

Title: Posterior Vitreous Detachment: more a case of the fibronectin interface than the inner limiting membrane?

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Aim : Use the periodic acid shift and immunohistochemical staining to visualize the distribution of the inner limiting membrane components on eyes presenting **Posterior Vitreal Detachment (PVD)** as detected by **Optical Coherence Tomography (OCT)**

Methods: Porcine eyes with PVD confirmed by OCT were processed into paraffin tissue blocks. Transverse, serial 15 μm thick sections were cut. After deparaffinization and antigen retrieval stages, slides were incubated with selected primary antibodies. Amplification stages were performed before fluorescence visualization of the specified marker. Among the markers stained were collagen II and IV, laminin beta 2 and fibronectin. Periodic acid shift staining was also performed on adjacent cross sections to assess potential structural change (PVD). Images were acquired on a Zeiss microscope and image analysis performed using Metamorph software (Leica).

Results: Different distribution patterns in the retina were observed for the selected markers. The inner retina blood vessels were labelled by laminin beta 2, collagen II and IV. Laminin beta 2 and collagen II was revealed on the Bruch membrane. Collagen II, IV, fibronectin and laminin beta 2 were detected at the inner limiting membrane.

PVD area could be detected not only by periodic acid shift but also by fibronectin staining. Upon PVD, fibronectin staining completely migrated with the PVD front, cleanly detaching from the retinal cell layers.

Conclusion: Fibronectin staining can be used to detect and therefore confirm PVD presence in histological sections, even if the PVD has evolved beyond the point where it can still be detected by OCT.