Case Record 5

Atrophic AMD with Vitreomacular Traction Syndrome.

June 2012

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aaron optometrists

Introduction : New Diagnostic Technologies and Clinical Governance

Drexler and Fujimoto (2008) comment that clinicians do not accept new instrumentation that increases the time and cost of examination. Conversely, when the introduction of a new technology makes a clinician question their previous management capabilities the decisive nature of that technology cannot be quantified; such was the case with the Ocular Coherence Tomography (OCT). This was exemplified with the very first patient examined post purchase.

The prompt detection of exudative Age Related Macular Degeneration (AMD) is vital to the patient. However the subtlety of detecting choroidal neovascularisation (CNV), while ensuring high sensitivity and specificity of referral is a constant concern.

Vision loss is devastating. Empathy on the part of the practitioner is essential to help the patient through this process; a correct diagnosis is pivotal to a realistic prognosis. Outcome audits are also an integral part of the clinical governance processes for this practice; continually refining processes in the light of outcomes is essential.

Previous Status : January 2011

Salient information taken from electronic records

DATE: 10/1/11

Mrs Age : 59.
Address

Presenting Symptoms
Routine 12/12 recall for Dry AMD check. No change in vision D or N. No HA, No diplopia. No Distortion from Home Amsler - uses R/Readers +2.00.
Floaters – long standing, no change, no flashes

POH
Atrophic AMD HES referral (2000) - Discharged, no treatment. No ops/infections.

No previous ocular surgery or treatments.

Lifestyle
Retired, Non-Driver, Non-PC user, Knitting, Jig Saws, X Words

FOH
Nil

General Health and Medications
Thyroxine
BP – Bendroflumethiazide
Hiatus Hernia - Omeprazole
AMD – ICAPS, Home Amsler 1/12ly
Non-smoker
No allergies, No hayfever

Refraction

R -0.50DS (6/6-)	Add +2.50 N5
L -0.25/-0.25x90 (6/9.5)	Add +2.50 N5

Tensions (GAT) (3.15pm)	R 10	L 10
Pupils	E&A D,C& N	

Slit Lamp
R + L. VH 3 Angles open, Iris configuration Flat. AC Clear – no pigment. Corneas clear.
Dynamic Anterior Vitreous Exam - Vitreous Synergesis – no weiss ring, no tobacco dust, no hyaloids face visible

Dilated Fundsocopy (1.0% Tropicamide)
RIGHT CD 0.1 rims good, no bayoneting, no baring. Neural rims healthy. AV 2/3, no nipping, no calibre changes. Atrophic AMD - Dry, flat, refractile with Pigmentation

PVD, no tobacco dust – 9pts of gaze – no tears, no traction, no haemorrhages, no detachments

LEFT CD 0.1 rims good,
no bayoneting, no baring.
Neural rims healthy.
AV 2/3, no nipping,
no calibre changes.
Atrophic AMD - Dry, flat,
refractile with Pigmentation

PVD, no tobacco dust – 9pts
of gaze – no tears, no traction,
no haemorrhages, no
detachments

Advice and CMP
Advised further on AMD; nutritional leaflet and Home Amsler re-stressed. Continue with ICaps (non-smoker).
Stressed to return earlier if symptoms of distortion found.

Discussion

This patient has long standing atrophic AMD.
Monitoring is essential. Prall (2012) indicates that 10 to 20% of patients with atrophic AMD will progress to the exudative form. As important as regular monitoring, ensuring patient education and involvement is vital. All patients with AMD must be given nutritional and lifestyle information, with supporting documentation, a home amsler grid to self monitor and an open invitation to re-present any time symptoms change.

Responding to this, in March 2012 this patient presented as an emergency reporting rapid loss of central vision in her better eye.

March 2012

Salient information taken from electronic records

DATE: 15/3/12

Mrs Age : 60.
Address

Presenting Symptoms
Pieces missing when reading and TV - 3/52; No actual Distortion
No Diplopia.
HA behind eyes - 3/52 as well - fundamentally different. Non-Debilitating Feeling well- no red flags identified

POH
Atrophic AMD HES referral (2000) - Discharged, no treatment. No ops/infections.
No previous ocular surgery or treatments.

