

EVER 2015 abstractiVit flux study:

Title: Imaging of intravitreal injected solution dispersion.

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Purpose:

In pharmacological vitreolysis the dispersion of ocriplasmin within the vitreous is linked to the extent of its activity. Researchers have been trying to visualize dispersion of intravitreal injected solutions using Indian ink or fluorescein, either with subsequent dissection or with endoillumination, both invasive methods that could influence the dispersion pattern. Therefore, this pilot study aims at investigating and identifying the best minimal invasive imaging method for visualizing the dispersion of an intravitreal injected solution.

Methods:

To determine the optimal imaging concentration, a series of 5 enucleated porcine eyes were injected with 0.1cc of 100%, 50%, 25%, 20% and 10% contrast medium, respectively. Injections were made using standard 1cc syringe and 30 gauge needle at 3.5mm from the limbus aiming at the center of the globe. Subsequently, the dispersion of the contrast agent was monitored using high resolution imaging methods: mammography and ultra high resolution computed tomography (UHRCT). For the latter, 3D reconstructions were rendered.

Results:

A 1:10 dilution mixture combined optimal visualization contrast with low viscosity of the injection solution using radiographic ultrahigh resolution mammography. Both mammography and UHRCT images were taken from two eyes; one with a slow injection, the other with a fast injection.

Conclusion:

3D reconstructed UHRCT images were favored over 2D mammography images for dynamic imaging of the intravitreal solution dispersion.

