Monitoring dry AMD

As Optegra in Birmingham launches a new service, **Michelle Hanratty** describes what may be done to help those patients with dry age-related macular degeneration

An ageing population means that optometrists are seeing signs of age-related macular degeneration (AMD) more regularly in practice, and patients often know of the potential to develop the disease from a greater public awareness about eye health in general. The good news is that the potentially devastating wet form of AMD is now no longer seen as a major threat to vision, as there is a well established anti-VEGF treatment strategy and fast-track referral pathways to minimise the risk of visual loss. Unfortunately, 90 per cent of AMD in the UK is of the dry form and the problem appears to be growing exponentially.

The problem with dry AMD

Although a chronic and slow progressing condition, dry AMD may still bring about significant visual loss resulting in a decrease in quality of life and independence. It can have just as devastating an impact on quality of life as wet AMD in its late stages, but there is little in place to support these patients. The difficulty faced by eye care professionals at the moment is that there is no licensed treatment currently available for dry AMD, so all that can be offered to the patient is support, advice and monitoring. There is no NHS provision for this service except via the GOS annual eye examination, and currently no monitoring of dry AMD is offered in the hospital eye services.

Why monitor dry AMD?

Many patients that have dry AMD have never had their condition assessed by an ophthalmologist. Where an optometrist has noticed a significant progression in dry AMD upon performing a routine eye examination, referral may have been made to an NHS unit. Apart from an initial examination and formal diagnosis, the patient is not usually followed up, even if they have geographic atrophy. There are two reasons for this: a lack of capacity with NHS units to monitor such patients on a regular basis, and, as their condition is chronic with no licensed therapy available, they attract low priority. Other ocular diseases that are more sight-threatening take a higher precedence, so the patient is discharged to the care of their community optometrist. Valuable support is provided from a low vision clinic or HES counselling services, where available, but otherwise the patient may be given little other support.

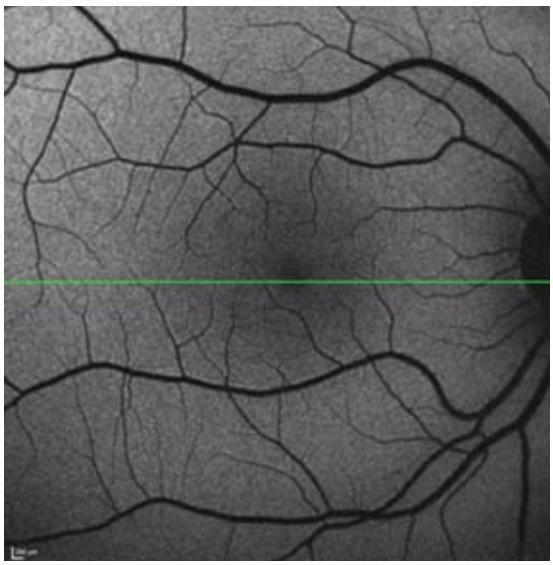

Figure 1 The auto fluorescence pattern of a typically healthy eye. (image courtesy of Heidelberg Engineering)

Figure 2 Geographic atrophy as viewed with fundus auto fluorescence (image courtesy of Heidelberg Engineering)

Some patients may be satisfied with this level of care as their condition may be very stable and their vision not significantly affected. For many patients however, even if their dry AMD is not advanced, they are still worried about disease progression, not just to wet AMD (which is now treatable) but to late-stage dry AMD which is not treatable. They want to have their condition thoroughly monitored, its progression tracked and seek the reassurance of having a specialist review their eyes on a regular basis.

This enhanced level of care, although not available within an NHS setting, could be provided to patients on a private basis, and is potentially even more accessible with many optometrists investing in ocular coherence tomography (OCT) and fundus photography equipment. It is entirely possible to have a locally arranged shared care scheme (private not NHS funded) with a local consultant ophthalmologist that specialises in medical retina. Optegra Birmingham has launched a dry AMD monitoring service with Professor Jonathan Gibson in response to the requests made by his patients whom have wanted this additional level of care.

The patient pathway at Optegra Birmingham

A patient that presents for the dry AMD monitoring service has often been referred by their own optometrist or has been seen within the HES and discharged. Their initial examination includes a full history and symptoms review to assess their medical and ocular history as well as their lifestyle and visual needs. An eye examination that records the unaided vision, best corrected and visual acuity is carried out. Dilated fundoscopy and the Amsler ▶