FOH
Nil

General Health and Medications
Thyroxine
BP – Bendroflumethiazide
Hiatus Hernia - Omeprazole
AMD – ICAPS, Home Amsler 1/12ly
Non-smoker
No allergies, No hayfever

Refraction

R -1.50DS	(6/38)	Add +2.50 N8
L -0.25/-0.50x90	(6/15)	Add +2.50 N6

Tensions (GAT)	(9.45am)	R 10	L 10
Pupils		E&A D,C& N	

Amsler Grid
No metamorphopsia but rather isolated scotomas

Slit Lamp
R & L Dynamic Anterior Vitreous Exam - Vitreous Synergesis – no weiss ring visible, no tobacco dust, no hyaloids face visible

Dilated Fundsocopy (1.0% Tropicamide)
RIGHT CD 0.1 rims good, no bayoneting, no baring. Neural rims healthy.
AV 2/3, no nipping, no calibre changes.
Atrophic AMD - appearance identical to 2011 photos, no suggestion of CNV, not raised - refractile with Pigmentation

LEFT CD 0.1 rims good, no bayoneting, no baring. Neural rims healthy.
AV 2/3, no nipping, no calibre changes.
Atrophic AMD - Dry, flat, refractile with Pigmentation

Advice and CMP
No explanation for reduced acuity evident – recommended OCT.

Ongoing Considerations and Advice

While patients with atrophic AMD can demonstrate profound visual disability, progression rates are generally measured over years or decades (Maturi 2011). The rapidity of visual loss led to a high index of suspicion of exudative changes and the patient was examined immediately. Dilated fundoscopy did not reveal any evidence of exudative processes; serous retinal detachment, RPE detachment, sub-retinal haemorrhage or sub-retinal fibrous tissue (Davis et al 2005). The appearance appeared classically geographic with flat and confluent atrophic areas but without visibility of underlying choroidal vessels (Maturi 2011, Davis et al 2005).

A definitive explanation for the rapid and significant reduction in acuity was not evident on fundus examination. Onward referral was necessary, however the patient required an explanation; she was fully aware of the implications of exudative AMD and was understandably very concerned.

The availability of OCT allowed a more accurate retinal assessment.

RIGHT EYE OCT 15/3/12

OCT and Tentative Diagnosis

The OCT allowed the mechanism of vision loss to be assessed non-invasively.

INDEPENDENT Prescribing
OPTOMETRISTS
aaron optometrists
Bellway House, Woodhorn Road, Ashington, Northumberland NE63 0AE, Tel:01670 813185

Dr

re Mrs
Address

15/3/12

Dear Dr

Mrs , who has pre-existing atrophic AMD, presented reporting reduced acuity in the right eye over the last month. No distortion was reported, but rather isolated scotomas. Refraction gave:
R -1.50 DS (6/38) Add +2.25 N8
L Plano/-0.50x90 (6/15) Add +2.25 N6

In January 2011 6/6 was recorded for the right eye.

Volk fundoscopy suggested atrophic AMD, flat and apparently unchanged since her last fundus photo.

OCT (attached) however revealed vitreous traction on the macula and a possible occult macula hole.

Urgent referral for an ophthalmologist's opinion is required.

Yours faithfully

Peter Frampton

Company Registration No 07022426
VAT Registration 979 4947 34

Winner Outstanding Optometrist
Northumberland NHS Winner Innovation in Practice Awards
Winner Technology Practice of the Year

The diagnosis made was that of occult macula hole. Described by Theng (2011) as Stage 1b Macula Hole, an occult hole results from tangential vitreous traction (Tanner and Williamson 2000) causing elevation of the fovea and can often lead to visibility of the xanthophylls pigment as a yellow spot. This pigmentation was not evident but the pre-existing atrophic AMD may have obscured this feature.

Since 50% of Stage 1 holes resolve spontaneously following vitreomacular separation, invasive procedures are more likely to be considered at Stage 2 (Kanski and Bowling 2011). However, the significant loss of acuity necessitated urgent referral.

Importantly the patient could be reassured that the episode was not exudative AMD; this process was aided by the OCT images and the mechanism of retinal distortion and potential treatments explained.

