NW500

Imaging Atlas

Imaging with the NW500

TOPCON Healthcare

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A former intern in the Paris public hospital, he served as a clinical fellow at Hôtel-Dieu de Paris, and now holds a consultant post at the Ophthalmology Centre of Cochin Hospital. He holds the title of Fellow of the European Board of Ophthalmology and is also a co-founder of the Retinax network. Dr Lehmann is the author of several international scientific publications and is actively involved in research and training within his field.

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Dr Kévin Bouaziz is an ophthalmologist specialising in cataract surgery and the management of retinal diseases. He currently practises at the Plaisir Yvelines Ophthalmology Centre and also serves as an associate specialist at the Créteil Intercommunal Hospital Centre. His academic and hospital background includes a residency in the Paris public hospital system, followed by a position as Assistant Consultant at Henri Mondor University Hospital. He holds the title of Fellow of the European Board of Ophthalmology.
At the Créteil Hospital, Dr Bouaziz is part of a team dedicated to the treatment of retinal conditions, with a particular focus on age-related macular degeneration (AMD).

Retinax

We would also like to acknowledge the contributions made by Joy Guerin, Auberie Bonjean and Dr Bénédicte Dupas, COSS, and Alexandre Carré and Faaiza Yunush, COPYV, to this project.

All visual acuities are in decimal format. All clinical descriptions included in this atlas were authored and reviewed by the contributing medical specialists.

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DIABETIC RETINOPATHY

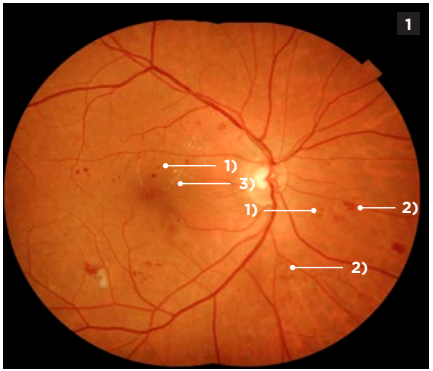
MODERATE NON-PROLIFERATIVE DIABETIC RETINOPATHY

1 2 NW500

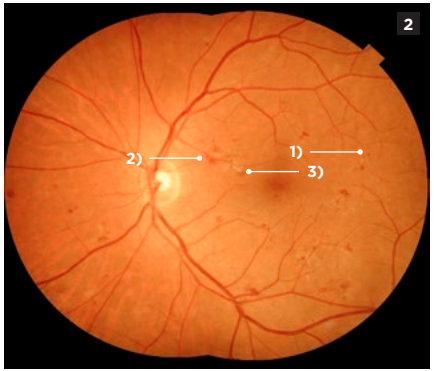
CASE HISTORY

Patient aged 52 with type 2 diabetes for 12 years presented for an annual fundus examination. He reported no significant problems with his vision.

The NW500 Disc–Macula function enables automated serial imaging centred first on the optic disc and then the macula, with no operator intervention required between captures. This protocol aligns with diabetic retinopathy screening requirements in many countries.



NW500 Mosaic 2-fields - OD



NW500 Mosaic 2-fields - OS

1) Microaneurysms
2) Dot-blot retinal haemorrhages
3) Hard exudates

PROLIFERATIVE DIABETIC RETINOPATHY

1 2 NW500

CASE HISTORY

The patient was diagnosed with type 1 diabetes at the age of eight. Over time, this led to the development of proliferative diabetic retinopathy in the right eye, which was treated with panretinal photocoagulation (PRP). The patient also developed diabetic macular oedema, which subsequently regressed following focal laser therapy.

NW500 Mosaic 5-fields - OD

Zoomed in image of the macular region - PDR - OD

DIABETIC RETINOPATHY WITH GLAUCOMA

1 NW500

CASE HISTORY

This 80-year-old pseudophakic patient was being monitored for primary open-angle glaucoma (POAG) with a history of type 2 diabetes.

This case highlights the challenges of managing advanced glaucoma in a patient with diabetes, requiring close ophthalmic follow-up and careful monitoring of optic nerve structure and visual function.

Fundus examination revealed extensive retinal atrophy secondary to panretinal photocoagulation scarring.

The patient presents with substantial papillary excavation with a cup-to-disc ratio of 0.9, indicating advanced damage. No signs of papillary haemorrhage were observed.

NW500 Mosaic 2-fields - OS

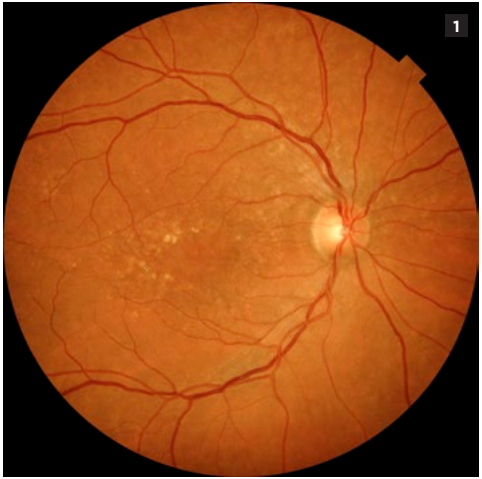
AGE-RELATED MACULAR DEGENERATION
DRY AMD

1 2 3 4 NW500
5 6 7 8 OTHER IMAGING DEVICES

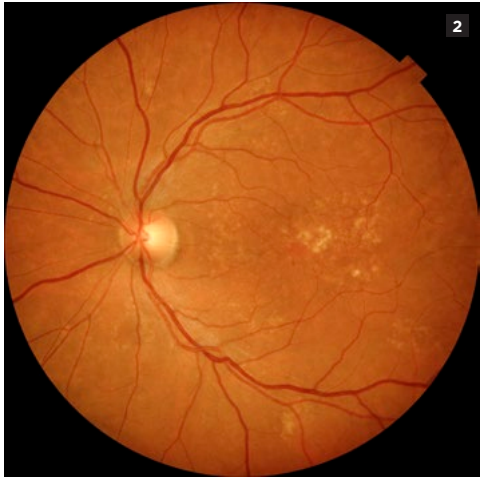
CASE HISTORY

Atrophic AMD and pseudovitelliform dystrophy: a case of progressive macular degeneration.

This 60-year-old patient was being monitored for bilateral atrophic age-related macular degeneration (AMD), associated with pseudovitelliform dystrophy with collapse and the presence of hard drusen. She presented with progressive loss of visual acuity (VA) with photophobia, consistent with progressive changes in the retinal pigment epithelium.



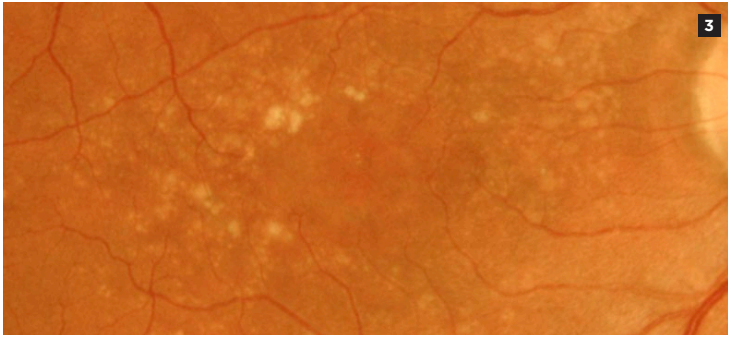
Dry AMD - OD



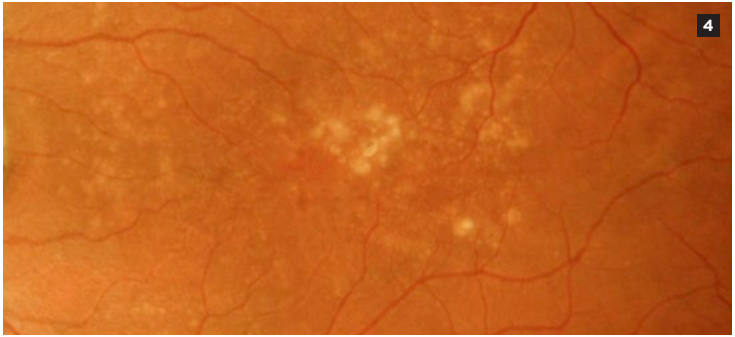
Dry AMD - OS

Treatment focused on visual support and optical aids designed to help preserve the patient's independence.

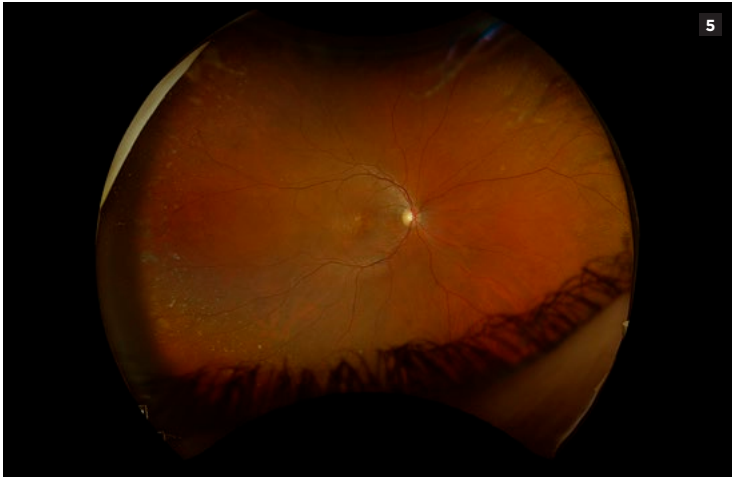
The high resolution of the NW500, when zoomed in (see next page), reveals the presence of hard drusen. Multimodal imaging (OCT, OCTA and fundus autofluorescence) will aid in monitoring atrophy progression and in detecting any conversion to the exudative form (see next page).



