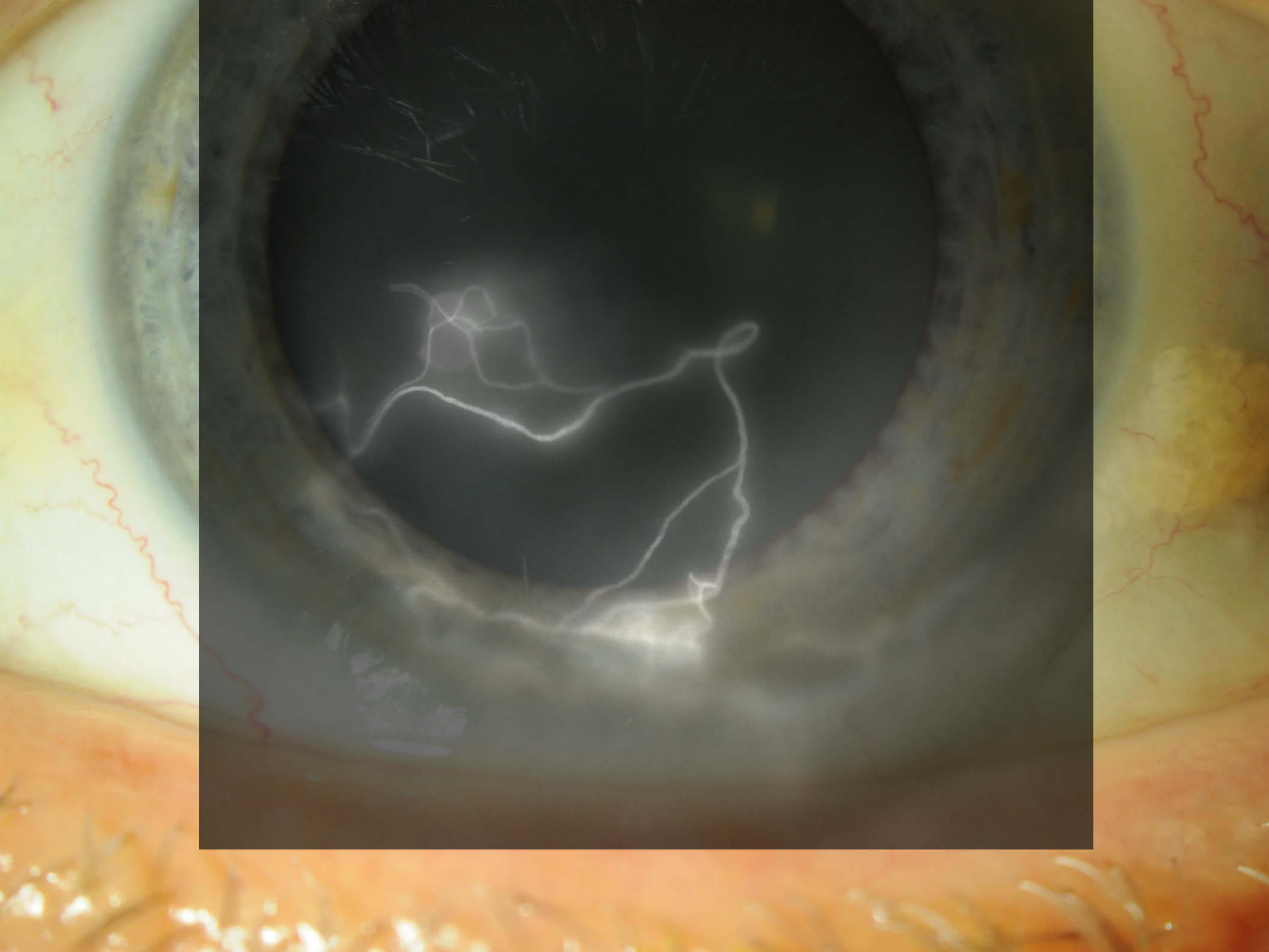
Angiografia

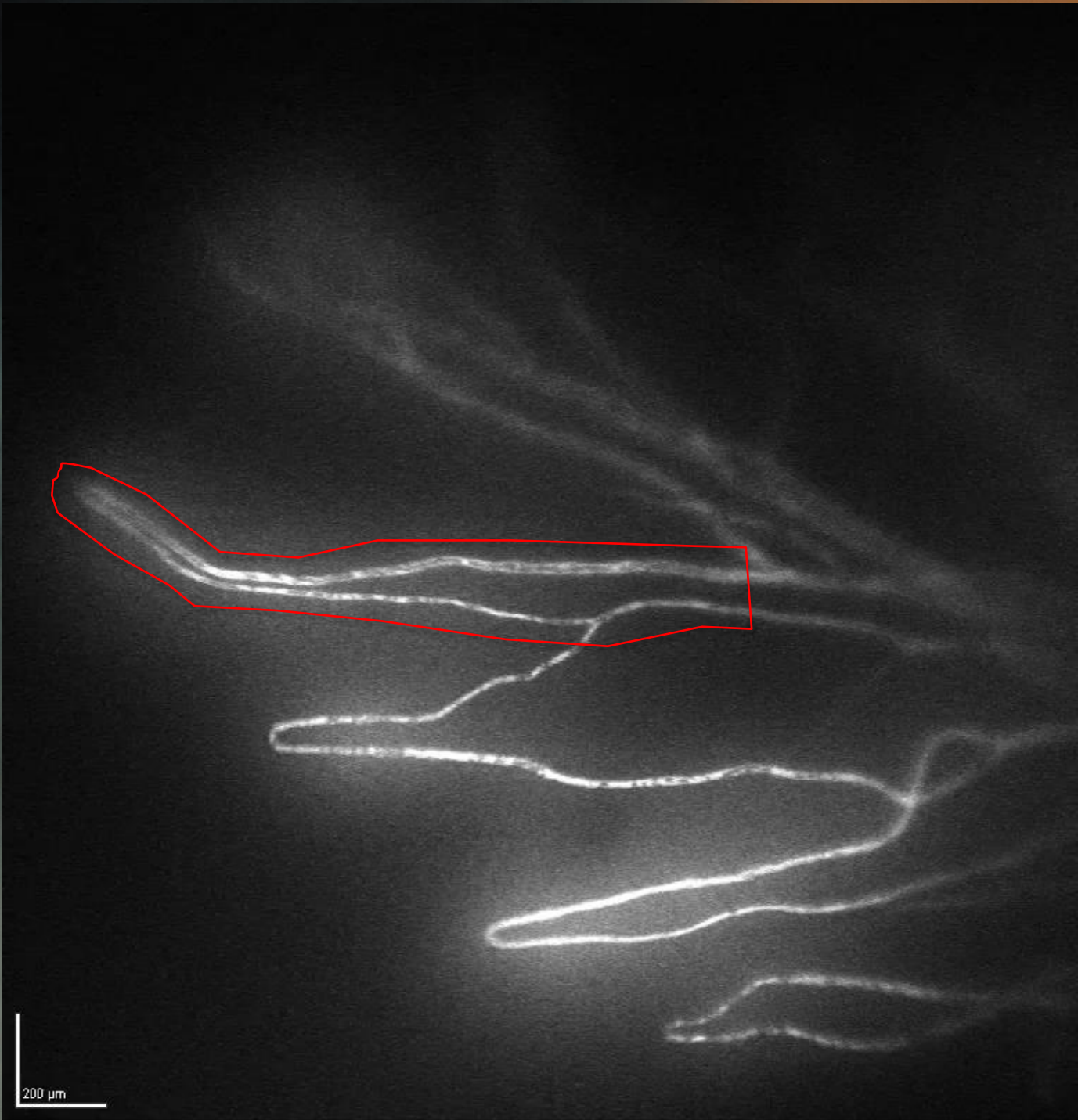


In-vivo confocal  
microscopy