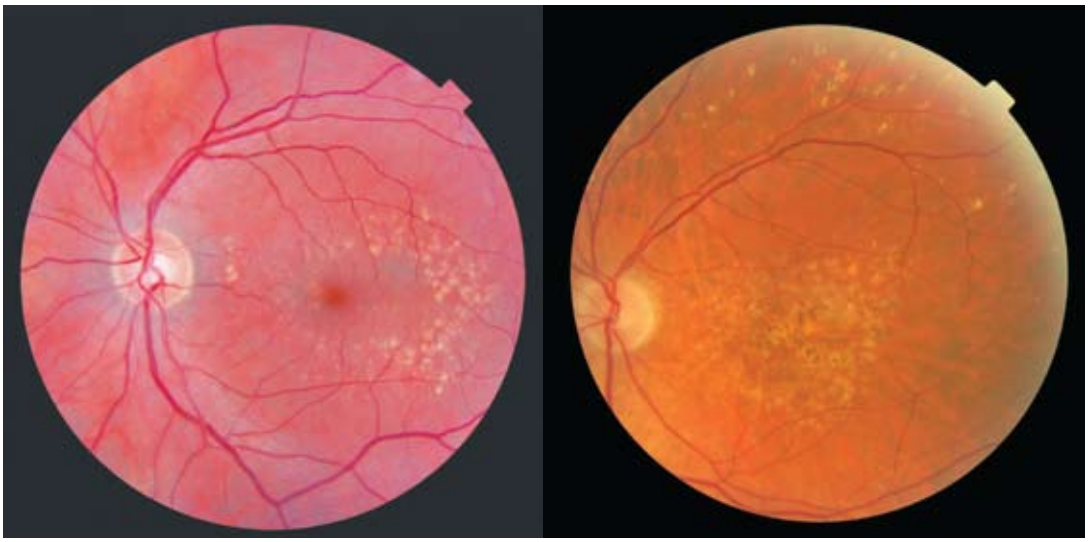

Figure 3
Two different presentations of dry AMD

grid test are also carried out to assess the extent of the AMD, followed by fundus photography and OCT to record baseline information. OCT provides valuable information about the extent to which AMD has affected the retinal layers and helps identify those whom are at a high risk of developing wet AMD. The Heidelberg Spectralis used at Optegra Birmingham also has fundus autofluorescence capability which is ideal for monitoring dry AMD.

What is fundus autofluorescence (FAF)?

Directing blue light (at 488nm) at the retina causes lipofuscin, a toxic waste product which accumulates in cells of the retinal pigment epithelium (RPE), to fluoresce without the need for an invasive injection of dye. It is constantly being cleared by the RPE and choriocapillaris but this slows down with both age and disease processes. An excessive concentration of lipofuscin interferes with normal cell function and ultimately leads to cell death. Figure 1 shows the appearance of a typically healthy eye, while Figure 2, shows one that has significant geographic atrophy. It has now been accepted that FAF examination is the most reproducible means of assessing and monitoring dry AMD progression. Figures 3 and 4 show photographs of dry and wet AMD.

Management of a dry AMD patient

For a patient, having a consultation and having their condition managed at Optegra Bimingham is not just about having their eyes checked and capturing measurable data, but about seeking the opinion and advice from a specialist in the field. Patients seek reassurance from understanding their condition, their likely prognosis and how they can help themselves or get help and support from other agencies. They also want to be assured that, should their condition progress to wet AMD, it will be identified at the earliest opportunity and managed in the best possible way to preserve vision.

The patient can also be given lifestyle advice. It is well documented that smoking increases the risk of AMD[2] and that not all people consume enough of the leafy green or coloured vegetables to maintain optimum levels of the antioxidant macular pigments. Therefore, general advice about the cessation of smoking, eating healthily or taking a nutritional supplement long term may be of benefit to those patients who are at risk of developing AMD or already have early AMD.

Research and future treatments

Patients also like to be kept up to date with what research is going on and are eager to hear about any potential treatments that may be available in the future. At the moment, there are no licensed therapies for dry AMD, but several clinical trials are ongoing and we could see treatments being available within the next few years. These include Sirolimus injections and Othera's OT-551 antioxidant eye drops, which have had positive outcomes in improving the vision of those patients that have geographic atrophy associated with their dry AMD.

Dry AMD patients at Optegra are monitored every six months unless there is a sudden change in their condition. This enhanced level of care and attention for dry AMD sufferers takes time and additional resources which are only likely to be provided by the private sector. With the development of treatments for dry AMD in the near future, many patients feel that this is a worthwhile investment, as they gain reassurance that their condition is closely monitored and that they are receiving the latest advice from specialists within the field.

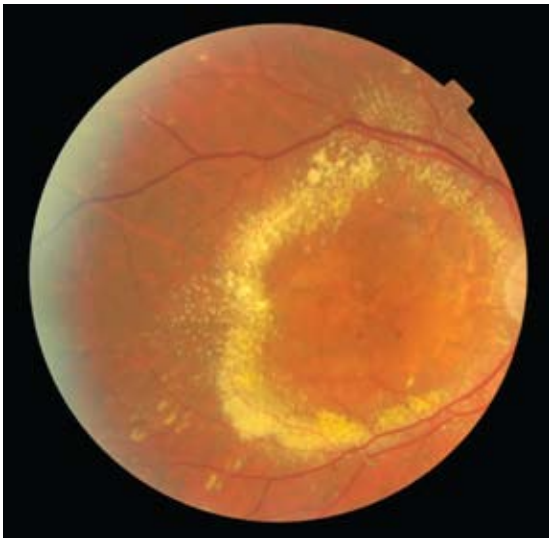

Figure 4 Recent wet AMD with exudate deposition

● Patients with dry AMD can be referred to Professor Jonathan Gibson at Optegra Birmingham by contacting the hospital on 0121 204 3800.

References

1 Owens, C *et al.* The estimated prevalence and incidence of late stage age related macular degeneration in the UK. *Br J Ophthalmol,* 2012;96:752-756.

2 Willeford KT, Rapp J. (2012) Smoking and age-related macular degeneration: biochemical mechanisms and patient support. *Optom Vis Sci,* Nov;89(11):1662-6.

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