NW500 zoomed in view of the macular region - Dry AMD - OD



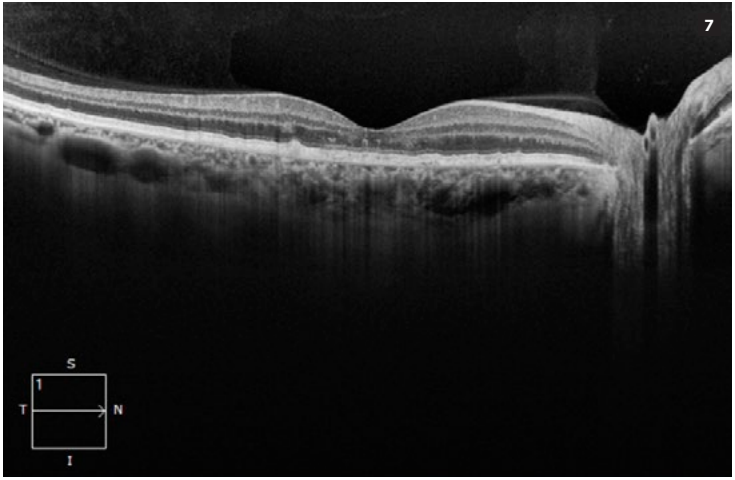
NW500 zoomed in view of the macular region - Dry AMD - OS



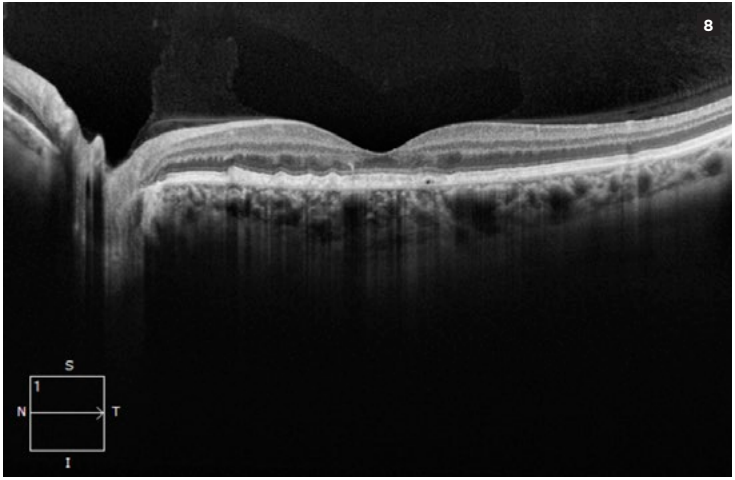
Ultra Wide Field Fundus Image - OD

Ultra Wide Field Fundus Image - OS

The examination did not reveal any choroidal neovascularisation (non-exudative AMD). Visual acuity was measured at 1.0 in the right eye and 0.9 in the left eye. OCT imaging reveals the presence of drusen and pachychoroid vessels.



OCT Scan - OD



OCT Scan - OS

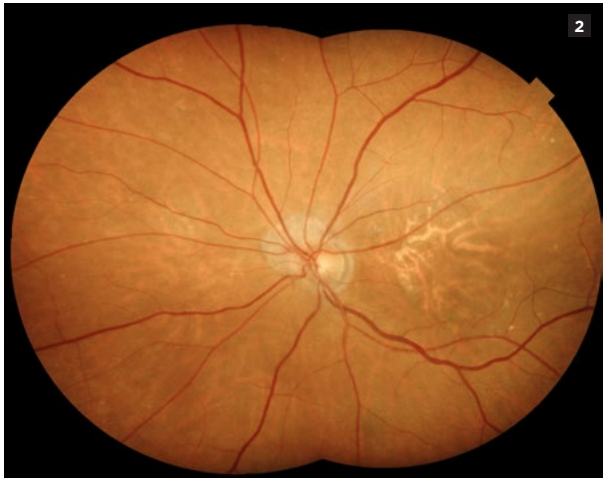
MIXED AMD - CASE 1

1 2 NW500
3 4 OTHER IMAGING DEVICE

CASE HISTORY

This 91-year-old patient presented with mixed age-related macular degeneration (AMD), exhibiting both atrophic and neovascular lesions. Recent follow-up shows progression of the atrophy, with a greater decline in visual acuity in the left eye (VA OS: 0.1) compared with the right eye (VA OD: 0.3).

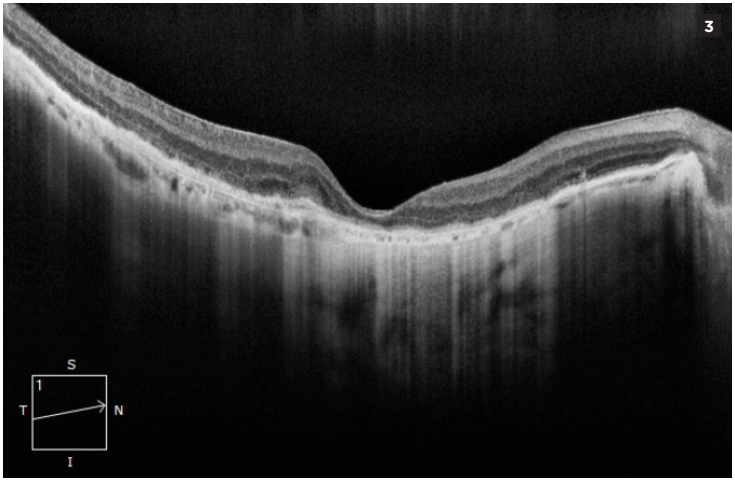
NW500 Mosaic 2-fields - OD



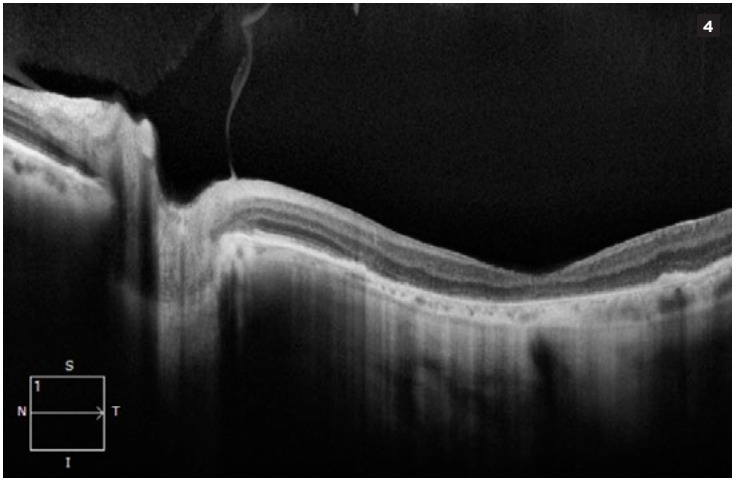
NW500 Mosaic 2-fields - OS

True-colour imaging provides clear visualisation of the extent of atrophy.

OCT examination identified an active choroidal neovascularisation in the right eye, justifying initiation of treatment with intravitreal anti-VEGF injections, currently every 8 weeks. This treatment aims to stabilise the neovascular element.
Regular multimodal follow-up imaging (OCT, fundus photography) is essential to adjust the therapy plan and monitor the progress of atrophy, which remains a limiting factor in visual prognosis.



OCT Scan - OS



OCT Scan - OD

MIXED AMD - CASE 2

1 2 NW500
3 4 OTHER IMAGING DEVICE

CASE HISTORY

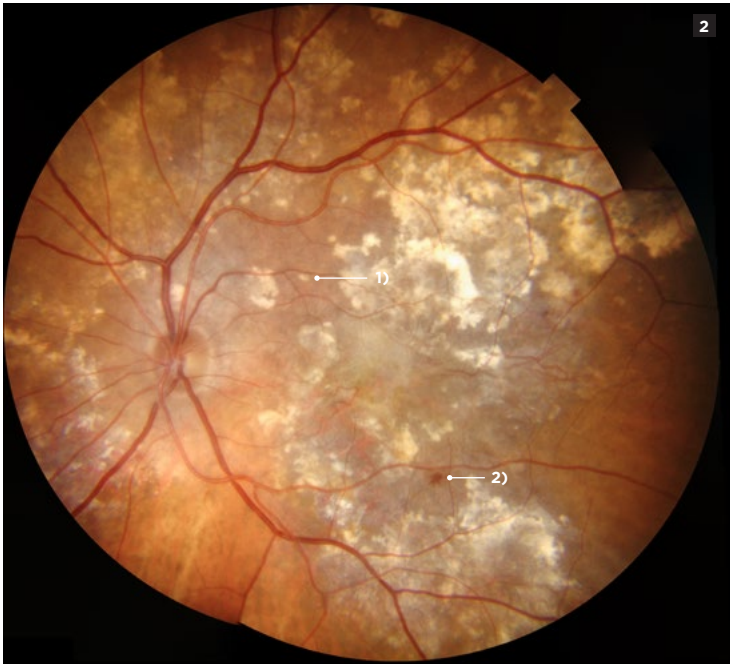
This 79-year-old patient, functionally monophthalmic with right eye (OD) functional visual acuity 0.8, was being followed up for bilateral neovascular age-related macular degeneration (AMD). She had been having treatment with intravitreal anti-VEGF injections (aflibercept).

Examination with the NW500 revealed drusen in the mid-periphery, as well as major macular changes with pigment migrations, consistent with progressive atrophy and scarring. A small haemorrhage was seen in the left eye (OS), requiring follow-up.

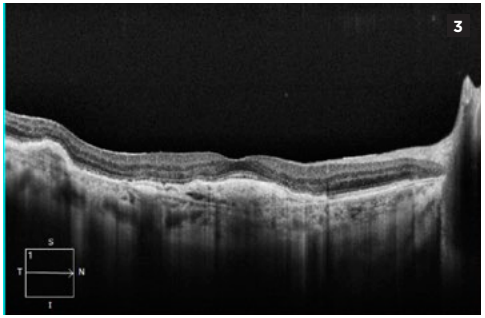
OCT imaging at follow-up showed no serous retinal fluid, indicating a favourable response to treatment. This case highlights the complexity of managing mixed AMD, requiring a careful balance between stabilising the neovascular component and addressing the gradual progression of atrophy.

NW500 Mosaic 2-fields - OD

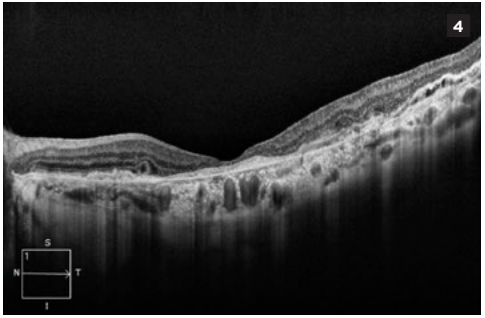
1) Drusen
2) Haemorrhage



NW500 Mosaic 2-fields - OS



OCT Scan - OS



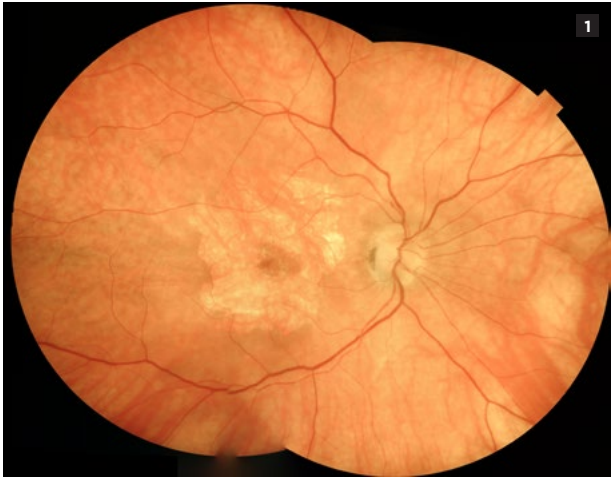
OCT Scan - OD

GEOGRAPHIC ATROPHY

1 2 NW500
3 4 5 6 OTHER IMAGING DEVICES

CASE HISTORY

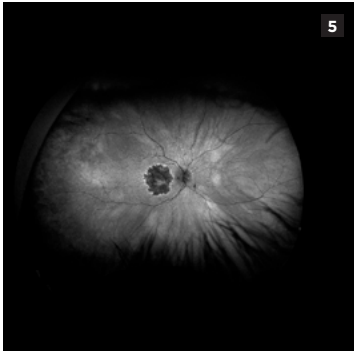
This 77-year-old patient was referred due to gradual bilateral visual acuity loss and a diagnosis of Extensive Macular Atrophy with Pseudo-Drusen (EMAP).