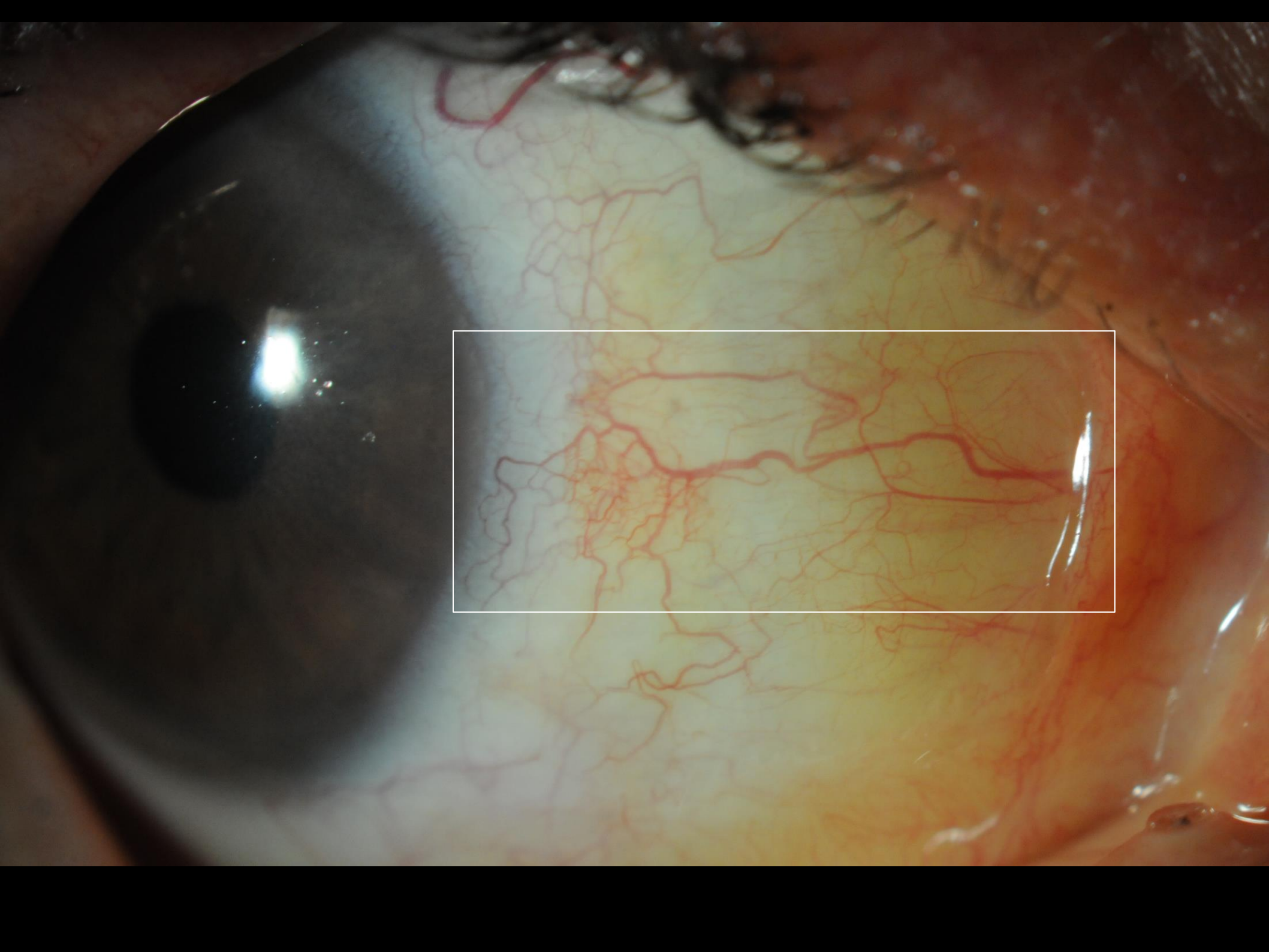




# In-vivo confocal microscopy

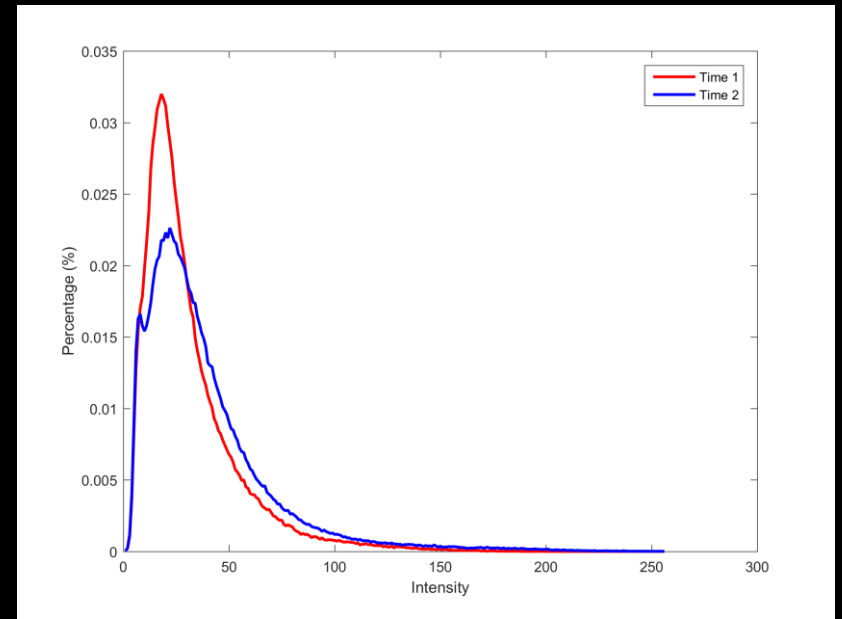
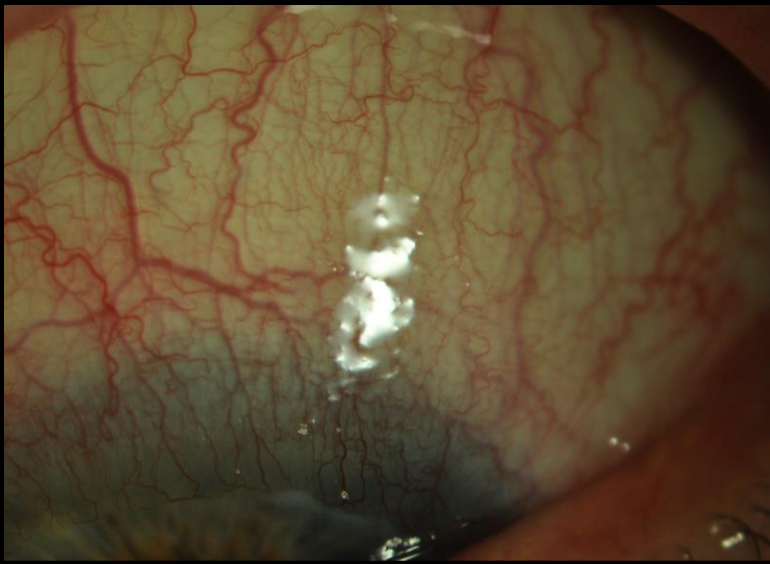


