Effect of optical coherence tomography scan pattern and density on the detection of full-thickness macular holes

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Summary

To evaluate the detection of small full-thickness macular holes (FTMH) by utilizing different OCT scan patterns.

Methods

The following OCT scan patterns were acquired from 25 eyes with small FTMHs using a SPECTRALIS®:

- 61-line raster volume scan
- 24-line radial scan
- 6-line radial scan was extrapolated from the higher-density radial pattern

The rate of missed FTMHs was analyzed for every scan pattern in each of the eyes.

Results

A substantial rate of FTMHs that was detected with the 24-line radial scan pattern was missed with the volume scan (20.0%) and the 6-line radial scan pattern (12.0%).

Conclusions

- “High density radial scanning demonstrated superior detection rates of small FTMHs compared to standard raster volume scanning.”
- “Failure to utilize radial scanning in the setting of suspected macular holes may lead to a delay in surgical treatment with attendant worse anatomic and visual outcomes.”