A letter was sent by hand via the GP.

27/3/12 Outcome Audit and Reflection

After the HES appointment the patient was reviewed as part of the practice Outcome Audit procedure. The OCT images had been faxed by the GP so the image quality was too poor for diagnosis. She had been diagnosed, presumably from the classic fundus appearance, as having geographic AMD and referred to the Low Vision Clinic; the patient was understandably concerned. No further HES investigation was offered.

Clinical Governance Outcome: An immediate change to referral practice was instigated in light of the poor onward transfer of vital clinical information. Henceforth a hard copy of OCT results are passed on via the patient to avoid data contamination.
It is normal practice for patients to be offered copies of correspondence, however in this case the referral was written and taken to the GP surgery by hand after the patient had left.

Patient Management Outcome: A letter, with OCT copies, was given to the patient as well as being sent directly to the ophthalmologist. A date was set to review to ensure more proactive engagement was forthcoming.
Referring for a private consultation was suggested as an alternative CMP.

The Newcastle upon Tyne Hospitals NHS
NHS Foundation Trust

DEPARTMENT OF OPHTHALMOLOGY

Consultant Ophthalmologist

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Date of clinic: 26/03/2012

Seaton Hirst Primary Care Centre (155)
Norham Road
Ashington
NE63 0NG

Dear Dr

Re:

24/4/12

Diagnosis: Bilateral dry age related macular degeneration (first diagnosed 10 years ago)

Visual acuity: 6/60 +1 right eye, 6/18 left eye unaided (6/12 each eye with pinhole)

Thank you for referring this sixty year old who has had increasing difficulty with reading and missing bits from her central vision. She was previously diagnosed with age related macular degeneration about ten years ago at Wansbeck Hospital.

The anterior segment examination was normal. She has healthy optic discs and there was bilateral dry age related macular degeneration. She was Watzke negative.

This is not amenable to treatment. Further fundus photography and OCT have been carried out and routine follow up has not been made. Mrs Pollard will be attending the Low Vision Aid Clinic.

Yours sincerely

Consultant Ophthalmologist

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Comment: The HES diagnosis confirmed my confidence in interpreting the classic appearance of atrophic AMD. Anecdotally there would appear

to be a tendency toward poor specificity of referral for AMD; the referral and consequent discharge of this patient in 2000 for AMD would support this concept. However the rapidity of vision loss and inclusion of a provisional diagnosis of occult macula hole, admittedly without support of a usable OCT result, did not seem to be considered. The patient is a non-driver, but regardless this reduction in acuity constitutes a profound disability.

The patient was reported to be Watzke Negative. The Watzke-Allen test is primarily used to differentiate Full Thickness Macular Holes (FTMH) from mimicking conditions (Tanner and Williamson 2000). Only FTMH are distinguishable with the Watzke-Allen test (Tanner and Williamson 2000); indeed these investigators specifically excluded Stage 1 holes, as identified via OCT, from their study of the clinical usefulness of the Watzke-Allen test as these would be undetectable.
Consequently a negative Watzke test does not eliminate the possibility of occult holes as well as other possibilities.

Diagnosis Reappraisal

Vitreous Macular Retraction is the term used in the diagnosis by the private ophthalmologist (see below). The actual label may be academic but the author's revised diagnosis is Vitreomacular Traction Syndrome (VMT). Now considered a distinct clinical condition (Kumar et al 2010), etiologies for VMT may include diabetic retinopathy, myopia and inflammation however idiopathic causes are also possible (Kumar et al 2010).

Associated with incomplete posterior vitreous detachment, the hallmark of VMT is persistent attachment of the vitreous to the macula and optic nerve head (Gandorfer et al 2002) but with complete detachment in the perimacular region (Kanski and Bowling 2011). Kanski and Bowling (2011) also suggests that the PVD will give a very prominent OCT signal. Unlike epimacular membranes and macular hole formation in which the retinal traction is tangential to the macular, vitreomacular traction syndrome demonstrates anterior/posterior traction (Kanski and Bowling 2011). Complications can include cystoid macula oedema, macular pucker, tractional macular detachment and FTMH (Kamur et al 2010). While these complications may be present, the idiopathic form occurs in isolation (Uchino et al 2001, Gandorfer et al 2002) making detection difficult without an OCT.