# Patologie infiammatorie della superficie oculare

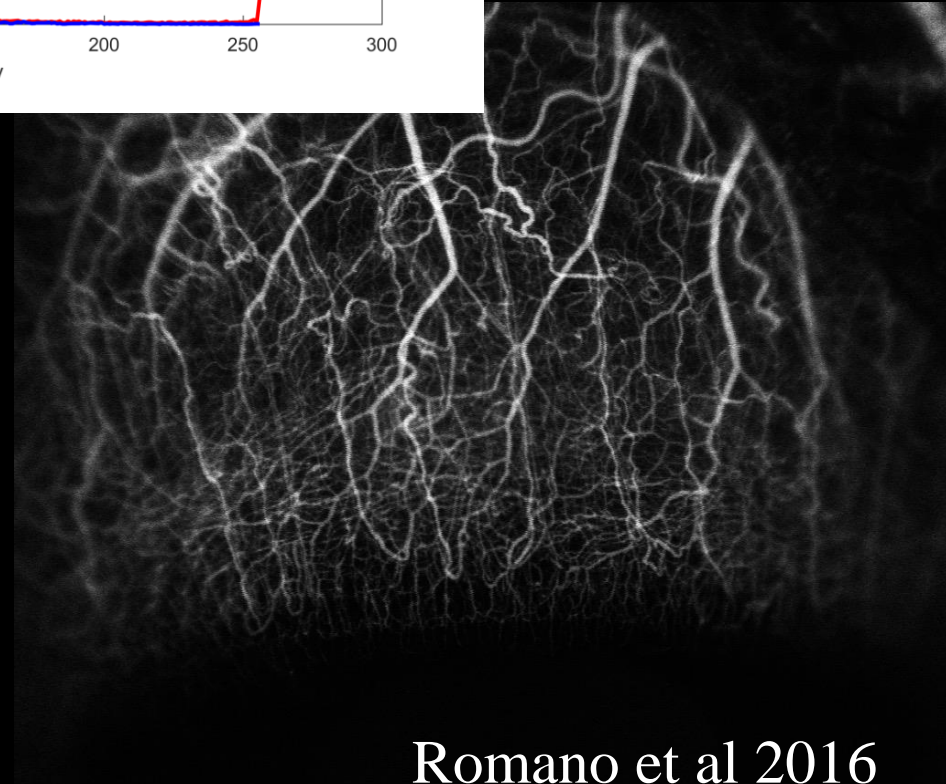
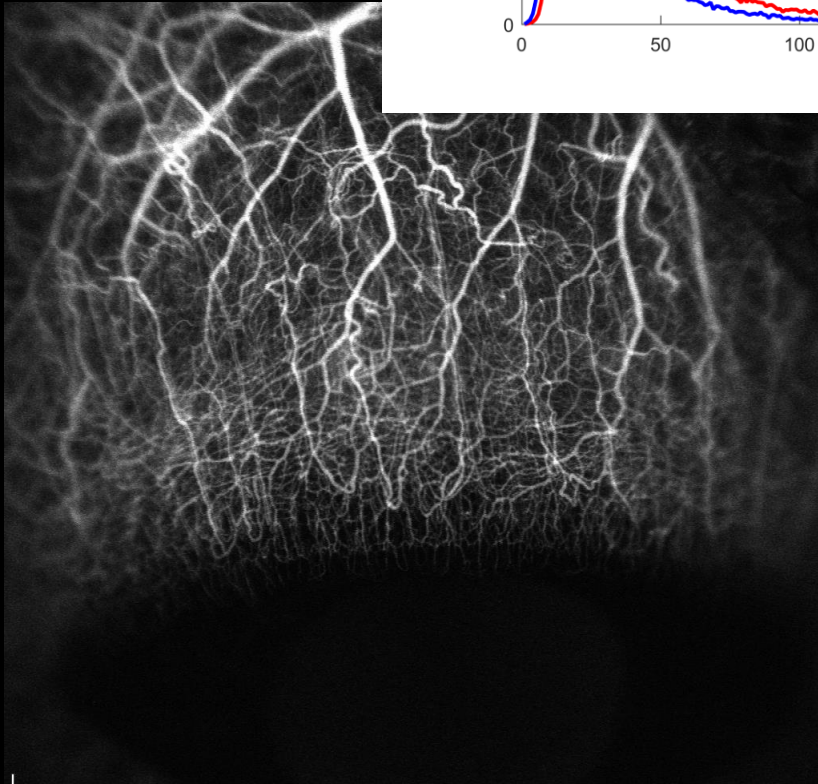
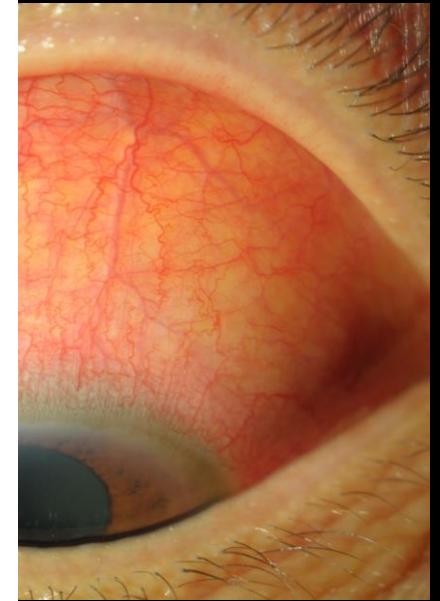
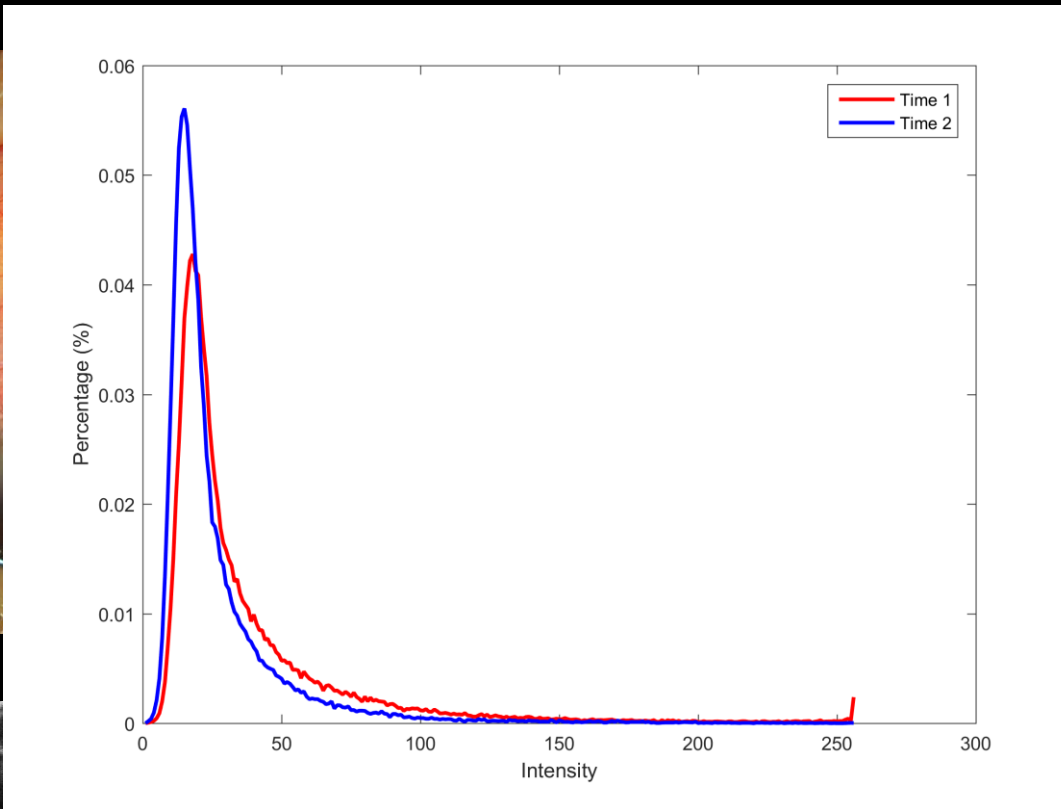
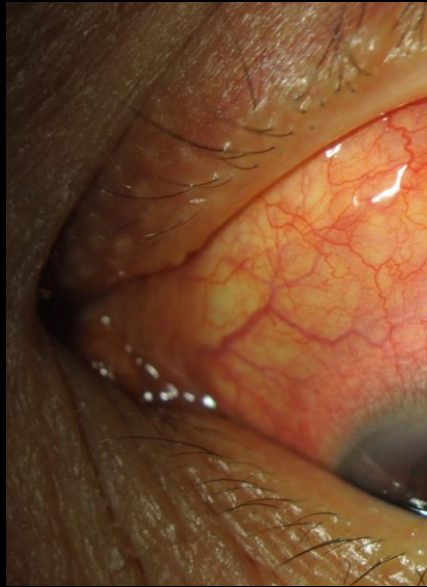