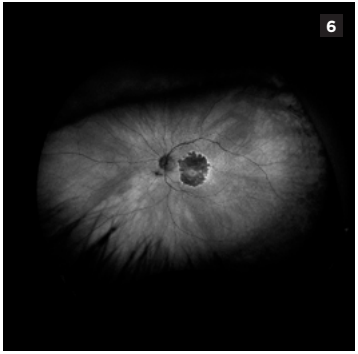
NW500 Mosaic 2-fields - OD

NW500 Mosaic 2-fields - OS

Disc–Macula imaging with the NW500 clearly highlights well-demarcated, round or oval areas of RPE and choriocapillaris atrophy. These sharply circumscribed hypopigmented regions reveal the underlying choroidal vessels, visible due to loss of the overlying RPE.

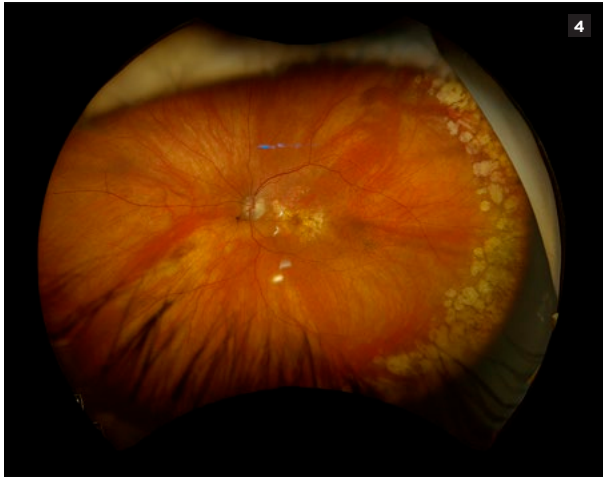


AF Wide Field - OD



AF Wide Field - OS

Ultra Wide Field Fundus Image - OD



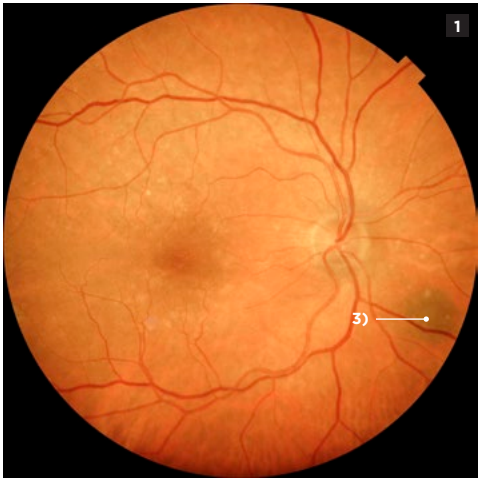
Ultra Wide Field Fundus Image - OS

WET AMD

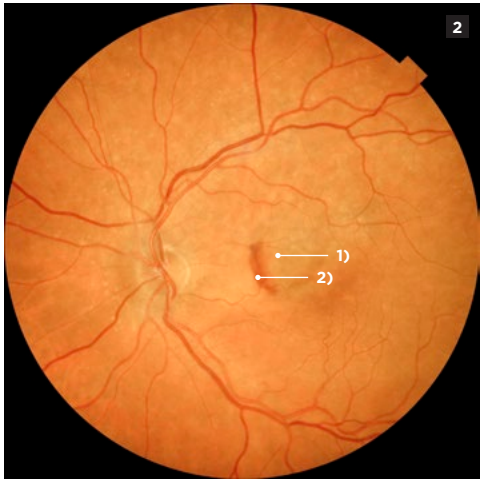
1 2 NW500

CASE HISTORY

A 68-year-old patient with a history of bilateral dry AMD presented with a rapid decline in visual acuity in the left eye over the previous two weeks. The patient also reported central blurred vision and distortion of straight lines (metamorphopsia).



Wet AMD - OD



Wet AMD - OS

These findings (see captioned images) were consistent with wet AMD, urgent treatment with a VEGF inhibitor (ranibizumab or aflibercept) in the left eye to prevent irreversible vision loss. Follow-up includes clinical assessment and retinal imaging with the NW500 and other modalities at each visit to monitor fluid reabsorption and neovascular activity.

The NW500 enables non-invasive true-colour assessment and offers reproducible image quality.

1) Active choroidal neovascularisation (CNV)
2) Retinal haemorrhages
3) Choroidal naevus

PACHYCHOROID NEOVASCULOPATHY

1 2 NW500
3 4 OTHER IMAGING DEVICE

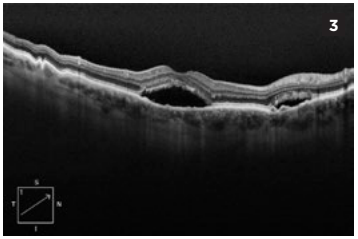
CASE HISTORY

Wet AMD with presence of Sub Retinal Fluid (SRF): monitoring under anti-VEGF.

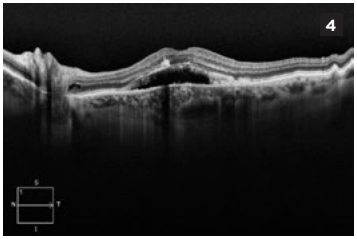
This 75-year-old patient was under follow-up for bilateral exudative age-related macular degeneration (AMD), with greater involvement in the right eye (OD). He was receiving anti-VEGF treatment, and recently switched to Vabysmo (faricimab) in both eyes.
Visual acuity remained relatively stable at 0.6 in the right eye and 0.7 in the left. Multimodal imaging follow-up is essential to monitor treatment response and guide the scheduling of intravitreal injections.

Fundus exam using the NW500 revealed choroidal folds.

OCT imaging shows significant bilateral serous retinal detachment (SRD), along with macular remodelling and pronounced exudative changes.

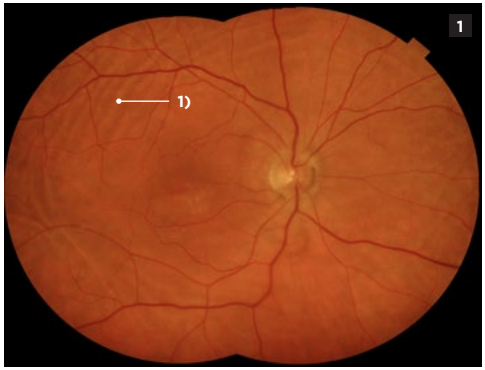


OCT Scan - OD

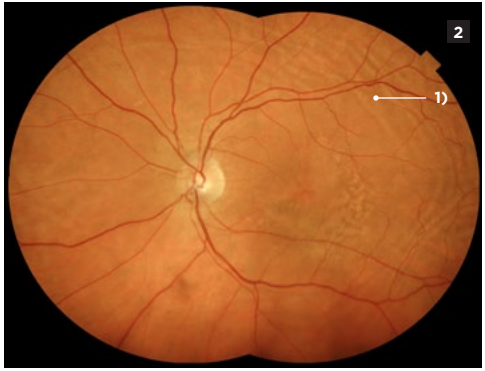


OCT Scan - OS

1) Choroidal folds.



NW500 Mosaic 2-fields - OD



NW500 Mosaic 2-fields - OS

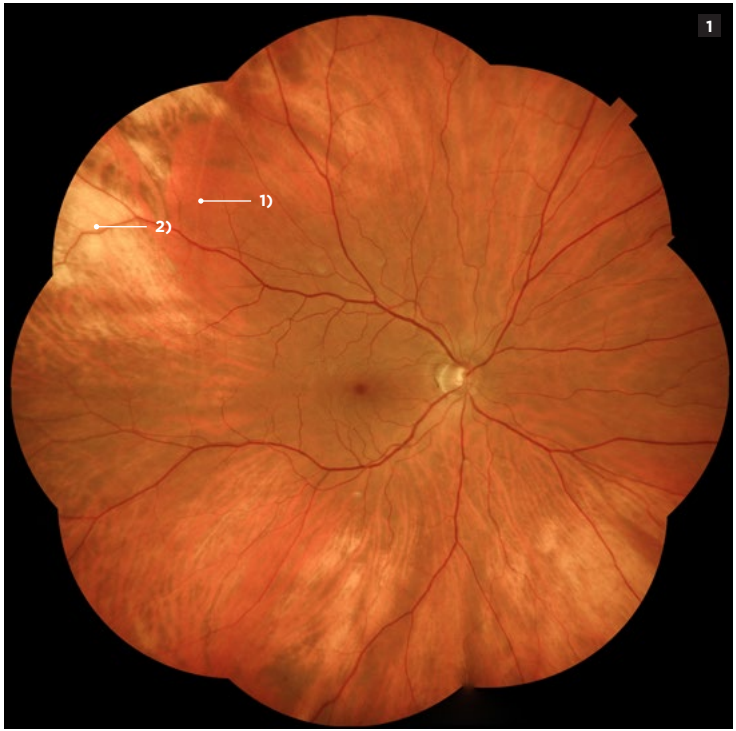
RETINAL DETACHMENT
RHEGMATOGENOUS RD

1 NW500
2 **3** OTHER IMAGING DEVICES

CASE HISTORY

A chronic temporal retinal detachment was discovered incidentally in this 67-year-old patient, who maintained a visual acuity of 1.0 in both eyes. He presented with floaters in the right eye, associated with migraines with aura, and had a history of a cavernous sinus tumour.

As a consequence of this lesion, surgical treatment was performed by vitrectomy with endolaser and gas tamponade in the right eye (OD temporal).

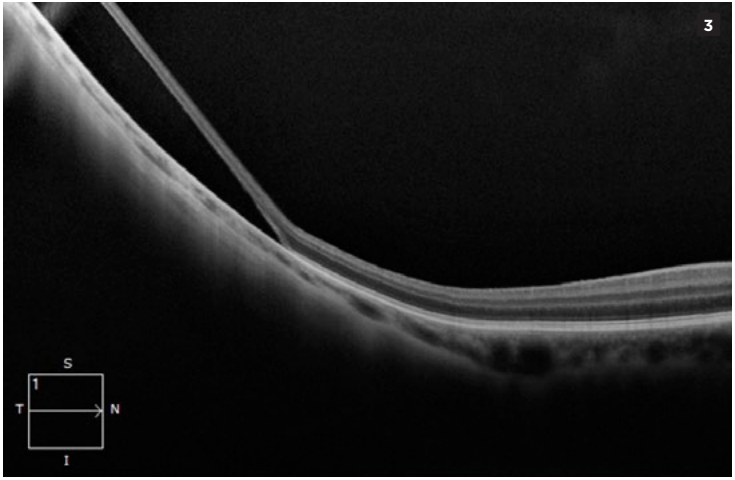


NW500 Mosaic 9-fields - OD

1) Sharp demarcation line
2) Superior temporal atrophy

NW500 retinal imaging identified a chronic temporal retinal detachment (RD), characterised by a sharp demarcation line and superior temporal atrophy, discovered incidentally during the examination. This case highlights the value of systematic imaging in evaluating visual disorders, enabling early detection of potentially progressive anomalies.

