Clinical Case

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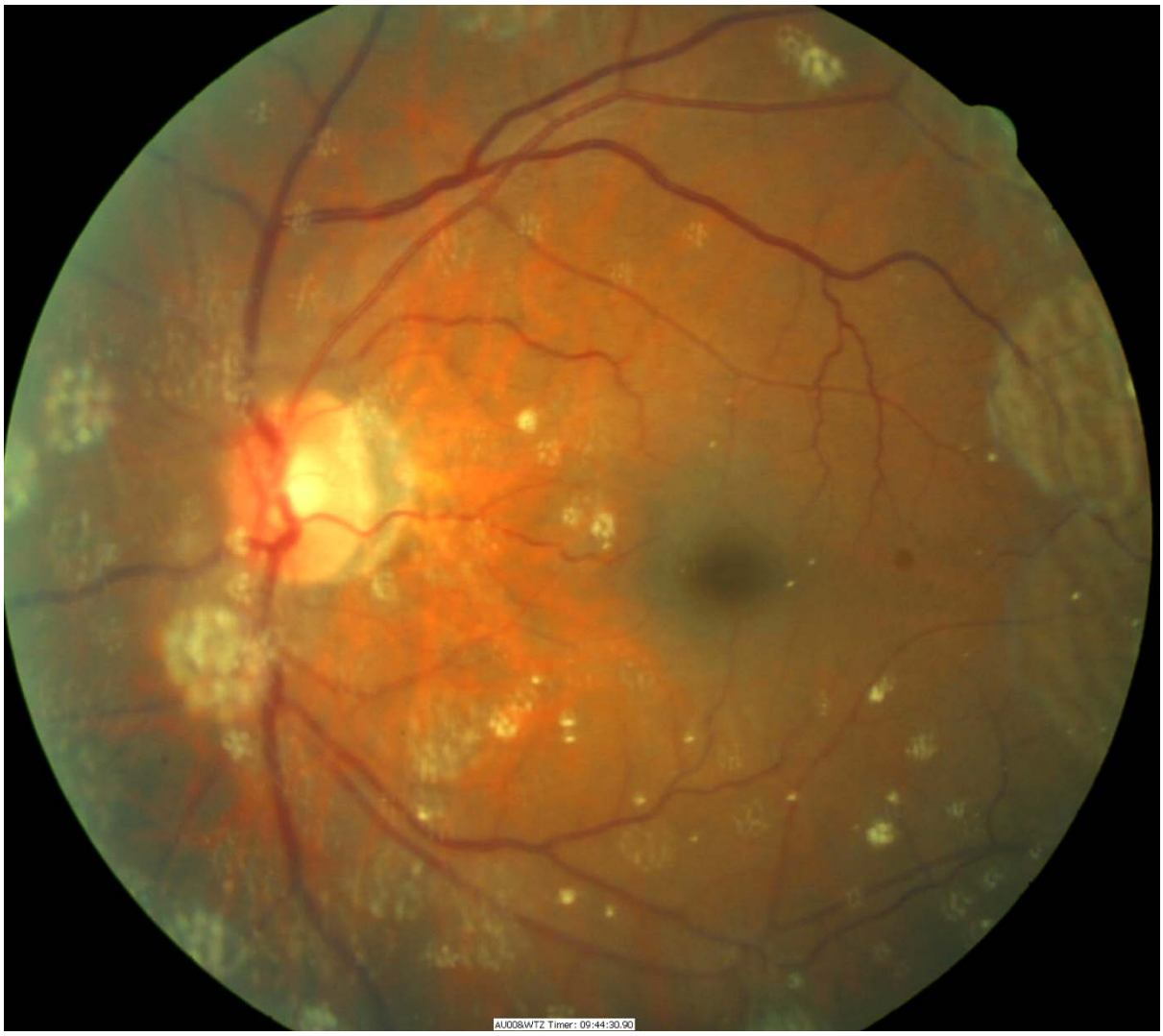
A 54 year old man has recently been diagnosed with type 2 diabetes and attended for diabetic retinopathy screening for the first time; the findings on examination are shown in the image. The image of the right fundus has been reported as showing no abnormality. The man has normal visual acuity in both eyes.



Questions

1) Describe the image

2) What is the diagnosis and cause of this condition?

3) What symptoms is the man likely to report and what treatment is recommended?

Answers and learning points

The image seen is retinal photography of the man's left eye. There are numerous small, white, refractile opacities within the vitreous humour.

The diagnosis is asteroid hyalosis. This is a degenerative condition consisting of calcium and lipid complexes forming mobile spherical bodies suspended throughout the collagen fibrils within the vitreous cavity. First identified by Benson in 1894, the light-yellow plaques give the appearance of stars or asteroids shining on a dark night. Asteroid hyalosis is a relatively uncommon, benign, condition found in roughly 1-2% of the population [1-3]. It is more common in men and is associated with increasing age. It is usually unilateral although can be bilateral in 10-20% of cases [1-3].

The cause and mechanism of asteroid hyalosis formation remains unknown. A number of studies have investigated factors associated with asteroid hyalosis and results very. The UCLA Autopsy population study, Beaver Dam eye study and Blue Mountain Eye study are three large population based studies examining the associations between co-morbidities and asteroid hyalosis. Significant association was identified between asteroid hyalosis and male gender and increasing age [1-3]. It was previously thought that potential associations include hypertension, diabetes mellitus, dyslipidemia, smoking and alcohol consumption. These above studies, however, did not identify significant association between these co-morbidities and asteroid hyalosis after adjusting for age [1-3]. There may be an association between increased BMI [2], increased alcohol consumption [2] and an inverse association with posterior vitreous detachment [1].

Visual acuity usually remains unaffected and therefore the man is unlikely to have noticed any visual changes. In a few cases, patients have experienced reduced visual acuity and received surgical treatment in the form of vitrectomy with phacoemulsification.

Learning points:

1) Asteroid hyalosis is a benign condition which is more common in men and associated with increasing age. There is limited evidence to support the association between diabetes and asteroid hyalosis.
2) Visual symptoms are unlikely to be caused by asteroid hyalosis, but can be related in which case vitrectomy may be a treatment option.

References

1 Fawzi AA, Vo B, Kriwanek R, Ramkumar HL, Cha C, Carts A, Heckenlively JR, Foos RY, Glasgow BJ. Asteroid hyalosis in an autopsy population: The University of California at Los Angeles UCLA) experience. Arch Ophthalmol 2005; 123(4): 486-490.

2 Moss SE, Klein R, Klein BE. Asteroid hyalosis in a population: the Beaver Dam eye study. AM J Ophthalmol 2001; 132(1): 70-75.

3 Mitchell P, Wang MY, Wang JJ. Asteroid hyalosis in an older population: Blue Mountains Eye Study. Ophthalmic Epidemiol 2003; 10(5): 331-335.