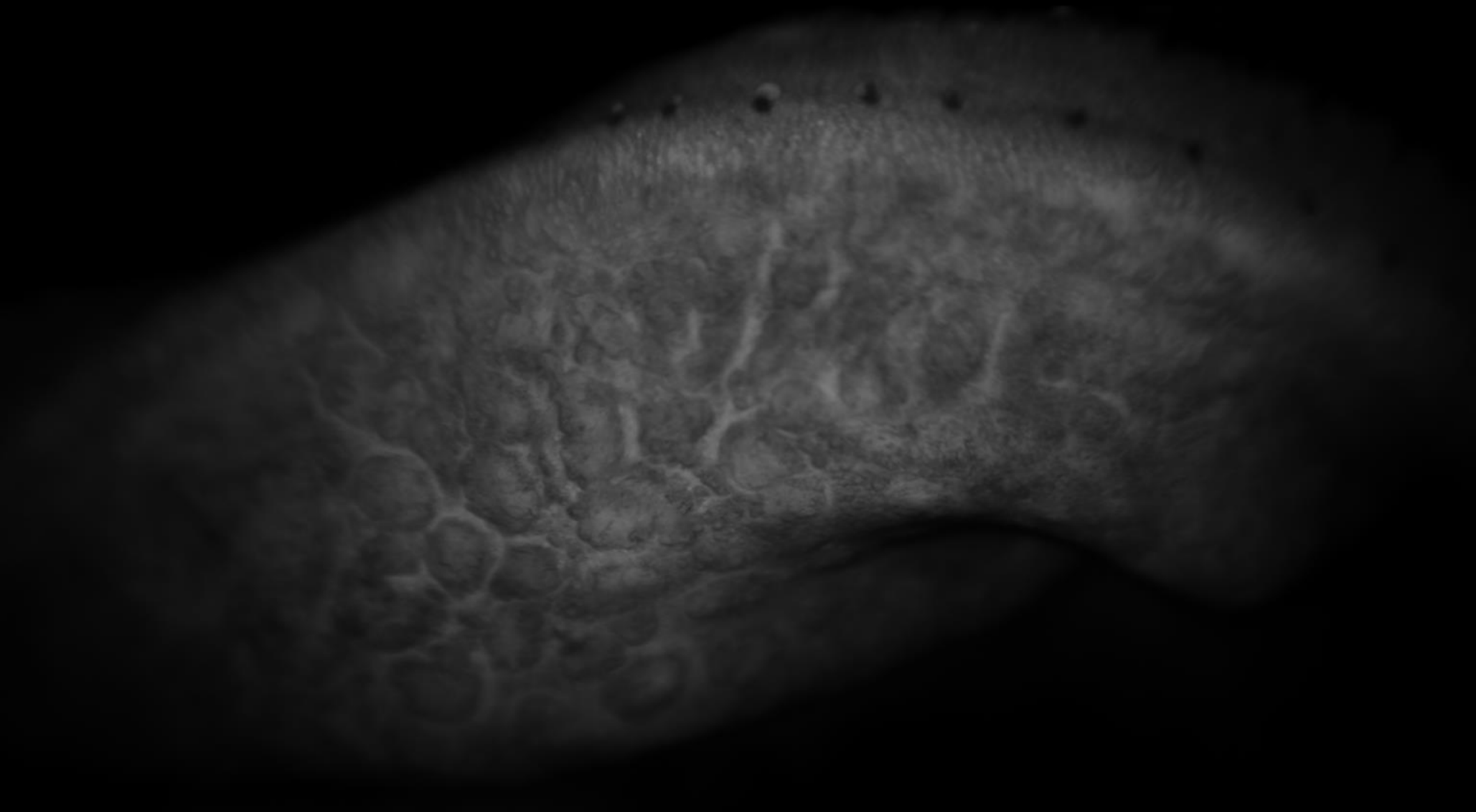




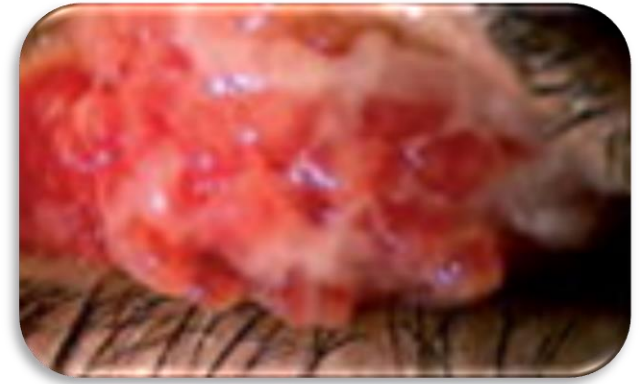
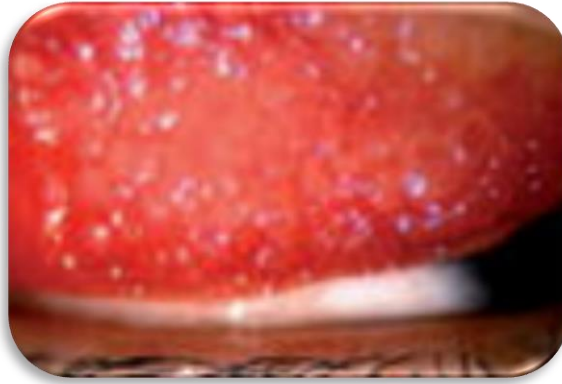




# Stadiazione delle congiuntiviti allergiche



# Congiuntiviti allergiche





# Grading alla lampada a fessura

0 - normal

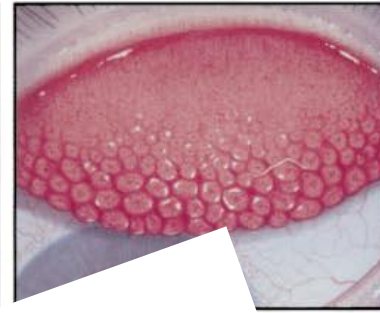
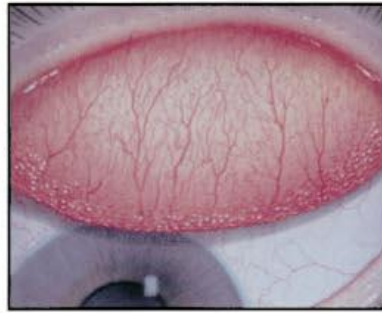
1 - trace

2 - mild

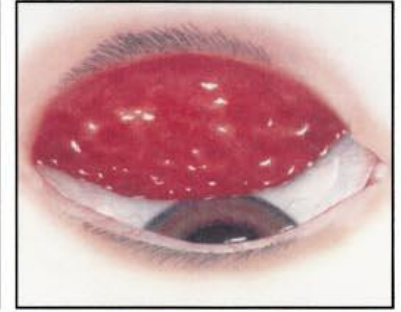
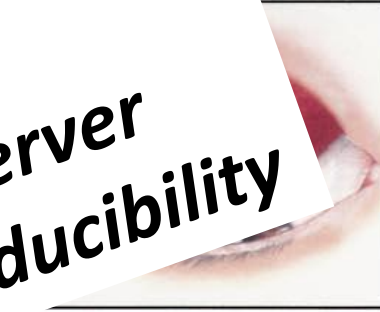
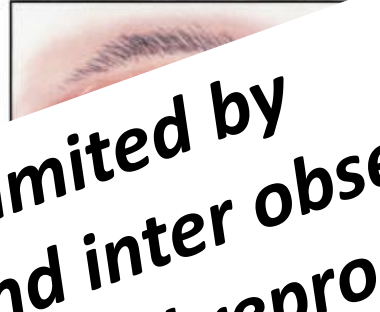
3 - moderate

