

Age-related macular degeneration (AMD)

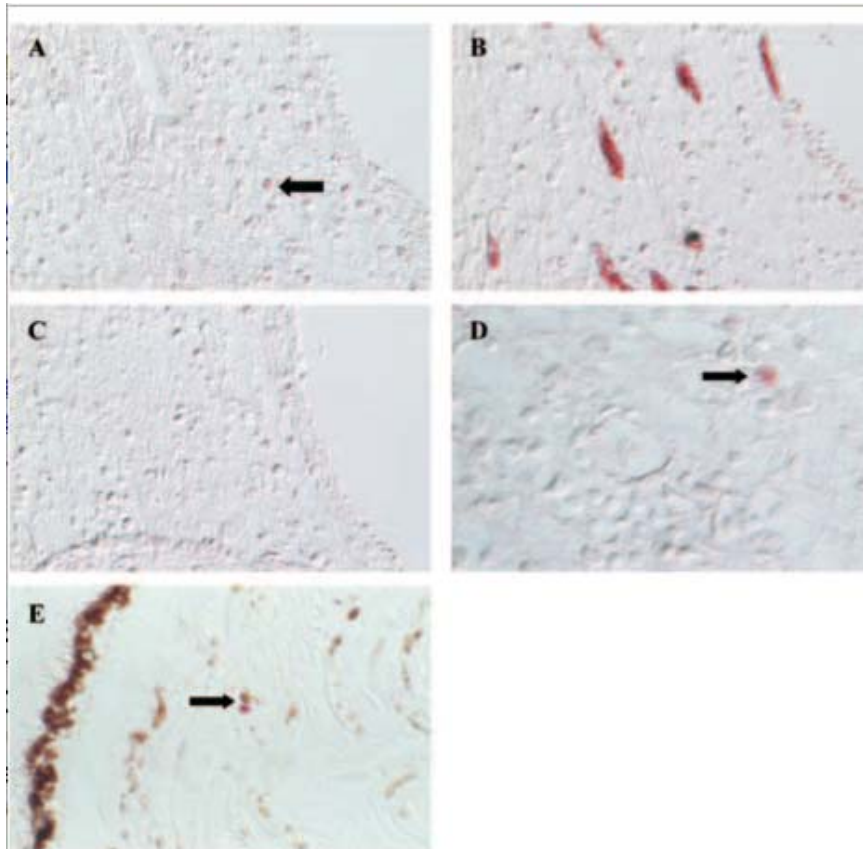


FIGURE 2. A cellular region within a CNV membrane has an isolated cell that was immunoreactive for AC133 (A; *arrow*). The sequential sections showed immunoreactivity for CD34 (B) and mouse IgG negative control (C). A high-magnification photomicrograph demonstrated an AC133⁺ cell (*arrow*) within the CNV (D). (E) Photomicrograph of a normal eye in the region of the ciliary processes which demonstrated a single cell (*arrow*) showing positivity for AC133 (A). AC133 positivity was not observed in any other ocular tissues studied ($n = 12$).

I have been developing surgery for AMD and its complications. The disease is characterised by new blood vessels forming underneath the retina. The natural history involves leakage from the blood vessels, haemorrhage and ultimately a fibrovascular scar. As a result of this process, there is destruction of the photoreceptors. We postulated that the new blood vessels form as a result of vasculogenesis as oppose to angiogenesis. Our study showed AC133 positive cells in the fibrovascular membranes removed at surgery indicating that bone marrow derived stem cells are involved in the neovascularisation.

Reference

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Retinal Detachment and Proliferative Vitreoretinopathy (PVR)

Retinal Detachment is associated with high myopia and there is a familial predisposition. Most retinal detachments occur spontaneously and are caused by a combination of intraocular currents, vitreous traction and the presence of retinal tears. Patients present with floaters sometimes referred to as *Muscae volitantes* (Latin: 'flying flies').

Once a detachment occurs the eye undergoes a modified healing process involving cellular proliferation, tissue contraction and laying down of collagen; this is referred to as Proliferative vitreoretinopathy (PVR). Unlike diabetic retinopathy, neovascularisation is not a feature. PVR is the main reason why surgery is unsuccessful in up to 15% of all patients.

Several earnest attempts have been made to use antimetabolites to control this wound healing process and increase the success rate of surgery.

References

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