FA vs. OCTA?
The status of OCTA, ... today

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Gerd Klose
Fluorescein Angio
OCT Angio
FA vs. OCTA (?)
Benefits ...

- Useful for many pathologies
- High contrast, detailed images
- Supports wide-field imaging
- Choroidal imaging possible (w/ ICG)
- Well-established methodology
FA / ICGA … … with a flip-side … … Invasive & dye-based!

• Patient Discomfort
• Higher Clinical Effort
• 5% Adverse Effects: (nausea … shock … death)

with many risk factors (age, diabetes, allergies, organ insufficiencies, pregnancy …)
There is a constant balance between the clinical need and the risk of the diagnosis!

„What if you could reduce the number of FA exams…“
Fluorescein Angio

OCT Angio

FA vs. OCTA (?)
“OCT Angiography” sounds promising …

Presentations and Publications show so many nice images from OCT Angiography …

... providing fine structural details and 3D information

... non-invasive, quick and easy for patients & staff

... noncritical for sensitive patients, and allows frequent follow-ups
How does it work?

Difference $\Rightarrow$ Bloodflow

Average $\Rightarrow$ Structure
How does it work?

Angio Cube Scans:
- 6x6 mm, 350 Ascans (17 um)
- 3x3 mm, 245 Ascans (12 um)

Angio and Structure are complementary, you want to look at them side-by-side!
Quality Images …
… require care at all levels

• Fast & Artifact-free Acquisition with Active tracking / Re-scan

Quality Images … … require care at all levels

- Post-Acquisition Multi-Step Motion Correction
- Correction of Projection Artifacts

Corrected Deeper Retina
OCT-Angiography provides 3D information

- Chorio-capillaris Slab
- Retina-Slab
- VRI- or Custom-Slab
- Choroid-or Custom-Slab
  - Superficial
  - Deeper
  - Avascular

ILM to ...
... 70 um above RPE-fit
...the Development will continue

Larger Areas with Stitching

Quantification

Faster Swept-Source OCT-Angiography

3x3 mm

6x6 mm

12 x12 mm

AngioPlex – OCT Angiography

... simply another scan that works
Fluorescein Angio
OCT Angio
FA vs. OCTA (?)
FA / OCTA …
… how about clinical usability

FA detects the presence of dye/blood
OCTA detects the flow of blood

It is not identical, but similar …
…and both can be utilized to visualize vasculature, (but not leakage or pooling)

Pathologies resulting in neo-vascularization, low- or non-perfusion, and occlusions can be visualized!
FA / OCTA …  

… how about clinical aspects

⇒ many Clinical Cases have already been presented

… and many more to come:

- Diabetic Retinopathy (prolific / non-prolific) (DR)
- Central/Branch Retinal Vessel Occlusion (BRVO/CRVO)
- Age-related Macular Degeneration (AMD)
- Polypoidal Choroidal Vasculopathy (PCV)

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- Macular Telangiectasia (Mactel)
- Coats’ like Exudative Maculopathy
- Sickle Cell Maculopathy
- Ocular tumors

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- Glaucoma
FA / OCTA ...

... DR

+ Visualization of Neo-vascularization

+ Micro-aneurysms

+ timely follow-up on photo-coagulation
+ novel combination treatment with anti-VEGF

+ non-perfusion, ischemic areas

- but often in periphery ...
- limited sensitivity to aneurysms
- limited cataract penetration

⇨ no 100% FA replacement (yet)
FA / OCTA ...

... BRVO, CRVO, etc.

+ non-perfusion
+ remodeling of vasculature
+ new treatment possibilities
+ detailed images of neo-vascularization

- limited in covered area & periphery
- hemorrhages in acute phase
- visibility of aneurysms, edema

⇒ no 100% FA replacement (yet)
FA / OCTA ...

... Wet AMD & PCV

+ detailed visualization of CNV lesion

+ visualization of choroidal feeder trunk

+ GA acts as window to choroid

+ “Treat and Extend” follow-up with OCTA

+ Choroidal NV & polyps

- limited in covered area
- Treatment decision still triggered by Edema
- Limited choroidal and small polyp visualization
→ no 100% FA replacement (yet)
FA / OCTA …
… Clinical benefits, today

FA / ICGA is still needed!
… but in specific cases OCTA has already helped with differential diagnosis and improved treatment decisions …

… and there are immediate, general benefits:
“non-invasive” patient comfort & simplified clinical work
“3D details” potential improved treatment
“no dye” risk reduction “every FA replaced, helps” enabling fast follow-up

⇒ one last argument …
… no doctor using OCTA wants to give it up afterwards!
Fluorescein Angio
OCT Angio
FA & OCTA (!)
OCTA ...

... the future is bright

... the benefits are now, and only keep growing