4 - severe

Efron

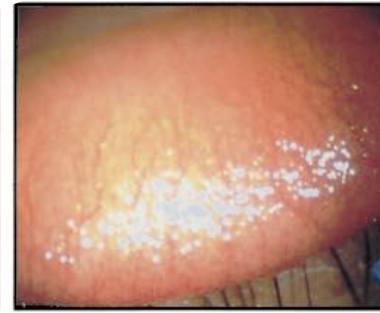


Annunziato

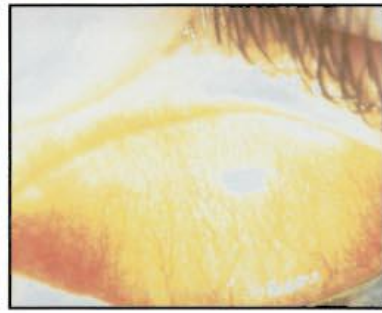


CCLRU

Grade 0 is not shown in the CCLRU system



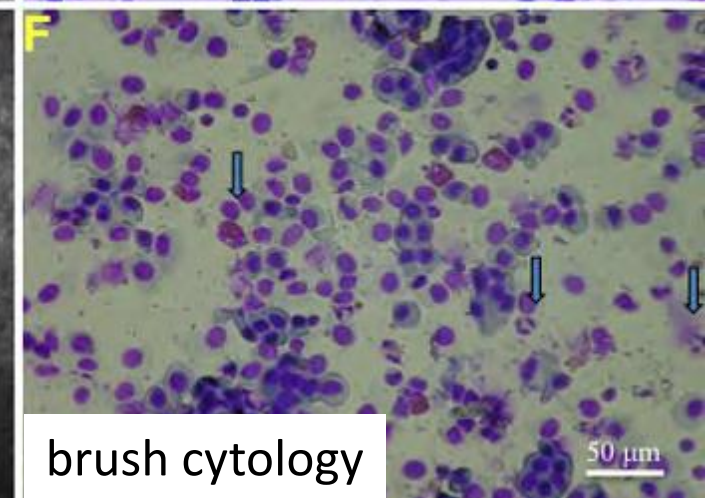
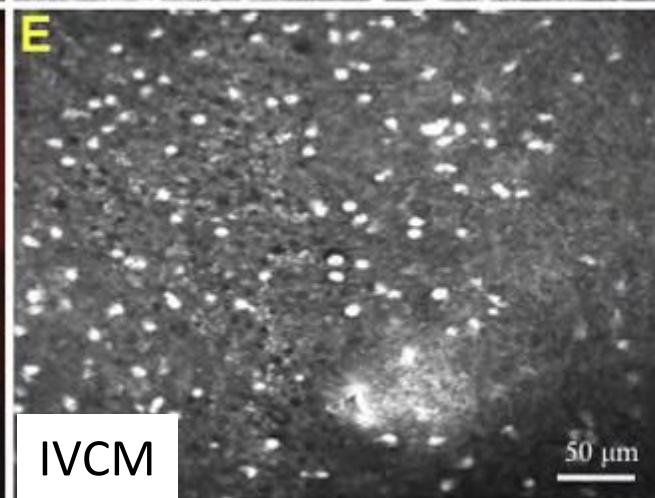
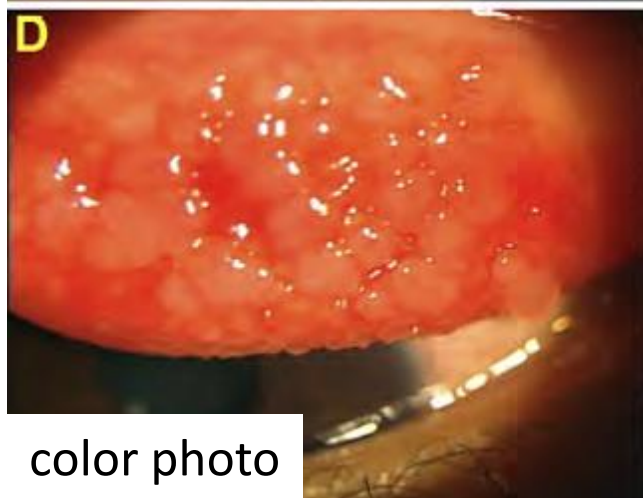
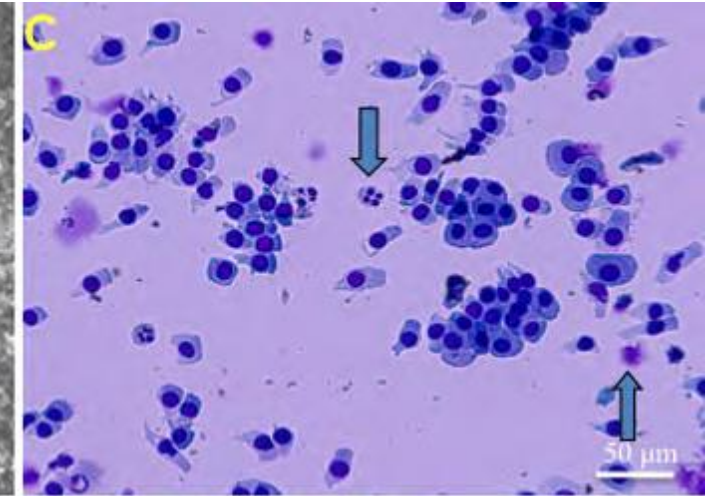
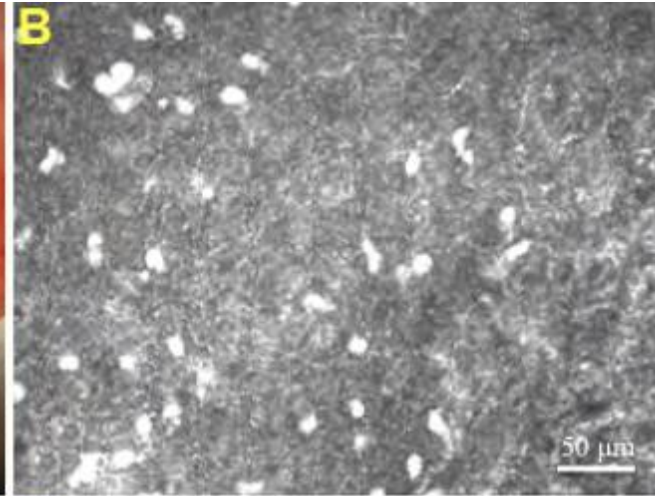
Vistakon