Ultra Wide Field Fundus Image - OD



OCT Bscan captured in periphery - OD

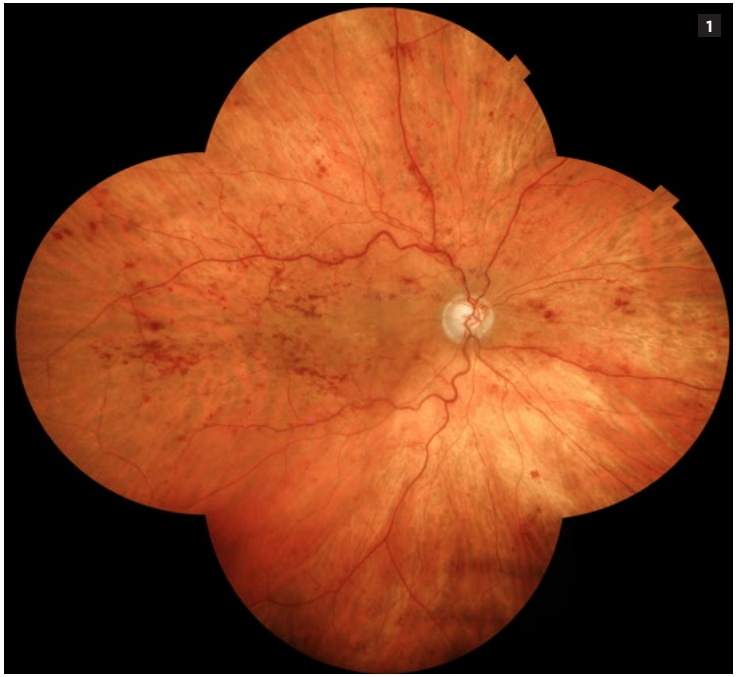
RETINAL VEIN OCCLUSION
CENTRAL VEIN OCCLUSION

1 NW500

CASE HISTORY

An 81-year-old patient was referred with a diagnosis of central retinal vein occlusion (CRVO). In the right eye, visual acuity was limited to hand movements.

True-colour imaging with the NW500 revealed tortuous retinal vessels, marked macular oedema, and multiple spot haemorrhages across all four quadrants, consistent with ischaemic CRVO.



NW500 Mosaic 5-fields - OD

BRANCH RETINAL VEIN OCCLUSION - CASE 1

1 NW500
2 3 OTHER IMAGING DEVICES

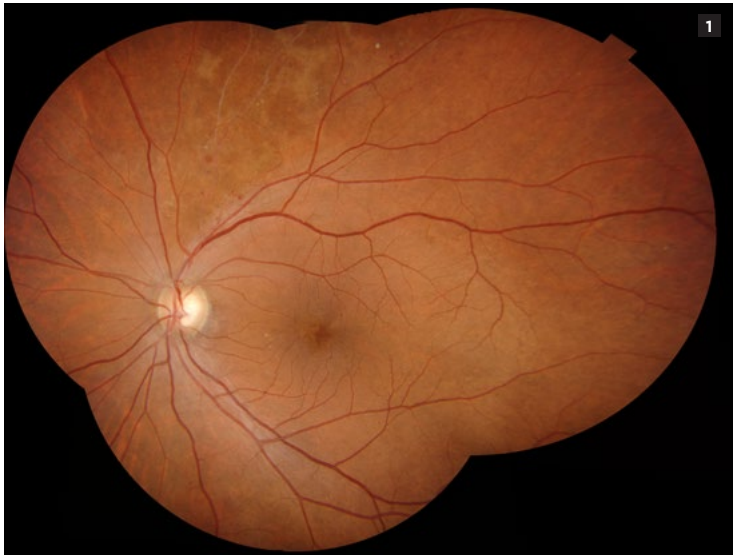
CASE HISTORY

This patient was referred for fluorescein angiography after a recent diagnosis of branch retinal vein occlusion (BRVO) in the left eye. He reported mild blurred vision in the affected eye but maintained a visual acuity of 1.0 in both eyes, with normal intraocular pressure (11 mmHg).

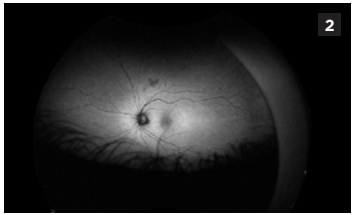
Close follow-up at three months is recommended, along with a comprehensive cardiovascular assessment to identify underlying risk factors and help prevent recurrence or systemic vascular complications.

Examination revealed a superior nasal branch retinal vein occlusion (RVO), marked by ghost vessels and vascular alterations. The foveal contour remained normal, with no macular oedema, resulting in preserved visual acuity.

OCT-Angiography showed a localised avascular area adjacent to the BRVO, while overall retinal vascularisation remained satisfactory.



NW500 Mosaic 4-fields - OS



AF Wide Field - OS

OCT-Angiography - OS

BRANCH RETINAL VEIN OCCLUSION - CASE 2

1 NW500

CASE HISTORY

A 62-year-old patient with a 15-year history of hypertension presented with sudden visual acuity deterioration in the right eye, beginning three days prior. He also reported blurred areas in the lower visual field. No significant ophthalmic history was noted.

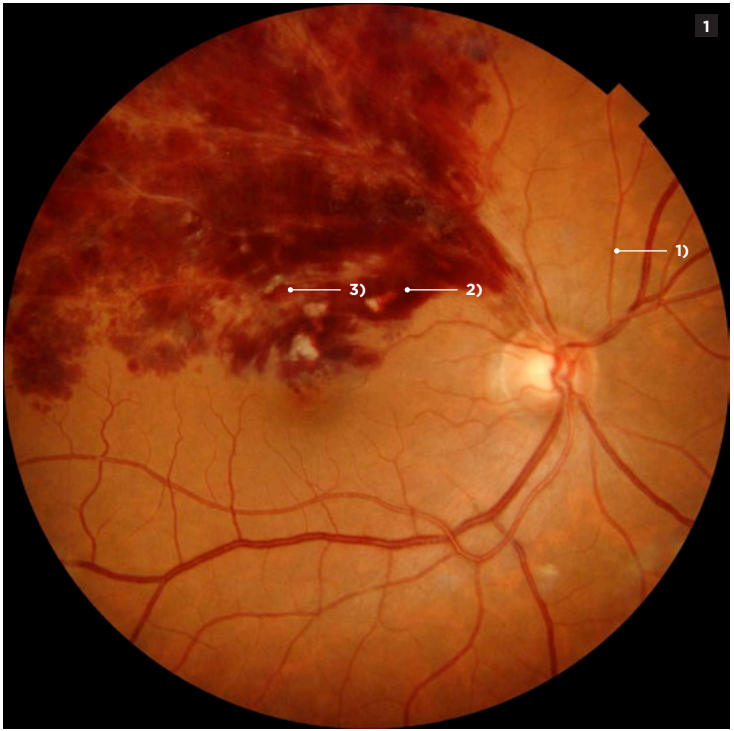
Initial treatment consisted of:

Close observation and monitoring were recommended to assess for spontaneous resolution of haemorrhages and retinal oedema. Intravitreal anti-VEGF injection was considered if clinically significant macular oedema persisted.

Follow-up included:

Regular retinal examinations, including fundus photography with the NW500, were performed every 4 to 6 weeks to monitor resolution of clinical signs and detect potential complications. Fluorescein angiography was performed only when necessary to confirm the extent of retinal ischaemia.

The images captured allowed for accurate visualisation of the extent of the occlusion and the areas affected by oedema.



Branch Retinal Vein Occlusion - OD

1) Dilation of the veins in the upper quadrant
2) Scattered flame-shaped haemorrhages
3) Cotton wool spots

PACHYCHOROID DISEASE
CENTRAL SEROUS CHORIORETINOPATHY (CSCR)

1 NW500
2 OTHER IMAGING DEVICE

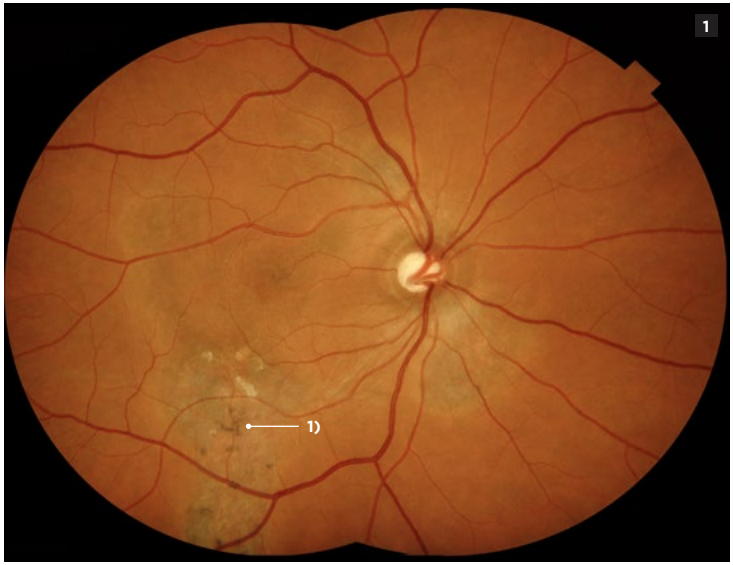
CASE HISTORY

This 51-year-old patient presented with bilateral gravitational tracks indicative of chronic retinal damage. Visual acuity was 0.4 in the right eye (OD) and 1.0 in the left eye (OS). The patient's history includes photodynamic therapy (PDT) in 2019.

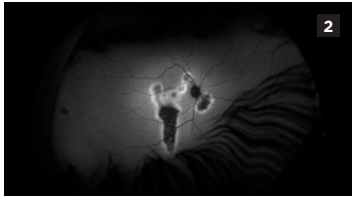
In the right eye, macular changes with numerous pigment migrations were observed, suggesting chronic progression, which was confirmed by fundus autofluorescence.

Symptoms are consistent with CSCR or diffuse retinal epitheliopathy.

As the condition appears inactive, monitoring is recommended, with a follow-up in 3 to 4 months including OCT and fundus autofluorescence imaging to assess pigmentary changes and detect any potential reactivation.



NW500 Mosaic 2-fields - OD



Autofluroescence Wide Field - OD

1) Gravitational tracks

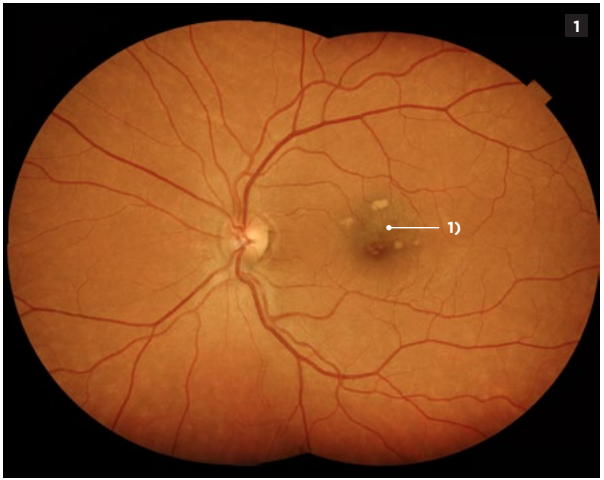
CHOROIDAL NAEVUS
MACULAR CHOROIDAL NAEVUS

1 2 NW500

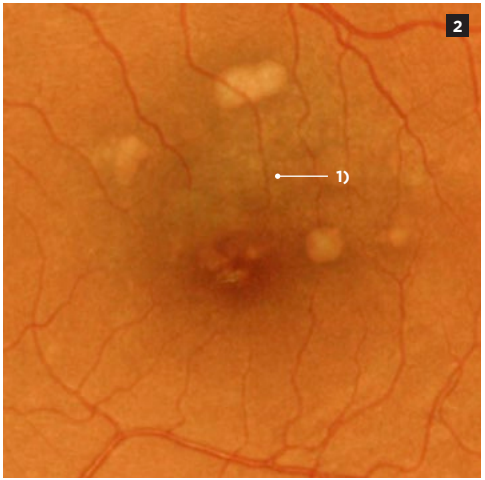
CASE HISTORY

This 53-year-old patient presented with a macular choroidal naevus in the left eye, accompanied by soft drusen, indicating chronic progression of the lesion without features suggestive of malignancy.