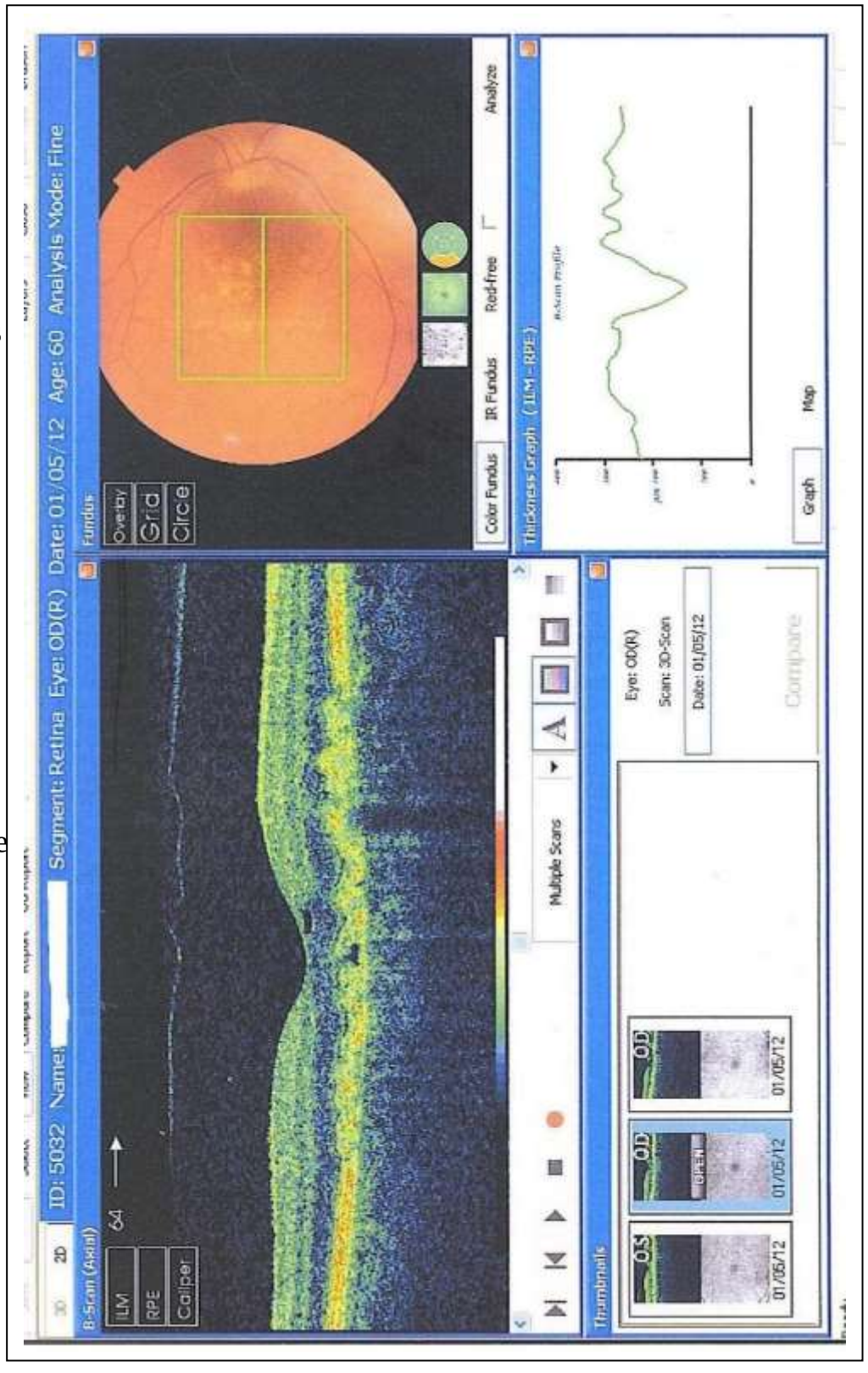
Kamur et al (2010) suggest, while complete vitreous detachment may result in resolution, this outcome is uncommon. With the serious sequelae, including FTMH which has a poorer surgical outcome, onward referral will undoubtedly be required.

