Spotting peripapillary intra-choroidal cavitation using OCT

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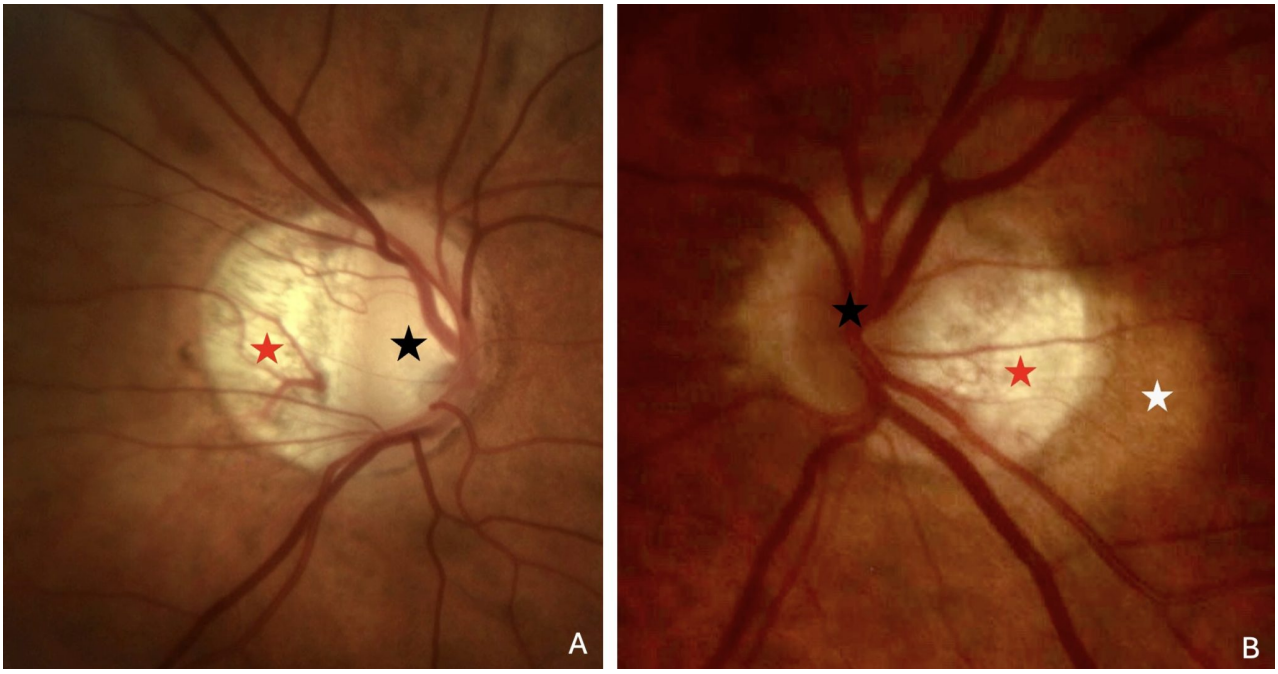

Figure 1. photo of a peripapillary intrachoroidal cavitation. The crescent-shaped atrophic area (red star), at the border of the optic nerve head (black star), called myopic conus, is alone in (A). It presents a circumscribed, yellow-orange lesion (white star) at its outer border in (B), corresponding to the peripapillary intrachoroidal cavitation. Note: Figures 1 and 2 are reprinted from Peripapillary Intrachoroidal Cavitation. Adèle Ehongo et al. 'J. Clin. Med. 2023, 12, 4712' Originally published by and used with permission from MDPI.

Adèle Ehongo explores the potential of optical coherence tomography for diagnosing peripapillary intra-choroidal cavitation in myopic eyes

Highly myopic complications, including Peripapillary Intra-Choroidal Cavitation (PICC), underspin the burden of myopia, a condition expected to affect almost half of the global population by 2050. (1)

EASY – Think about it and avoid anxiety and costly assessments

PICC is a circumscribed, yellow-orange lesion located at the outer border of the myopic conus (2) (the crescent-shaped atrophic area at the border of the optic nerve head (ONH)) (Figure 1). It may suggest a choroidal tumor, leading to unnecessary and anxiety-provoking assessments. (2) In up to 73.3% of cases, it is linked to visual field defects suggesting glaucoma, (3) especially since the yellow-orange appearance is absent in up to 53% of PICCs detected by Optical Coherence Tomography (OCT). (4)