Given the benign progress, follow-up at 6 months was recommended, including OCT and fundus autofluorescence, to monitor for any morphological changes that could indicate suspicious transformation.



NW500 Mosaic 2-fields - OS



Zoomed in view of NW500 - Macular naevus - OS

Clinical assessment and OCT retinal imaging showed no features suggestive of malignancy. There was no lesion thickening or serous retinal detachment, no symptoms or orange pigment, and the lesion was small, well clear of the optic nerve, and stable in size with no evidence of growth.

1) Central lesion

TEMPORAL CHOROIDAL NAEVUS

1 NW500

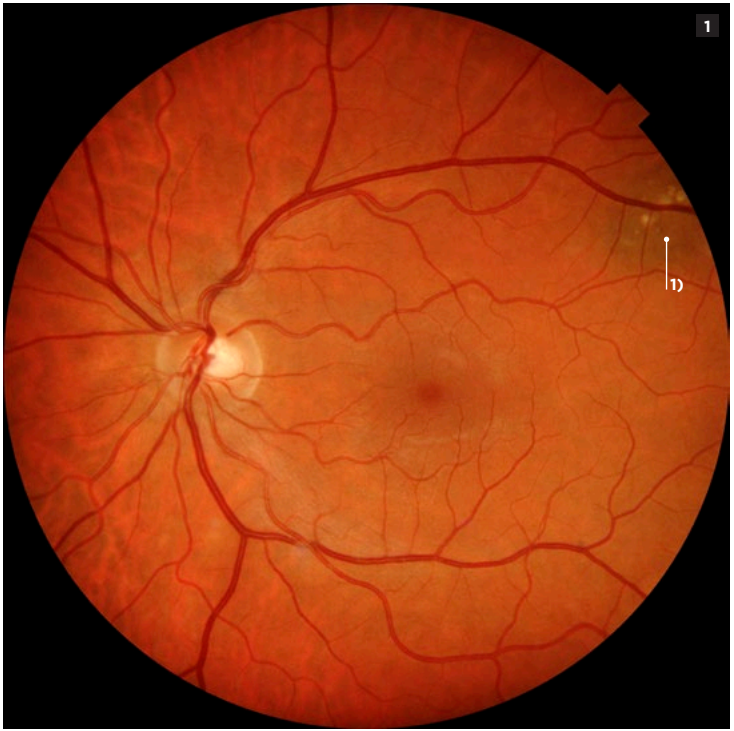
CASE HISTORY

A 45-year-old patient with no significant ophthalmic or medical history presented for a routine eye examination.

Regular follow-up was recommended to monitor progress of the lesion, every 6 months for the first two years, then annually if there was no change.
Follow-up should focus on specific signs of malignancy, including increase in size, thickening, or the appearance of subretinal material or exudates.

The NW500 allowed clear visualisation of a flat, greyish, well-defined pigmented lesion in the temporal peripheral choroid of the left eye. This precise documentation supports long-term monitoring and early detection of potential changes. The quick, non-invasive examination offered the patient a thorough and reassuring consultation.

The assessment can be completed by centring the NW500 on the lesion, utilising the capture function available in one of the eight peripheral quadrants.



Choroidal Naevus - OS

1) Temporal naevus

CHOROIDAL TUMOUR
CHOROIDAL METASTATIC TUMOUR

1 NW500

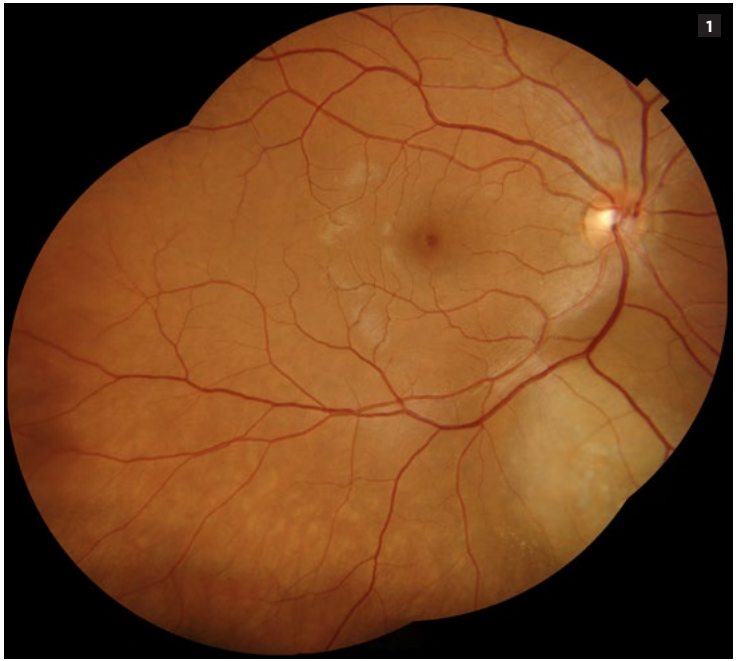
CASE HISTORY

A 41-year-old female patient presented with phosphenes in the right eye that had been progressively worsening over the past month. Her medical history notes breast cancer diagnosed in September 2021, with bone metastases treated with chemotherapy, hormone therapy and targeted therapy.

Choroidal metastases represent the most common secondary ocular tumours, highlighting the importance of systematic ophthalmological screening in patients with metastatic cancers.

Here, the NW500 allowed us to examine the periphery and spot a suspicious lesion suggesting a secondary lesion.

Given the high likelihood of a choroidal metastasis, an immediate imaging assessment was proposed, including brain and orbital MRI and B-mode ultrasound, to assess the extent of the lesion and guide treatment planning.



NW500 Mosaic 3-fields - OD

MEDIA OPACITIES
CATARACT

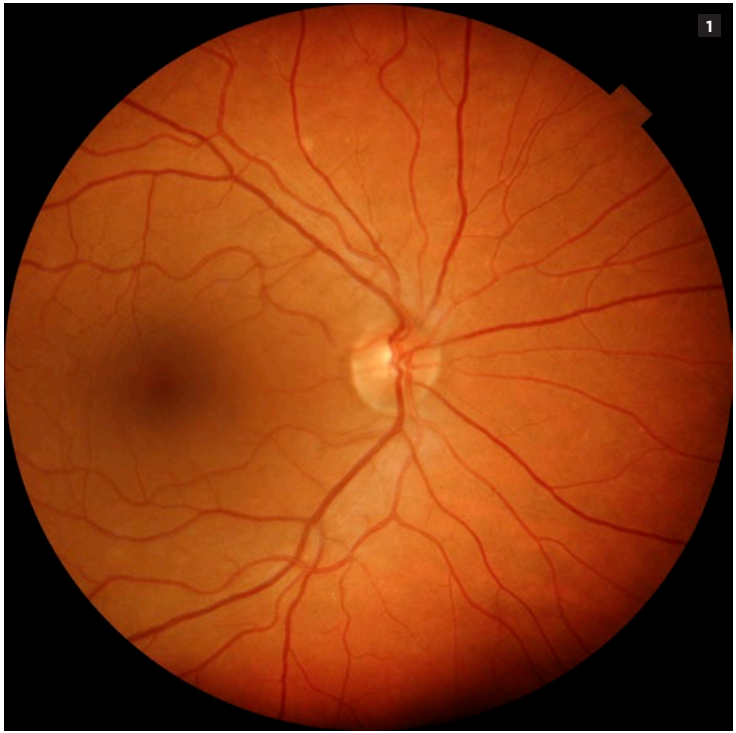
1 NW500

CASE HISTORY

This 48-year-old patient presented a clear cornea, with reduced visual acuity of 0.4 and an anterior polar cataract.

Despite the anterior polar cataract in the right eye (OD), examination of the retina is still satisfactory, and the NW500 allowed analysis of the structures at the back of the eye.

The NW500's combined slit-scan and rolling shutter illumination system allows retinal imaging despite media opacities, unlike a conventional retinal camera.



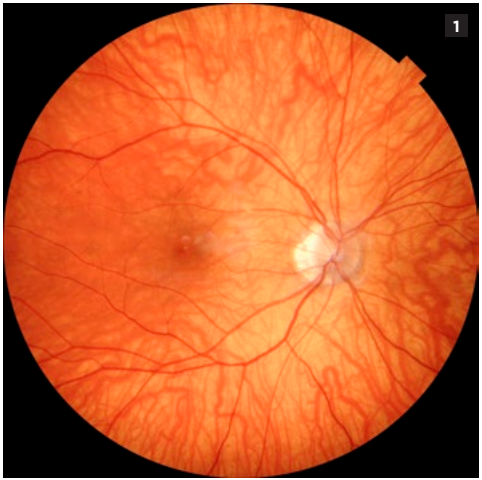
Cataract Patient - OD

HIGHLY MYOPIC EYES
TESSELLATED FUNDUS

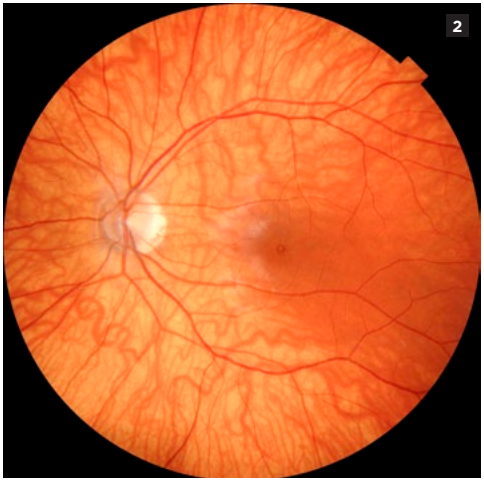
1 2 NW500

CASE HISTORY

This 20-year-old patient was being followed up for high myopia of -6.75D OD and -6.00D OS. Visual acuity remained excellent (1.0 with good near vision in both eyes).



Myopic Patient - OD



Myopic Patient - OS

Fundus examination revealed myopic choroidosis, also known as "tessellated fundus", stage C1 of META-PM, classification of myopic maculopathy, characterised by increased visibility of underlying choroidal vessels through a hypo-pigmented retinal pigment epithelium (RPE). No atrophic complications were detected at this stage.