Monitoring may be an appropriate management, but this option would seem more suitable when acuity is not significantly affected. Kanski and Bowling (2011) seem to reflect this view when stating that marked or progressive disease would indicate the need for pars plan vitrectomy.

1st May 2012

The patient was invited back for a further assessment of progress and the decision to refer privately for a second opinion was taken. Prior to referral a second OCT was taken. This scan revealed that the vitreous traction had spontaneously resolved. Intra-retinal cysts were still evident but a normalising morphology was emerging. Both copies of OCT were sent with the private referral.

Acuity was not checked at this time. Another full review was scheduled post the private examination.



Ophthalmology Report 14/5/12

Consultant Ophthalmic Surgeon
Consulting Rooms
Nuffield Health, Newcastle upon Tyne Hospital
Clayton Road
Jesmond NE2 1JP

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Appointments:
Secretary:
(Mon – Fri 9am – 5pm Answer phone outside these hours)

Our Ref:

Mr Peter Frampton
Aaron Opthometrists Ltd
Bellway House
Woodhorn Road
Ashington
Northumberland
NE63 0AE

Patient seen: 14.5.2012

Dear ~~Dr Mr Frampton~~,

Re:

Diagnosis: Dry macular degeneration.
Previous right vitreous macular retraction/

Mrs had an OCT scan at her optometrist as she was aware that the right vision was not as clear as it had been and was anxious about this. She has been seen at the RVI but there seems to be some uncertainty over the findings from the OCT. I found her vision unaided to be around 6/24 but pinhole 6/9 in her right and 6/7.5 in the left, with reading glasses she could get down to N5 from each eye. The anterior segment of the eye was normal with intra ocular pressures at 12. She does have a little bit of anterior cataract in the right eye. Both eyes have macular drusen. The initial OCT scan done by her optometrist on the 313th March showed vitreous macular retraction in the right eye. Repeat scan however on the 1st May showed that the vitreous had released itself from the macular and the scan today confirmed that findings.

I have reassured her that she doesn't need an operation for vitreous macular retraction. She does have dry macular degeneration that can slowly weaken the eye but it will certainly not take the vision away all together but can lead to difficulties of central vision. She is taking ICAPs which can help slow the process down and if she was still concerned she was getting distortion particularly she should seek urgent attention as she could yet develop wet macular degeneration. I wonder whether glasses would improve the distance vision in the right eye now that the vitreous macular retraction has settled as pinhole certainly seemed to give better vision and her reading is good. She is getting a little bit of cataract and maybe altering the prescription as well but I don't think this will need treatment at the moment.

Yours Sincerely,

Consultant Ophthalmologist

May 2012 post private ophthalmology exam

Salient information taken from electronic records

DATE: 21/5/12

Mrs Age : 60.
Address

Presenting Symptoms
Annotate 2 Follow-up review post Ophthalmology. VA does seem a little better but spots in vision still evident,

POH
AMD HES referral (2000) - Discharged, no treatment. No ops/infections. Reading Rx only. No Dist Rx.
No previous ocular surgery or treatments.

FOH Nil

General Health and Medications
Thyroxine
BP – Bendroflumethiazide
Hiatus Hernia - Omeprazole
AMD – ICAPS, Home Amsler 1/12ly
Non-smoker
No allergies, No hayfever