**limited by  
intra and inter observer  
variability and reproducibility**



# Microscopia confocale

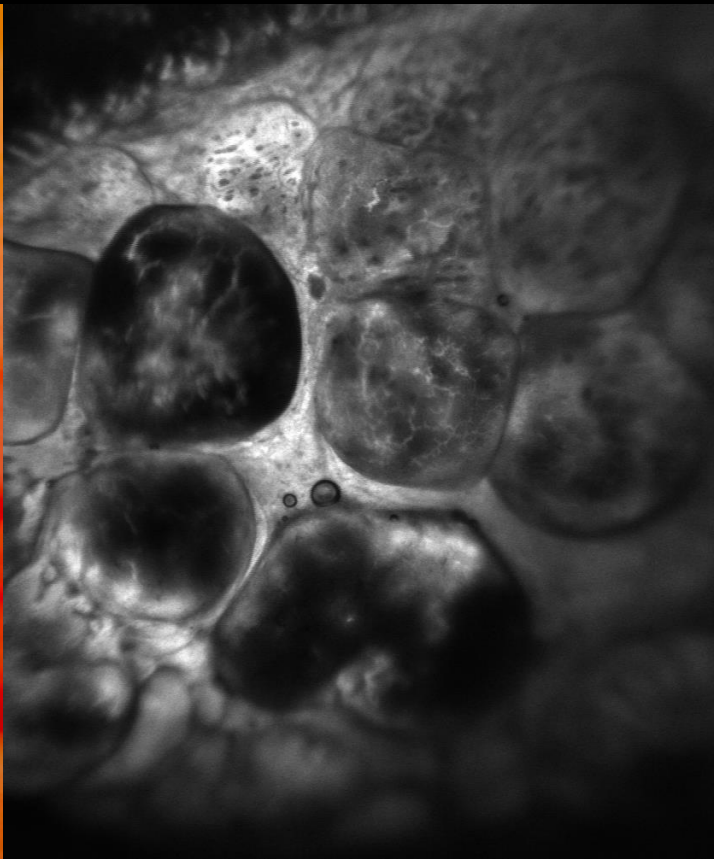


# Angiografia

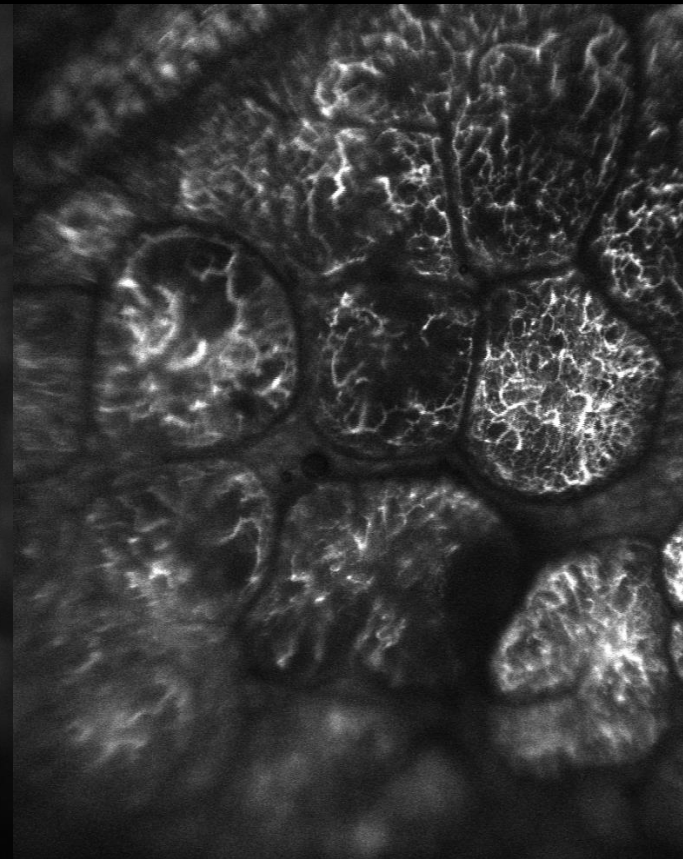
Color photo



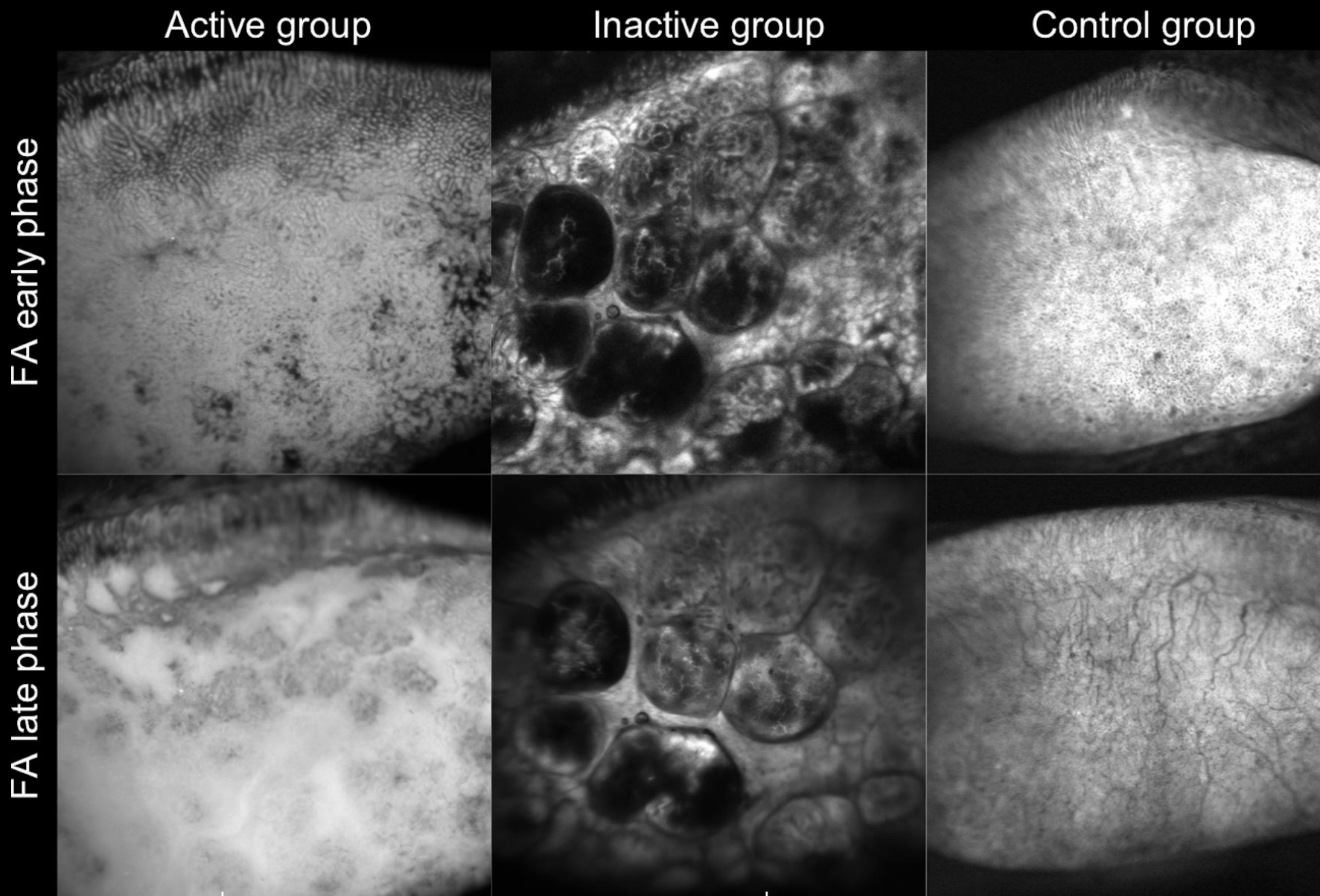
FA



ICG







