

Visualization aids in VR interface disorders: What does the staining pattern tell us?

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Purpose:

To present different staining patterns in various macular diseases and discuss their significance with respect to the underlying pathology.

Introduction:

Ophthalmoscopically, many cases designed for macular surgery show subtle clinical findings that may be difficult to interpret. OCT has shown to be a valuable tool in planning the surgical strategy, and visualization aids allow meticulous surgery in these cases.

Methods:

Case demonstrations by video clips with corresponding OCT and FAG findings.

Results:

Preoperative OCT can assist in interpreting subclinical findings, in particular subtle foveal structural alterations and vitreoretinal interface changes. Intraoperatively, visibility of the transparent tissue components can be improved using supravital dyes and triamcinolone crystals. ICG and trypan blue show different staining patterns dependent on the type of tissue bound to, which allows us a kind of in vivo diagnosis of the structures operated on (cortex remnants, epiretinal gliosis, ILM). As triamcinolone mainly adheres to vitreous fibres, cortical remnants, a membranous posterior cortex and epiretinal membranes are distinguishable.

Conclusion:

Both, OCT findings and dye- or triamcinolone-assisted vitreoretinal surgery have significant diagnostic and surgical impacts. A significant number of eyes show complex vitreomacular changes, such as multilayered membranes in which vitreous, newly formed epiretinal tissue and an altered ILM are involved.

Take-home message:

The use of visualization aids during vitreous surgery does not only allow easier and more complete peeling manoeuvres (by a better contrast), but also enables us to distinguish between different tissue components.