Refraction

R -1.00/-0.50x90	(6/12+)	Add +2.50 N6
L +0.25/-0.50x100	(6/9.5-)	Add +2.50 N5

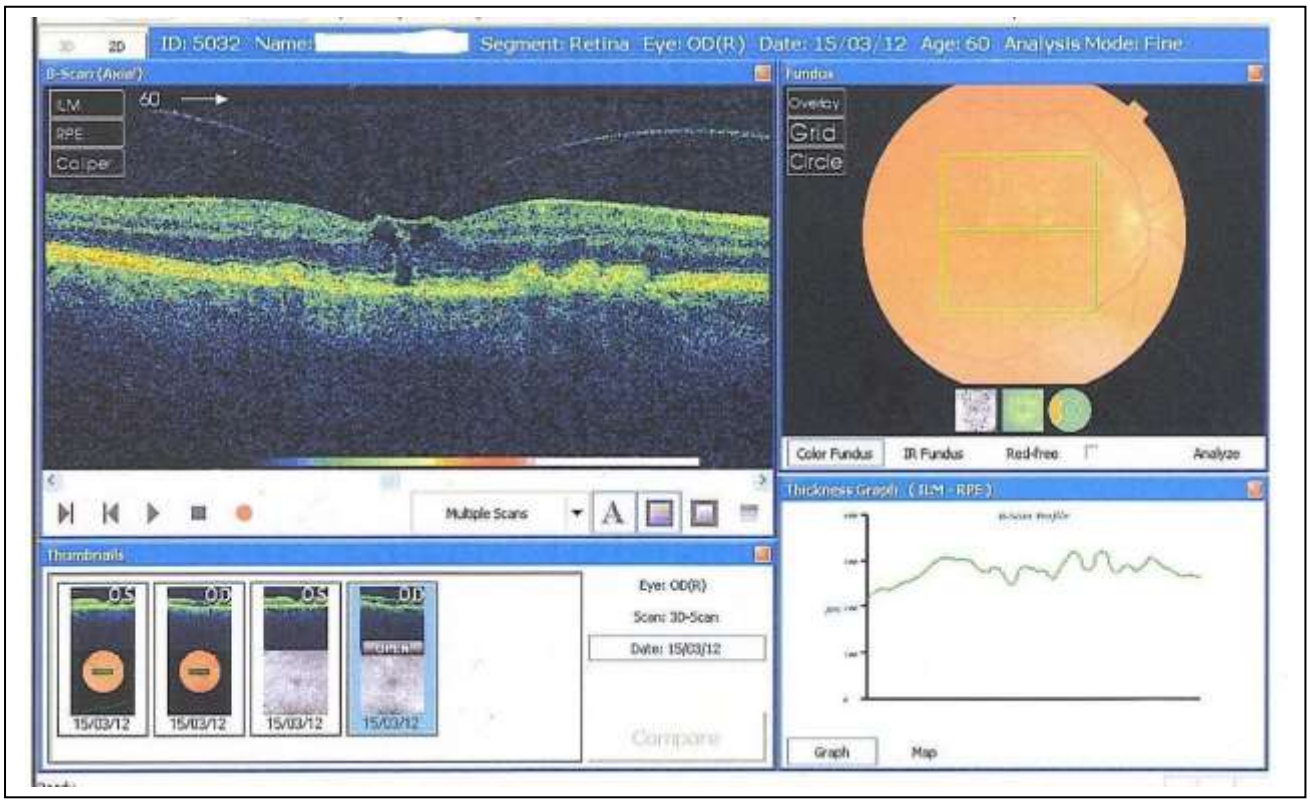
Tensions (GAT) (9.45am) R 11 L 13
Pupils E&A D,C& N

Dilated Fundsocopy (1.0% Tropicamide)
RIGHT Atrophic AMD - appearance identical to 2011 photos, not raised – hard, refractile drusen