	Extravascular leakage (sec)	Extraconjunctival leakage (sec)
Active	22.8 ± 5.9	63.5 ± 17.8
Inactive	26.3 ± 4.5	no FA leakage
Control	28.2 ± 4.4	no FA leakage

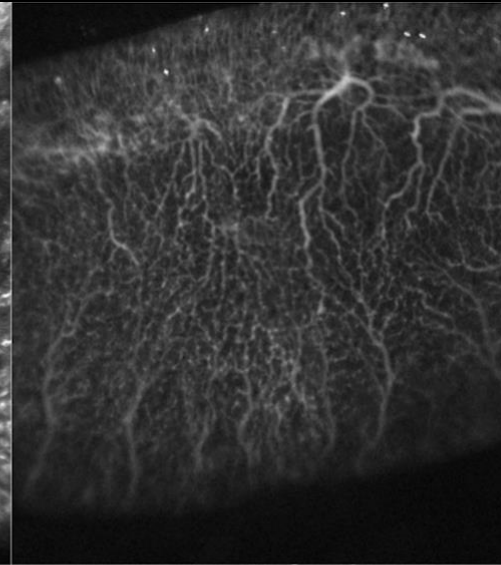
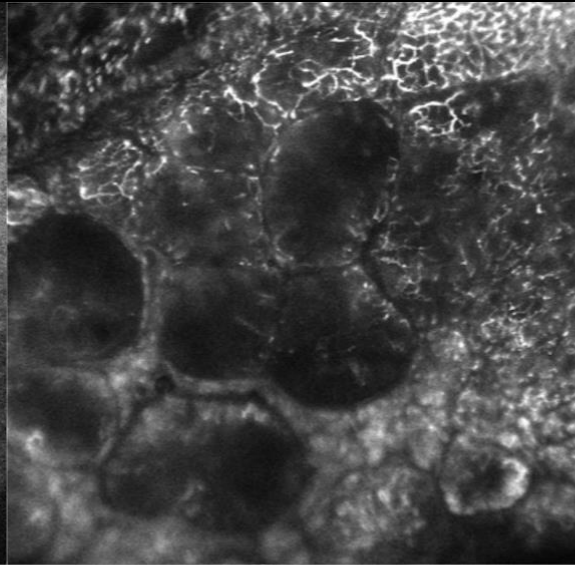
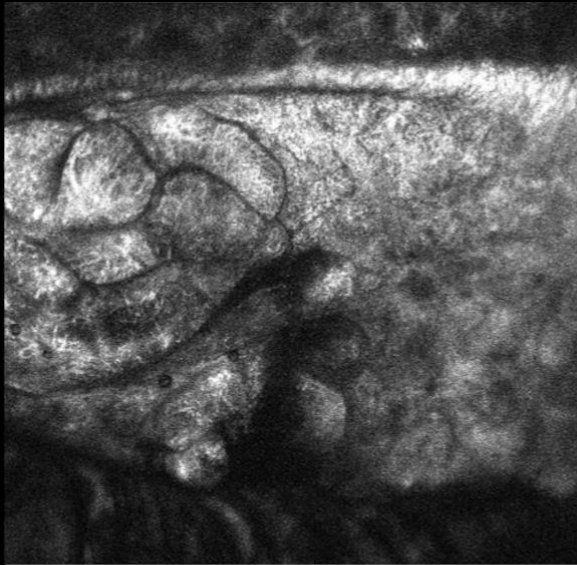