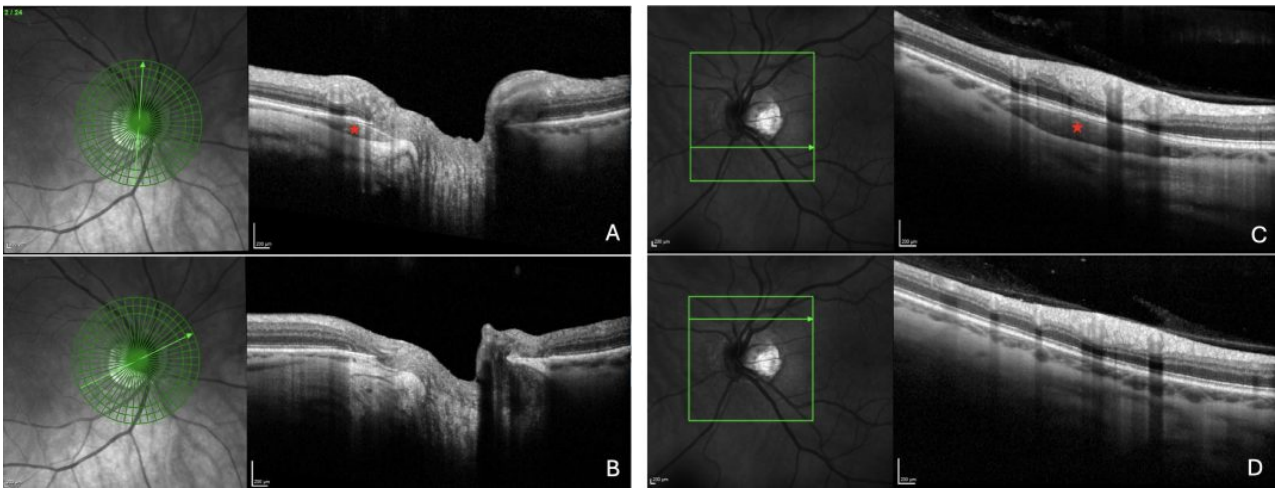

Figure 2.OCT features of peripapillary intrachoroidal cavitation. For each section, the green arrow in the infrared image indicates the location of the corresponding slice. The arrowhead indicates the right side of the OCT section.

Two radial OCT slices of the same optic nerve head, with (A) and without (B) a peripapillary intrachoroidal cavitation (PICC). The PICC appears as a triangular hyporeflective intrachoroidal thickening (red star) with its base at the ONH.

Two linear OCT slices of the same eye with (C) and without (D) PICC. The PICC appears as a hyporeflective intrachoroidal thickening (red star) without modification of the plane of the anterior structures.

FAST – PICC diagnosis at your fingertip thanks to OCT

A quick scroll through the radial OCT slices of the ONH, provided ready for glaucoma assessment, reveals a hyporeflective triangular intrachoroidal thickening with its base at the ONH, which characterizes the PICC [5] (Figure 2A-B).

Furthermore, in case of doubt, linear OCT slices ahead from the ONH disclose the hyporeflective thickening, whose structures in front retain their plane, [5] confirming the diagnosis of PICC (Figure 2C-D).

By integrating a quick overview of the radial slices provided for glaucoma assessment into daily practice, the clinician improves his glaucoma diagnostic skills and avoids costly and worrisome examinations for the patient, highlighting OCT as the recommended tool for PICC screening. [6,7]

CLEAR – PICC is a suprachoroidal detachment

Still, ahead of the ONH and nasal to it, we recently documented that oblique OCT sections parallel to the major temporal blood vessels reveal the outer limit of the PICC where, thanks to the well-preserved appearance of the structures, the PICC is clearly revealed as a suprachoroidal detachment [6,7] (Figure 3).

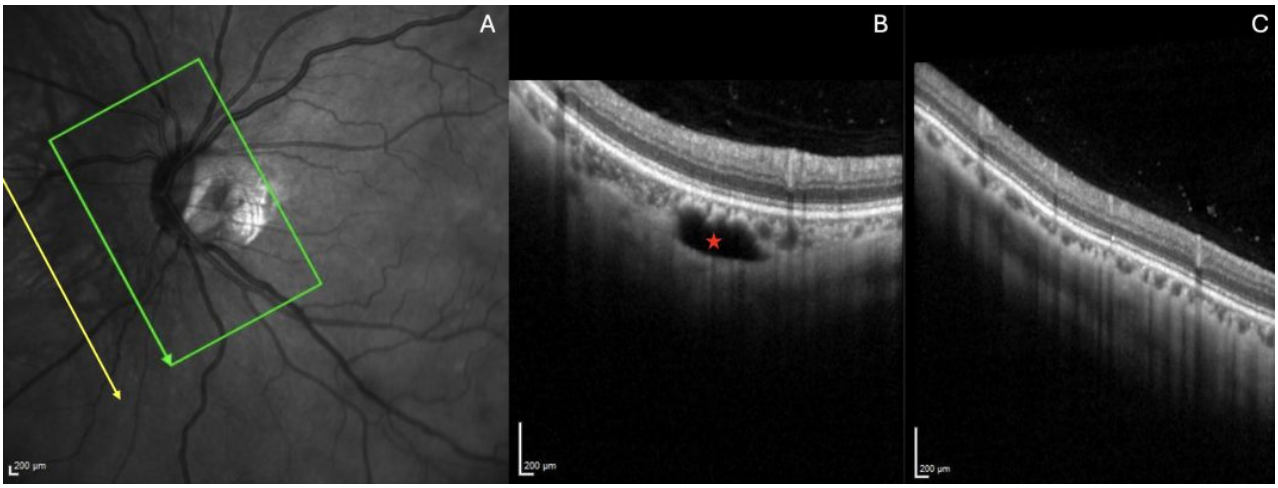

Figure 3. PICC is a suprachoroidal detachment. The green and yellow arrows on the infrared image (A) indicate the location of sections (B) with PICC (red star), and (C) without PICC respectively. PICC clearly appears as a suprachoroidal detachment in (B).
Note: Reprinted from Analysis of Peripapillary Intrachoroidal Cavitation and Myopic Peripapillary Distortions in Polar Regions by Optical Coherence Tomography. Adèle Ehongo et al. 'Clinical Ophthalmology 2022:16 2617-2629' Originally published by and used with permission from Dove Medical Press Ltd.'

A CLUE – PICC and other myopic complications

How does this choroidal cleavage occur and why myopic eyes are more likely to develop PICC will be developed in a future edition, opening perspectives for understanding other myopic complications in order to mitigate the impact of this predicted myopic epidemic.

References

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