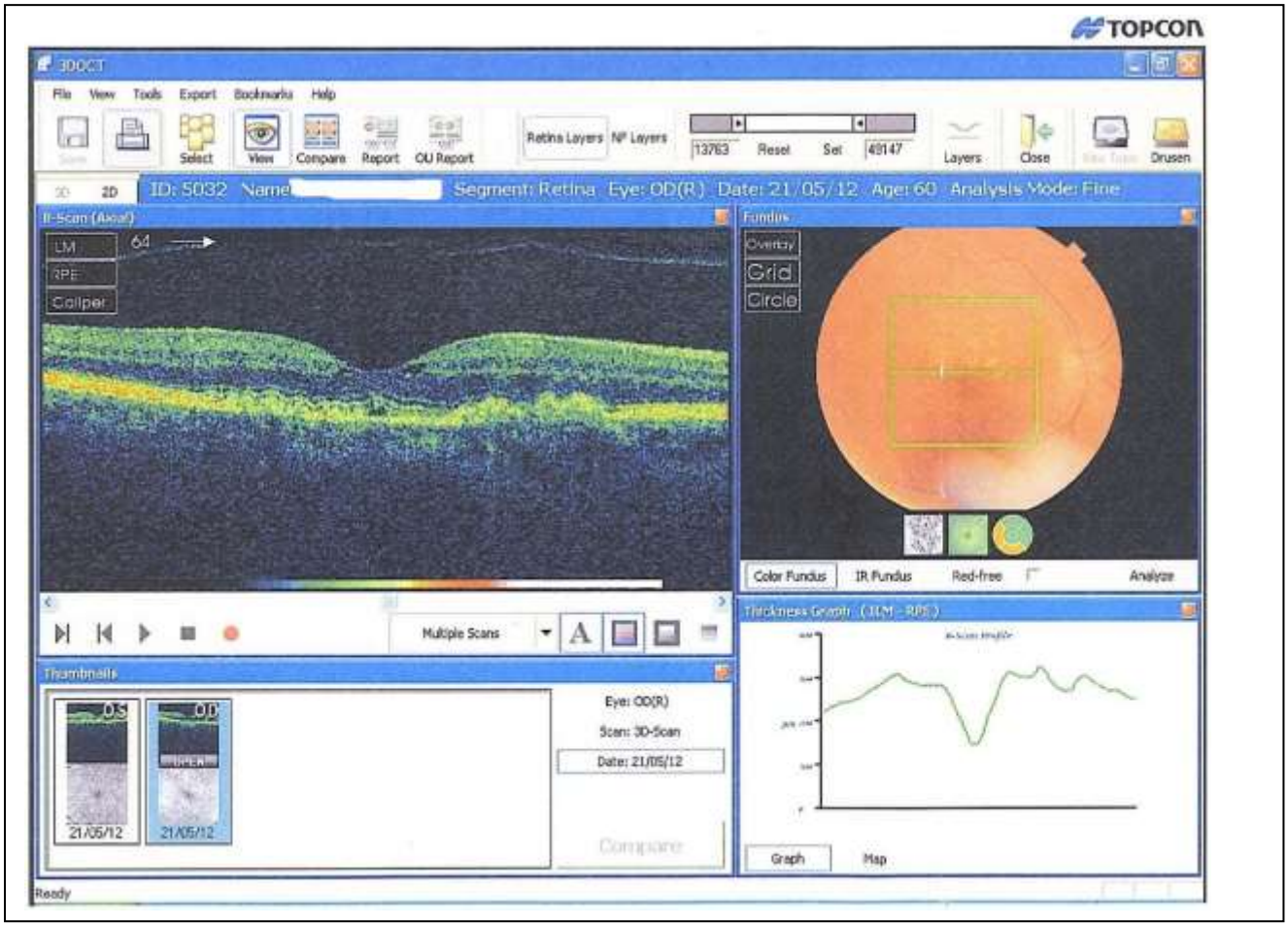
LEFT Atrophic AMD - Dry, flat, refractile with Pigmentation

OCT 21/5/12 - with original for comparison

OCT RIGHT EYE 15/3/12



RIGHT EYE 21/5/12



Advice and CMP

Advised on reducing compromises to improve visual function - 1) Subjectively liked Dist improvement - recommended 2) Light 3) BBB, Reserves and Spot tasking - magnifier? 4) Contrast

Add/WD Demo but go BBB instead

Visual function is dependent on many factors. High Contrast Acuity measures an extremely narrow range of visual function. The inclusion of environmental advice is vital for all patients, but especially those with compromised vision.
Full distance correction was recommended in combination with advice, with supporting literature, on Big Bright Bold, spot Tasking and Contrast. The patient is fully aware to return immediately if further deterioration occurs; otherwise she was discharged to routine checks.

Final Comment

While acuity is still not excellent it is much improved since the complete PVD. The patient understands the underlying pathogenesis.

In retrospect it is certain that treatment would not have been necessary. However, onward referral, with the inclusion of hard copies for the patient, would still be necessary. Improved optometry/ophthalmology relations with the possibility of tele-ophthalmology could suggest that, in the future, this could be monitored within the community. It will certainly never be within the remit of optometry to discriminate surgical versus non-surgical managements, especially when the consequences of non-intervention can be significant.

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