(X) R1 ( ) R2 ( ) R3 ( ) PG0 ( ) PG1 ( ) Estagiário ( ) Tecnólogo ( )
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Service (sector) Retina and Vitreous Nº CEP

FOVEAL CURVATURE - DETERMINING METHOD IN NORMAL SUBJECTS THROUGH OPTIMIZED OCT ANALYSIS.

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Purpose: To obtain accurate graphic representations of normal foveolar regions from optimized OCT scans. Methods: OCT scans of classic retinal diseases were digitally modified in five different algorithms: Gaussian smoothing, 32bit Grayscale, Soft Find Edges, Solid Find Edges and Bit Scaling in Corel Photo Paint 10™ software. These obtained images were subject to analysis by five retina specialists. The algorithm giving the most useful details of foveal architecture was then chosen . Subsequently, OCT's of three normal patients were carried out as controls. Three 4mm horizontal and three 4mm vertical scans of the central fovea were performed. The algorithm chosen by the specialists was applied to these scans. The deepest horizontal and vertical scans were selected and the 1.5mm central curvature (corresponding to the histologic fovea) was determined through high zoom manual drawing. Results: Horizontal and vertical curves were reproducibly obtained, which corresponded to the central 5 degrees from the foveola. Conclusions: This method gives graphic representation of the normal foveal curvature and may help ophthalmologists determine perspectives for newer diagnostic tools, as well as provide help in understanding low vision adaptive optics in macular disorders.