Automated segmentation of optic nerve head for the topological assessment

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Abstract

An automated method is proposed to detect the optic nerve head (ONH) surface profile for the three-dimensional reconstruction of the ONH surface topology and for the determination of the optic nerve head surface depth (ONHSD) and optic nerve head surface volume (ONHSV). The proposed automated method was evaluated in 15 optic disc center B-scans and was compared to the manual detection method. The results showed a good agreement between the measurement of ONHSD (0.7% ± 1.0%) and ONHSV (-1.4% ± 3.2%) using manual and automated ONH profile, respectively.

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