The NW500 dioptric compensation can be adjusted to suit high refractive errors.

MYOPIC EYE WITH CATARACT

1 NW500

CASE HISTORY

Severe myopia, cataract and macular complications.

This 51-year-old patient was referred due to loss of visual acuity (VA) associated with a cataract, and severe myopia -29.00D OD and -17.50D OS. He was also having treatment for ocular hypertension (OHT) with monotherapy.
The axial length was: OD – 34.43 mm and OS – 33.22 mm.
Bilateral posterior staphyloma was noted, indicative of abnormal excavation of the posterior pole, a common finding in high myopia.

This case illustrates the complexity of severe myopia and the need for rigorous follow-up to prevent or treat any ophthalmic complications.

Blurred vision was attributed to the presence of bilateral cataracts. The retina exhibited a "tessellated fundus" appearance (META PM classification) and diffuse retinal atrophy, characteristic of high myopia, indicating less pigmented RPE and increased visibility of the underlying choroidal vessels.
Papillary dysversion and temporal optic disc atrophy were also noted, consistent with structural damage typically observed in pathological myopia.

NW500 Mosaic 2-fields - OS

GLAUCOMA
OPEN ANGLE GLAUCOMA

1 2 NW500
3 4 IMAGEnet software (Topcon)

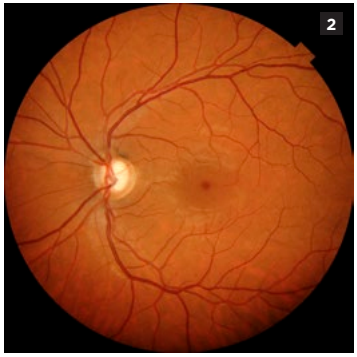
CASE HISTORY
Progressive open-angle glaucoma in a young patient.

This 35-year-old patient has been treated for primary open-angle glaucoma (POAG) since the age of 17, and is currently on monotherapy following Selective Laser Trabeculoplasty (SLT).

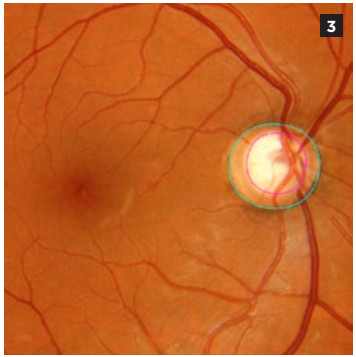
Visual acuity was 1.0 in both eyes with a refractive error of -2.25 dioptres. The macula appeared normal, with significant papillary disc excavation noted, measured at 0.8/0.8.

This case illustrates chronic juvenile glaucoma requiring strict follow-up and personalised therapy adjustment.

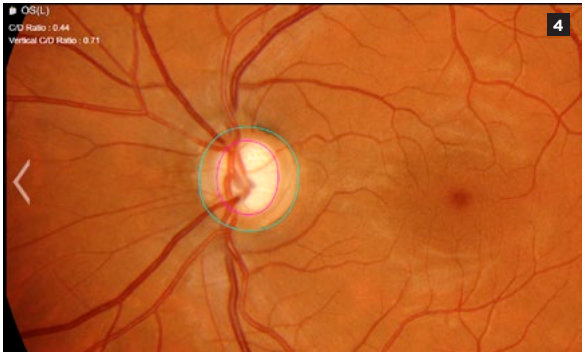
Glaucoma Patient - OD



Glaucoma Patient - OS



CD Ratio measurement on IMAGEnet - OD



CD Ratio measurement on IMAGEnet - OS

The use of IMAGEnet with the NW500 can support the C/D ratio calculation using semi-automatic measurement.

ARCUATE DEFECT IN GLAUCOMA

1 2 NW500

CASE HISTORY

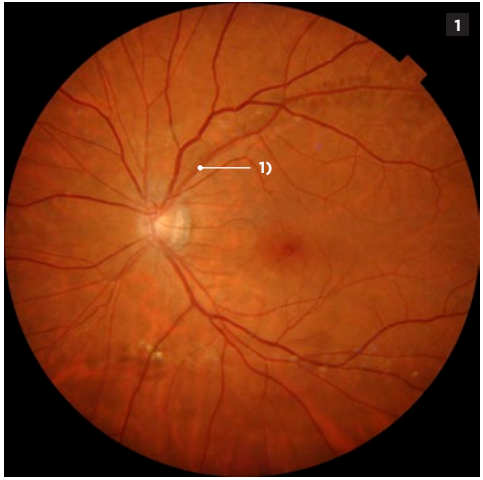
A myopic (-5.50D OS) patient aged 48 years presented for a routine eye examination. No family history of glaucoma was reported.

Fundus examination with the NW500: A slightly enlarged papillary excavation (cup/disc ratio of 0.6) was observed in the left eye, and no notching or disc haemorrhage was observed (Image 2). Scans revealed focal loss of nerve fibres in the upper left quadrant, consistent with an arcuate defect. The peripheral retina showed signs of myopic atrophy with no detachment or active lesion.

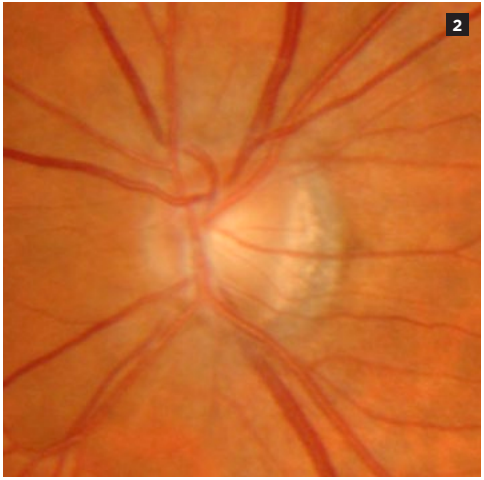
Intraocular pressure was borderline at 21 mmHg (left) and 20 mmHg (right). A corresponding arcuate defect was noted on visual field testing, without central involvement.

Initiate local hypotensive treatment and check intraocular pressure to assess treatment response within 4 weeks. Monitor retinal nerve fibre layer thinning with imaging every 3-6 months. Visual field examination every 6 months to detect any functional changes.

In this case, the NW500 image can be compared with the field of vision.



Arcuate defect in glaucoma - OS



Zoomed in view of the optic nerve with NW500 - OS

1) Arcuate defect

RADIATION RETINOPATHY

RADIATION RETINOPATHY SECONDARY TO CHOROIDAL MELANOMA

1 NW500

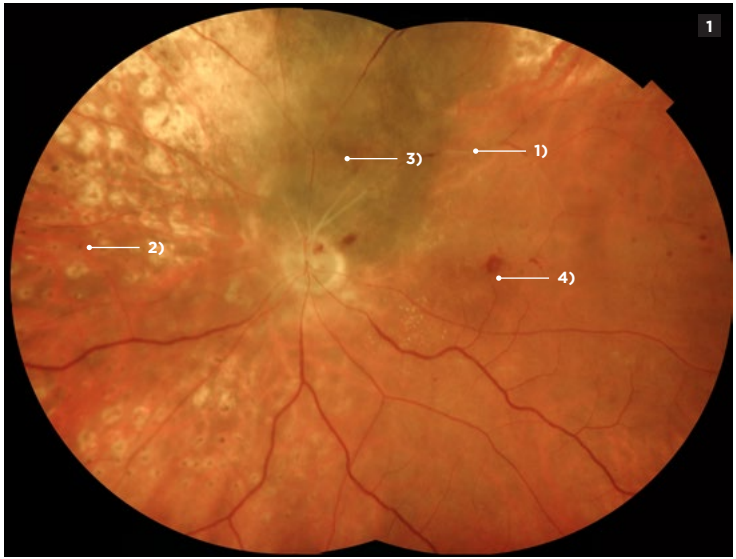
CASE HISTORY

This 56-year-old patient had treatment for choroidal melanoma using proton therapy in 2022. He subsequently developed radiation retinopathy complicated by macular ischaemia, resulting in loss of visual acuity.
The visual acuity of 0.2 in the left eye reflects significant functional impairment.

Regular monitoring with OCT and fluorescein angiography was performed to assess progression of ischaemia and secondary complications. The patient also received oncology follow-up to monitor any recidivism of the tumour or post-therapy complications. Treatment of vascular complications included laser photocoagulation and anti-VEGF therapy in cases of persistent macular oedema.

Non-perfused vessels are present, indicating radiation-induced vascular damage. The areas have been lasered to limit retinal non perfusion areas. A suprapapillary pigmented tumour is visible, consistent with treated melanoma. Macular haemorrhages are also present.

This case illustrates the post-radiation vascular complications of choroidal melanoma, requiring multidisciplinary management from both ophthalmology and oncology.



NW500 Mosaic 2-fields - OS

1) Presence of non-perfused vessels
2) Areas of non-perfusion treated with laser
3) Pigmented tumour superior to the optic disc
4) Macular haemorrhage

The true-colour imaging supplied by the NW500 allows good differentiation of various clinical signs for confident diagnosis.

COATS DISEASE
COATS

1 2 NW500
CASE HISTORY

This 52-year-old patient is being followed-up for Coats disease, a rare, non-hereditary unilateral retinal vasculopathy.

The examination revealed a significant reduction in visual acuity in the right eye (OD) and persistent macular oedema despite TelCaps focal laser treatment.

NW500 Mosaic 2-fields - OD

Zoomed in view of the macula - Coats disease - OD

This case illustrates the potential progression of Coats disease in adults, highlighting the need for regular ophthalmological follow-up with OCT and fluorescein angiography, and a combined treatment approach (focal laser with or without anti-VEGF therapy) to limit visual impairment.

The NW500 revealed macular telangiectasias, along with a crown of hard, circumscribed exudates, a characteristic sign of disease progression.

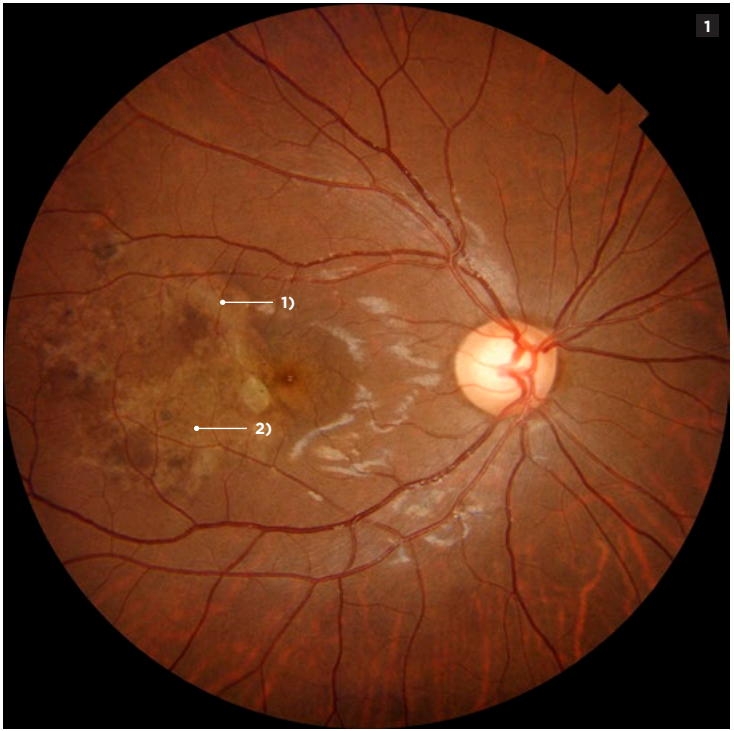
POSTERIOR UVEITIS
ACTIVE POSTERIOR UVEITIS

1 NW500

CASE HISTORY

A 35-year-old patient with no significant medical history presented with a progressive decline in visual acuity in the right eye over the past two weeks. He also reported central visual blurring and mild photophobia. There was no relevant family history or recent ocular trauma. True-colour imaging with the NW500, combined with fluorescein and ICG angiography, supported the diagnosis of recurrent serpiginous choroiditis, based on the presence of yellowish plaque-like lesions and areas of scarring.

