Top 12 wet macular conditions that do not require intravitreal anti-VEGF injections

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Introduction

- Intravitreal injections of anti-VEGF(vascular growth endothelial factor) drugs have revolutionised the management of wet age- related macular degeneration (ARMD), retinal vein occlusion (RVO) and diabetic maculopathy over the last 18 years in the UK.
- In the year 2022 over 677,000 intravitreal injections were performed in England alone (4796 per 100,000 population).
- In the UK over 75% of intravitreal injections are performed by allied health professionals such as nurses, optometrists and orthoptists.
- Although anti-VEGF injections are NICE approved for only 4 main conditions (wet ARMD, retinal vein occlusion, diabetic maculopathy and myopic choroidal neovascular membrane(CNV), clinicians are often faced with clinical presentations that mimic the above indications thereby making the clinical decision to treat or not to treat a particular patient with anti-VEGF injections difficult.
- In a typical NHS medical retina service with a large cohort of injection patients it is not unusual to find some patients with other varied pathologies receiving anti-VEGF injections with limited or no benefit.

Methods

- We have retrospectively reviewed the case records of patients attending rapid access clinics and intravitreal injection clinics over the last 4 years to identify macular conditions that mimic the four major NICE approved indications for intravitreal anti-VEGF injections.
- We identified our 12 most common macular conditions for which anti-VEGF therapies are not necessarily beneficial.
- We believe that it is important to highlight these varied pathologies to all clinicians to avoid inappropriate treatments.

Results

Top 12 wet macular conditions that do not require intravitreal anti-VEGF Injections

1) Adult vitelliform macular degeneration

2) Peripapillary pachychoroid syndromes

3) Central serous retinopathy

4) Intraretinal fluid overlying the old disciform scar.

5) Retinal pigment epithelial (RPE) rips involving the fovea

6) Old BRVO/ CRVO with extrafoveal macular oedema

7) Macular oedema/ bleed secondary to macroaneurysm

8)Peripapillary CNV without involvement of the macula

9) Macular oedema secondary to epiretinal membrane (ERM)

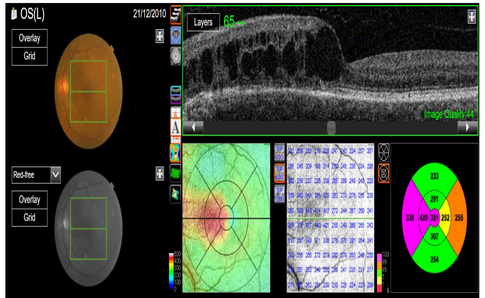
10) Inactive CNV: slow growing lesion with minimal fluid leakage and stable vision.

11) Transient foveal oedema due to microaneurysms close to foveola

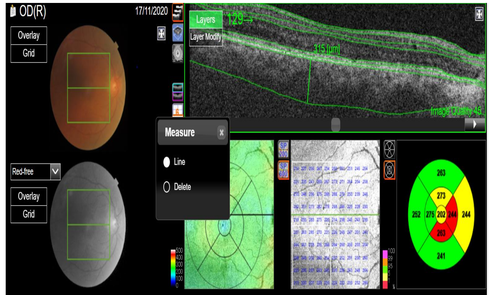
12) Macular oedema mistaken for vein occlusions and Diabetic maculopathy: Post operative cystoid macular oedema (CMO),CMO in hereditary dystrophies & Drug (toxic) related macular oedema

Peripapillary pachychoroid syndrome

A case of PPS with intra-retinal fluid in peripapillary zone without CNV

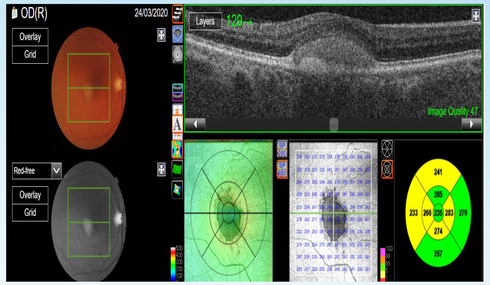


A case of PPS demonstrating increased thickness of Choroid over 300 microns

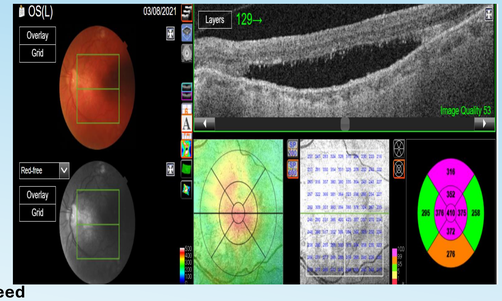


Adult vitelliform macular degeneration (AVMD)

Early case of AVMD

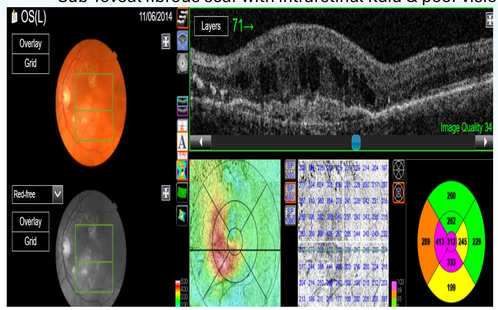


Late case of AVMD showing empty space following resorption

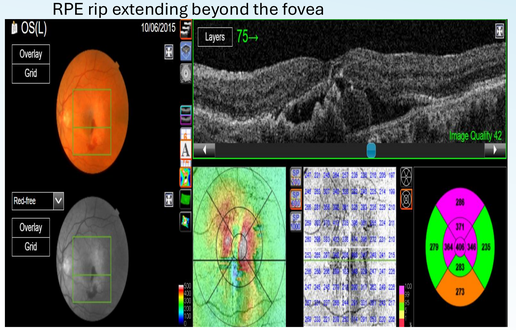


Wet AMD conditions (4 and 5) that do not need intravitreal anti-VEGF injections

Sub-foveal fibrous scar with intraretinal fluid & poor vision



RPE rip extending beyond the fovea



Discussion

Adult vitelliform macular degeneration, peripapillary pachychoroid syndromes and Central serous retinopathy often require detailed angiographic investigations such as fluorescein and indocyanine green angiography before confirming the diagnosis.
Once the patient develops rips in the retinal pigment epithelium affecting the fovea anti-VEGF injections are unlikely to be effective.
Localised focal macular thickening and oedema in cases of diabetic maculopathy and retinal vein occlusion are often best treated by focal laser therapy which is likely to give a long-lasting benefit.
Cases of macular haemorrhages and oedema secondary to macro-aneurysms may benefit from focal laser to the leaking macro-aneurysm once the initia haemorrhage has resolved. A significant number of peripapillary choroidal neovascular membranes remain stable and often self-resolve.
Cases of ERM with secondary macular oedema often benefit from vitrectomy and ERM peel therefore a referral to VR colleague is recommended.
In cases of inactive CNVs in asymptomatic patients with well-preserved central vision, it is worth just to observe as anti-VEGF injections may not benefit.

Conclusions

Our study shows that there are many macular conditions that do not respond to the usual anti-VEGF regime as some of their basic aetiopathogeneses are different from that of the 4 NICE approved conditions.
It is extremely important that clinicians recognise these conditions and not subject these patients to a rigorous intravitreal injection regime.
This evidently would reduce unnecessary ineffective injections to the patients and reduce the burden on over stretched NHS injection services in addition to cost savings.