



Age-related macular degeneration

Risk factors and detecting early disease

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In the developed world, age-related macular degeneration (AMD) is the most frequent cause of visual loss in those over 50. It presents in two forms: a 'dry' form (Fig 1b); and the 'wet' form (Fig 1a) where new vessels grow under the macula from the choroid and cause haemorrhage and scarring. Since treatments are limited, awareness of modifiable risk factors can influence risk. With the introduction of an effective treatment for wet AMD, the ability to detect early disease and recognise high risk features has become important.

Main risk factors

Studies have highlighted putative risk factors. Information from twin studies, association studies and genetic linkage has now identified a relatively small number of genes that may account for over 50% of genetic risk. Most of these genes appear to have a role in complement activation and thus theories of pathogenesis include involvement of inflammatory mediators. Studies of family history give odds ratios (OR) in the order of 5-10 times the risk if there is a positive family history of AMD in a first degree relative.

Of the environmental risk factors examined, smoking is most consistently associated and we now have evidence of a dose-related effect (based on number of pack years of cigarette smoking) with odds ratios of 2-10 times, as well as an effect from passive smoking. Ceasing smoking can reduce this risk.

Detecting early disease

The advent of an effective treatment for wet AMD makes detecting early disease a priority to maximise treatment efficacy. In addition, we now have more information on the natural history and recognition of high-risk features such as pigment clumping and so-called 'soft drusen'. The important symptoms of wet AMD include distortion of vision with straight lines appearing wavy, blurring of vision and central scotoma or relative scotoma. The use of an Amsler grid to check for distortion can be a simple but invaluable tool for detection of possible wet AMD (Fig 2).

References available on request.

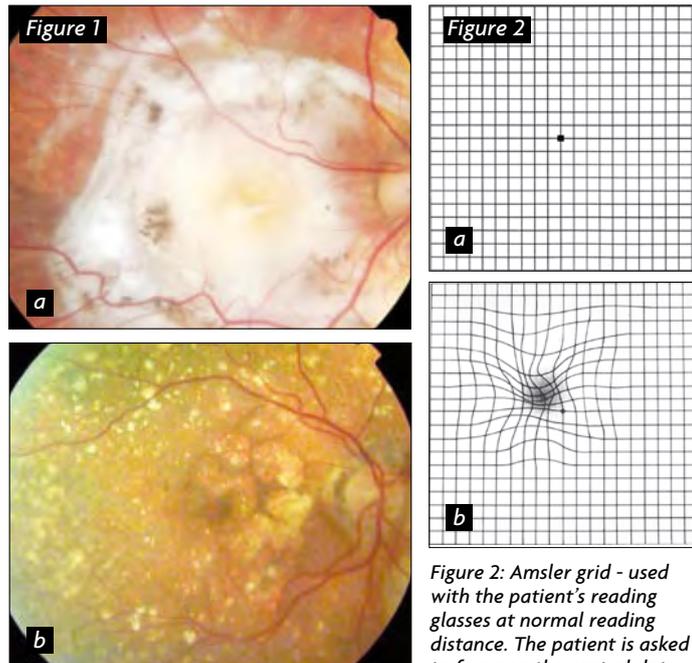


Figure 1: End stage AMD (a) 'wet' with a disciform scar, the end result of subretinal neovascularisation, haemorrhage and fibrosis under the macula and (b) 'dry' with areas of geographic atrophy and yellow drusen deposits.

Figure 2: Amsler grid - used with the patient's reading glasses at normal reading distance. The patient is asked to focus on the central dot and to note if any of the gridlines are distorted or if scotomata are perceived: (a) normal eye; and (b) eye with possible macular degeneration.



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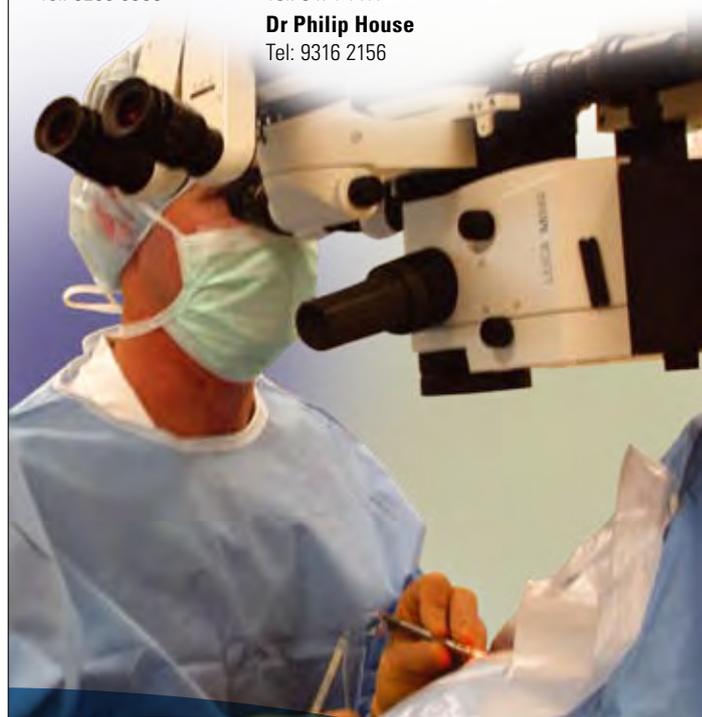
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