The NW500's advanced illumination technology enables clear visualisation of the active edges of inflammatory plaques, which are often difficult to detect on clinical examination alone. Its reproducible imaging provides a precise record for monitoring treatment progress and evaluating efficacy.



Active posterior uveitis - OD

1) Yellowish plaque-like lesions (located at the level of the choroid)
2) Scarred areas

VITREOMACULAR INTERFACE DISORDERS
EPIRETINAL MEMBRANE

1 OTHER IMAGING DEVICE
2 3 NW500

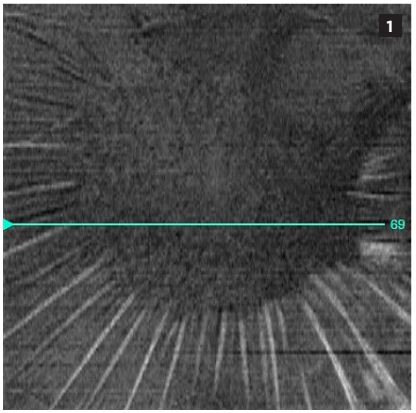
CASE HISTORY

A 62-year-old patient with no significant ophthalmological history presented with a progressive decline in visual acuity in his right eye over the past 6 months. He reported distortion of straight lines (metamorphopsia) and difficulty reading, despite recent optical correction.

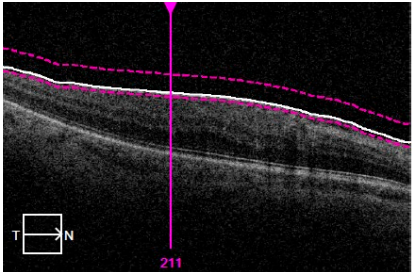
A semi-transparent membrane was observed using the NW500 over the macula, causing the appearance of retinal folds. The images revealed macular thickening associated with distortions of the retinal folds typical of an epiretinal membrane.

The treatment indicated is epiretinal membrane peeling surgery (vitrectomy) with postoperative follow-up (visits planned at 1 week, 1 month, and 3 months after surgery) to assess recovery of vision and the absence of complications, using the NW500.

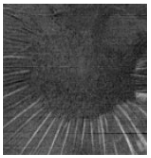
Using the NW500 and OCT, we were able to obtain a clear record of the pre-operative situation for comparison after surgery.

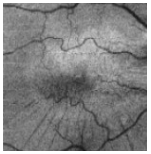


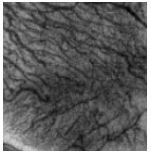
OCT En Face View - OD

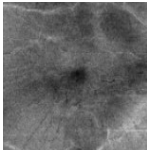


OCT B-Scan - OD

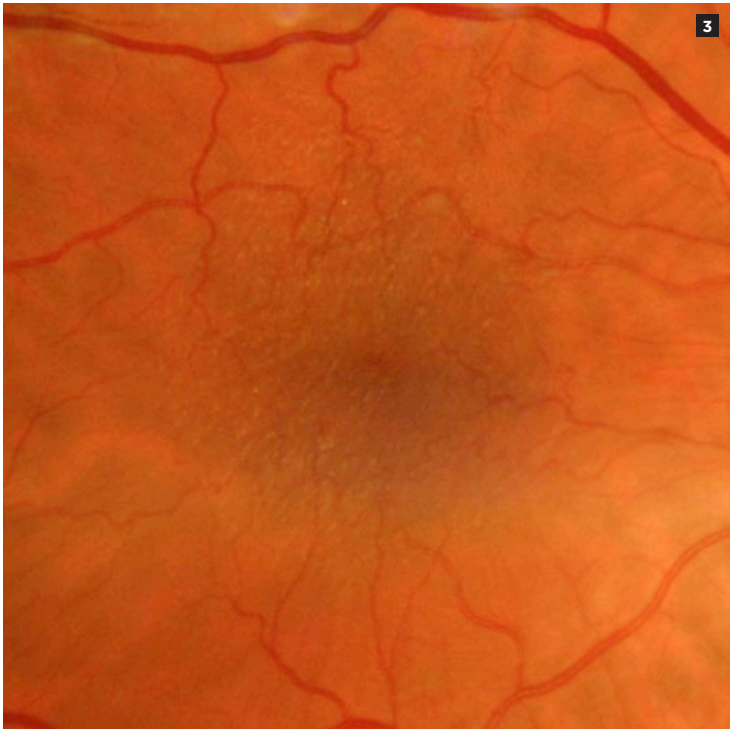








Epiretinal membrane - OD



Zoomed in image of NW500 - OD

INFECTIOUS DISEASE
CONGENITAL TOXOPLASMOSIS

1 NW500

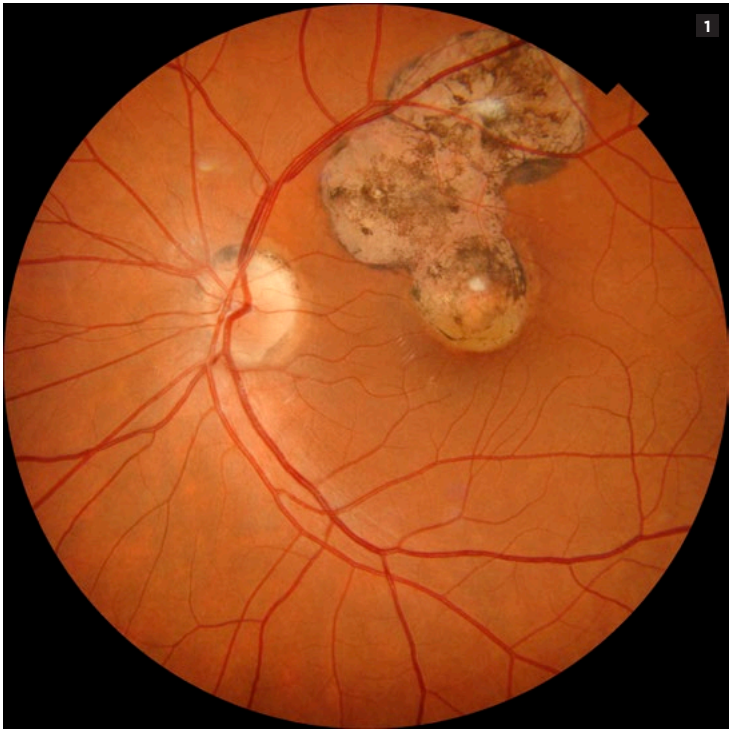
CASE HISTORY

A 28-year-old patient, followed since childhood for congenital toxoplasmosis, presented for his annual ophthalmological assessment. He was asymptomatic and reported no recent changes in vision.

An old, well-defined scar was observed in the upper macular region of the left eye. The lesion, oval and pigmented, showed no evidence of recurrence or inflammatory activity.

Follow-up included retinal imaging with the NW500 every 6 to 12 months. Urgent review was advised if symptoms such as sudden vision loss or metamorphopsia developed, to rule out inflammatory reactivation or choroidal neovascularisation (CNV).

Clear, detailed visualisation of the lesion and adjacent macula is essential to reassure the patient about the stability of their condition.



Congenital Toxoplasmosis - OS

RETINAL DYSTROPHIES
CUTICULAR DRUSEN

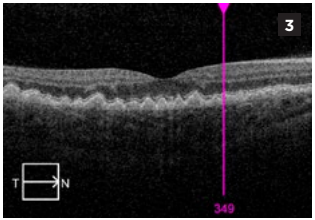
1 2 NW500
3 4 OTHER IMAGING DEVICE

CASE HISTORY

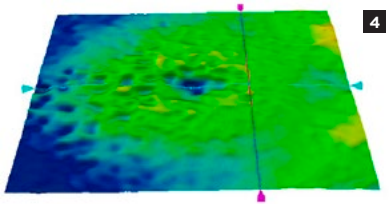
A 28-year-old patient presented for ophthalmological assessment due to a family history of retinal dystrophies. He reported no visual symptoms, and visual acuity was preserved.

Multiple, small, densely distributed cuticular drusen were observed in the macular region in both eyes. These lesions exhibited the characteristic “honeycomb” appearance on fundus autofluorescence images.
OCT imaging shows the presence of low-lying drusen within the retinal pigment epithelium (RPE), without any significant alterations in the RPE or photoreceptors.

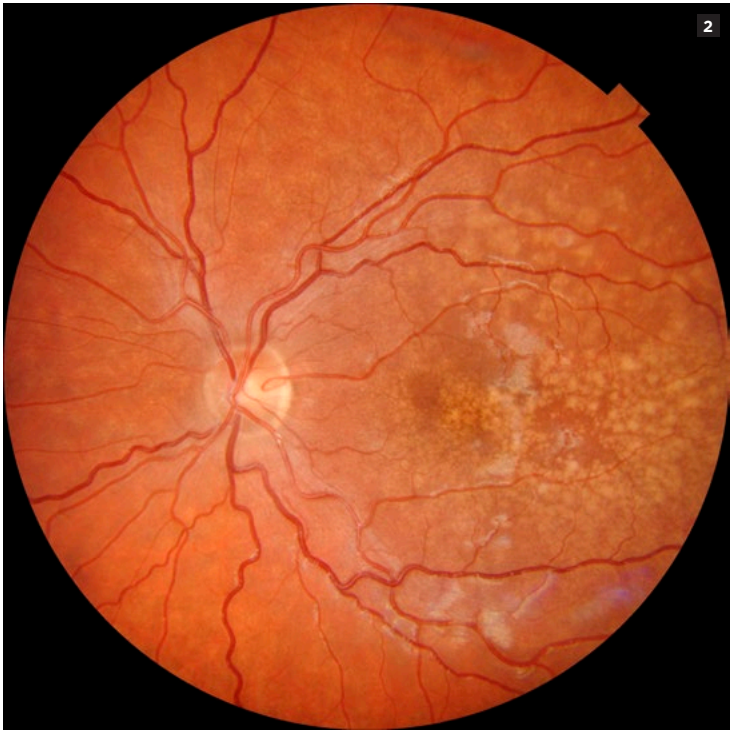
Cuticular Drusen - OD



OCT B-Scan - OD



ILM-RPE Thickness Map from OCT 3D scan - OD



Cuticular Drusen - OS

Annual follow-up with retinal imaging is recommended to detect any progression or complications (atrophy, choroidal neovascularization).

