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VISION ACADEMY VIEWPOINT

The Vision Academy is a partnership between Bayer and ophthalmic specialists, established with the aim of addressing key clinical challenges in the field of retinal diseases: www.visionacademy.org.

Management of Retinal Pigment Epithelium Tear During Anti-VEGF Therapy

Background

Age-related macular degeneration (AMD) is a chronic degenerative condition[1] that can lead to irreversible loss of vision.[2] Neovascular AMD (nAMD) is characterized by growth of abnormal blood vessels beneath the macula (choroidal neovascularization [CNV]), and is usually treated with anti–vascular endothelial growth factor (VEGF) agents.

Retinal pigment epithelium (RPE) tears are a relatively frequent occurrence in patients with nAMD and associated pigment epithelial detachment (PED), with reported incidence rates between 10% and 12% of eyes.[3] Visual acuity is frequently poor for these patients in the long term, particularly in the case of larger tears and if the foveal center is affected.[4]

In order to examine current evidence for the development of RPE tear during anti-VEGF therapy and determine how best to manage this condition, a literature search was conducted to:

- Address whether RPE tear development is attributable to the selection of an anti-VEGF agent, dosing, or injection frequency, rather than the natural history of PED in nAMD
- Explore how to identify patients at greatest risk
- Evaluate the most appropriate imaging techniques for documenting RPE tears, appropriate diagnostic criteria, and optimal management of patients with RPE tear

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Date of review: October 2025

Full consensus Variations in opinion

Viewpoint

1. A range of retinal imaging modalities are available for the diagnosis and monitoring of RPE tear. There are no officially recognized guidelines; however, the Vision Academy recommends a multimodal approach to provide the most complete information

These modalities include color fundus photography, optical coherence tomography (OCT), fluorescein angiography, OCT-angiography, near-infrared reflectance imaging, and fundus autofluorescence. RPE tears can be graded by size and foveal involvement.

2. Patients at high risk of developing RPE tear should continue treatment but be monitored carefully

The Vision Academy proposes that "high risk" be defined as the presence of one or more of the following risk factors at the onset or during the course of anti-VEGF treatment:

- Increased surface area and a large linear diameter of the subfoveal PED[4–7]
- A small ratio of CNV size to PED size[8]
- Serous vascularized PED (as compared to fibrovascular PED)[7,9]
- Presence of radial hyperreflective lines in patients with PED lesions[7]
- Recent PED (duration ⩽4.5 months)[10]
- Microrips in the RPE[11]

Patients with these risk factors should have a detailed examination after each anti-VEGF injection. Evidence to support suspension of anti-VEGF therapy in high-risk cases remains limited, but a stronger argument could be made to suspend anti-VEGF therapy if certain features arise that suggest the imminent development of RPE tear, such as "wrinkling" on OCT or "radial lines" seen on near-infrared reflectance, particularly in the presence of high-risk features such as multilobular PED.[12]

References

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3. After RPE tear develops, anti-VEGF treatment should be continued in most patients with active disease (as indicated by the presence of intra- or subretinal fluid) using an individualized approach, with careful and regular re-evaluation of retinal status and location of both tear and fluid

The Vision Academy does not currently recommend suspending anti-VEGF treatment in cases of RPE tear in patients with active disease, since patients continue to show benefit with anti-VEGF therapy after a tear has occurred. While this is advised for unilobular tears, cessation of injections should be considered in patients with multilobular tears.

Further considerations

Following RPE tear, some eyes may have marked progression of CNV lesion fibrosis and subsequently have greatly reduced exudative activity. These eyes should therefore be monitored and anti-VEGF treatment restarted if exudation recurs. It should also be considered that fluid leakage may occur secondary to the absence of RPE.[9] In patients with larger (grade 4) tears, sustained treatment may help to stabilize and prevent further visual deterioration, although the visual prognosis in these patients is generally poor.[4] Ultimately, anti-VEGF treatment cannot restore the disrupted interface between the photoreceptors and the RPE following a tear.

Given the possible etiology of RPE tears with the augmentation of choroidal neovascular membrane contraction, it is unclear whether changing the dosing schedule to include more frequent administration of half-dose anti-VEGF reduces the incidence.

Full consensus Variations in opinion

Vision Academy Viewpoints are intended to raise awareness of a clinical challenge within ophthalmology and provide an expert opinion to engage in further discussion.
They can be downloaded from https://www.visionacademy.org/resource-zone/resources/all
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