Active group

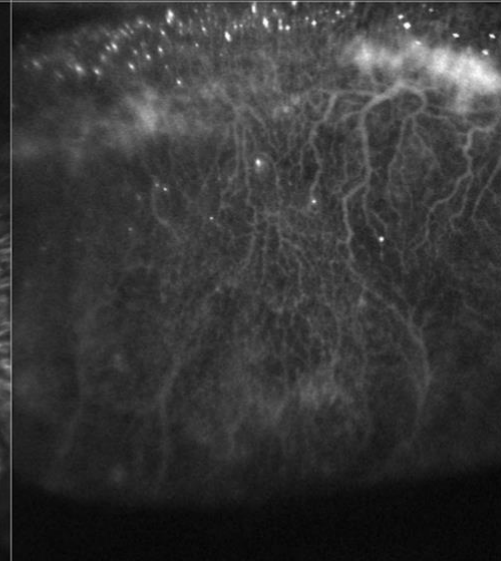
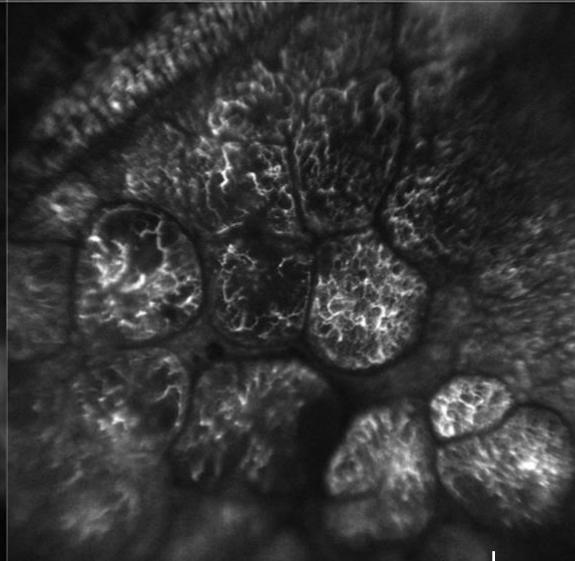
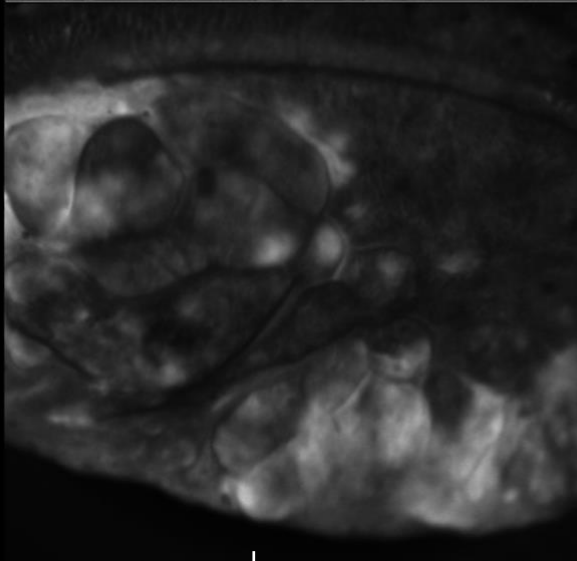
Inactive group

Control group

ICGA early phase



ICGA late phase



Extravascular leakage (sec)

Extraconjunctival leakage (sec)

Active

 $84.6 \pm 28.8$  $122.5 \pm 17.8$ 

Inactive

no ICG leakage

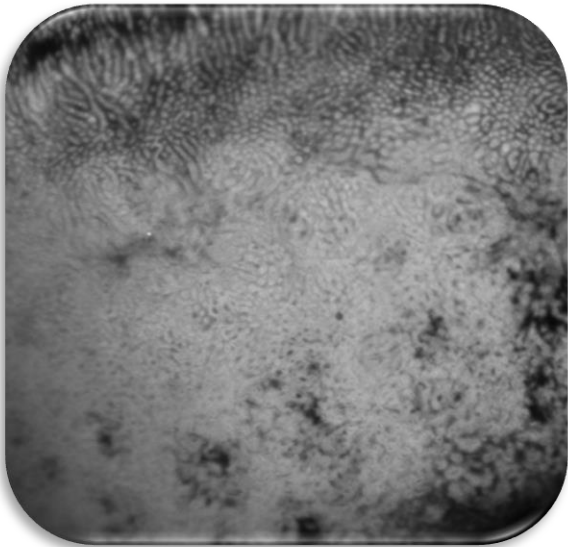
no ICG leakage

Control

no ICG leakage

no ICG leakage

extraconjunctival  
fluorescein  
leakage



extravascular  
ICG leakage



**markers of inflammatory disease**

# ANGIOGRAFIA SEGMENTO ANTERIORE

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Neovascolarizzazione  
corneale

- ✓ Caratterizzazione della CoNV (area, vasi)
- ✓ Staging CoNV
- ✓ Guida Selective FND
- ✓ Caratterizzazione ghost vessels

Patologie  
infiammatorie della  
superficie oculare

- ✓ Caratterizzazione dell'albero vascolare
- ✓ Guida il trattamento

Congiuntiviti  
allergiche  
giganto papillari

- ✓ Stadiazione
- ✓ Trattamento



# Acknowledgement

- Stephen Kaye
- Bernhard Steger
- Yalin Zheng

Grazie

vito.romano@gmail.com

**Angiography-guided selective arteriolar  
fine needle diathermy  
of corneal neovascularization (CoNV)**

**St Paul's Eye Unit  
Royal Liverpool University Hospital**