The NW500 offers clear visualisation of subretinal deposits, aiding in the differential diagnosis from other drusen types or macular conditions. Long-term follow-up with the NW500 is essential to monitor changes over time.

CENTRAL HAEMORRHAGE
MACULAR PHOTOTRAUMA

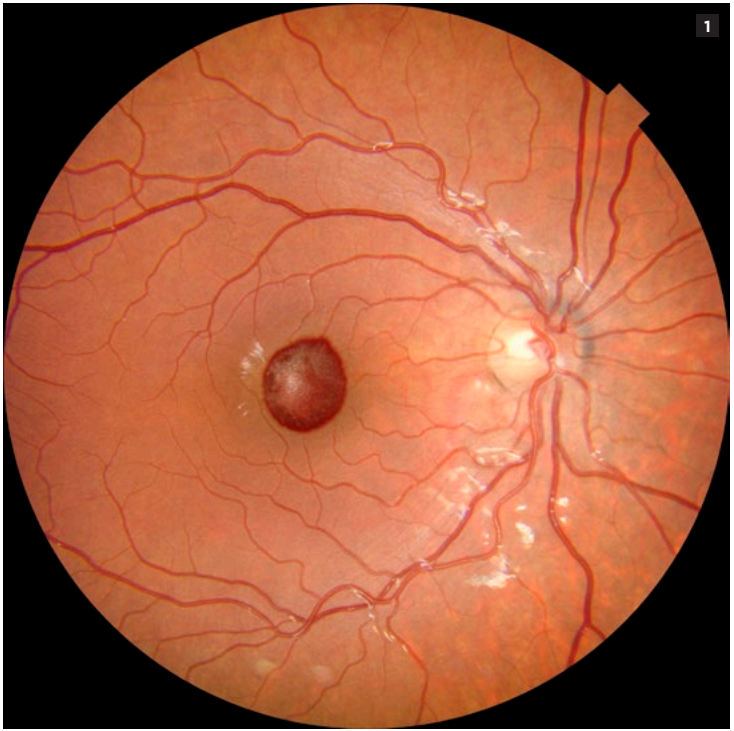
1 NW500
2 OTHER IMAGING DEVICE

CASE HISTORY

An 11-year-old boy presented for emergency evaluation after exposure to a high-powered laser pointer during a family event. He reported acute, painless central vision loss in the right eye, described as a persistent dark spot in his visual field.

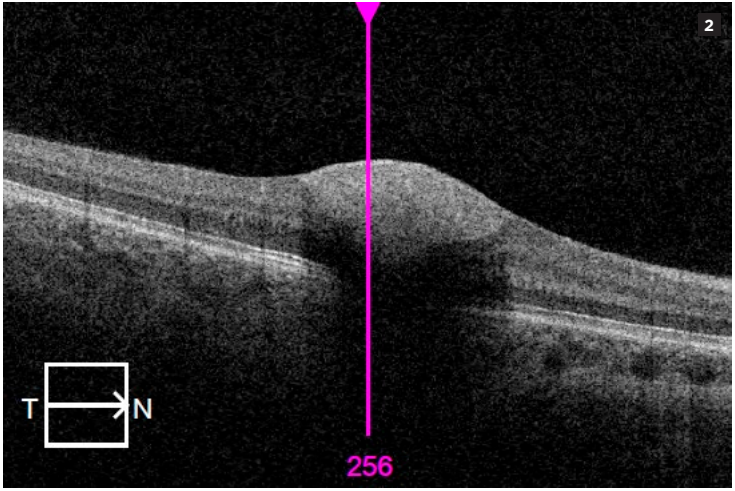
In the right eye, a circular haemorrhage was observed beneath the internal limiting membrane, centred on the fovea. No retinal tears or posterior vitreous detachment were noted. OCT confirmed a subfoveal haemorrhage, with intact underlying photoreceptor structure and no detachment of the retinal pigment epithelium.

In this case, the NW500 provided accurate visualisation of the supra foveal haemorrhage and its margins. OCT was used to confirm the exact location near the internal limiting membrane. Both the NW500 and OCT were used to record and monitor progress on resorption of the haemorrhage.



Central Haemorrhage - OD

The NW500 non-mydriatic retinal camera offers rapid, non-invasive imaging, ideal for urgent assessment in younger patients. In cases like this retinal injury with central haemorrhage, it enables timely, child-friendly evaluation.



OCT Scan - OD

OPTIC NERVE
IDIOPATHIC INTRACRANIAL HYPERTENSION PAPILLOEDEMA

1 2 NW500

CASE HISTORY

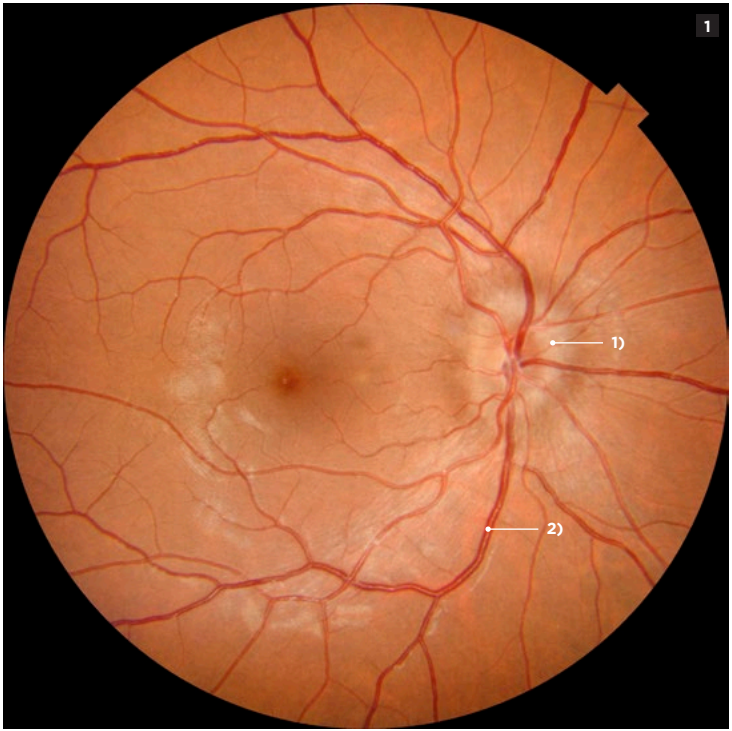
Case of bilateral papilloedema associated with idiopathic intracranial hypertension (IIH).

A 29-year-old obese patient (BMI: 32) presented due to persistent diffuse headaches for two months, accompanied by transient episodes of blurred vision and pulsatile tinnitus. She reported no significant ophthalmic or neurological history.

On examination, both optic discs appeared raised and hyperaemic with blurred margins. Peripapillary flame-shaped haemorrhages were observed bilaterally, along with exudative folds near the peripapillary retina. Retinal veins appeared dilated and tortuous.

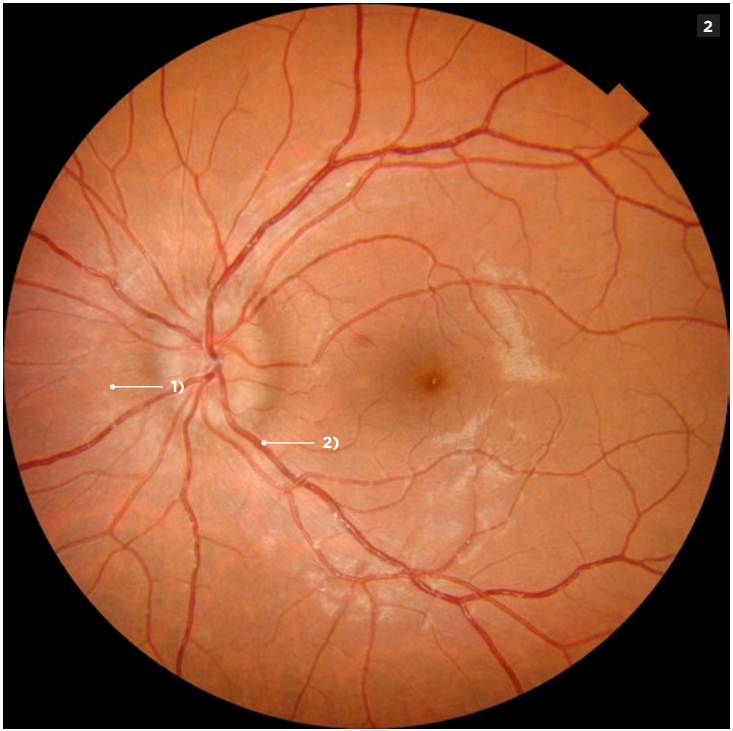
Imaging confirmed the characteristic features of advanced bilateral papilledema, with effacement of the papillomacular margins.

The visual field confirmed moderate and diffuse peripheral defects, more substantial in the lower quadrants.



Papilloedema - OD

1) Exudative folds in the peripapillary retina
2) Dilated retinal veins



Papilloedema - OS

The NW500 non-mydriatic retinal camera allows differentiation between true papilledema and pseudopapilledema, such as that associated with optic nerve head drusen, through high-resolution imaging. Its non-invasive design is well-suited for urgent assessments and enables regular monitoring of optic disc changes, supporting timely and accurate clinical decision-making.

OPTIC NERVE DRUSEN

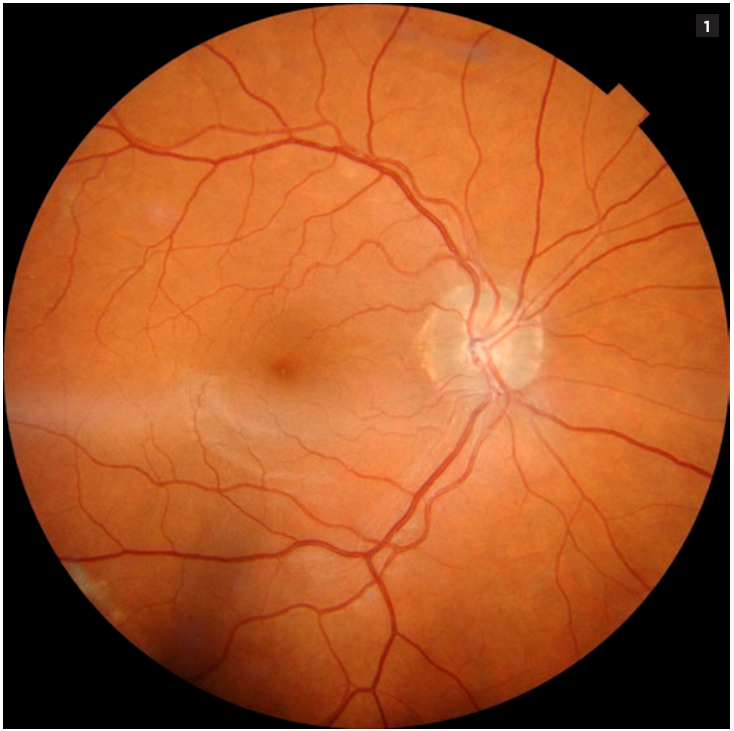
1 2 NW500
3 OTHER IMAGING DEVICE

CASE HISTORY

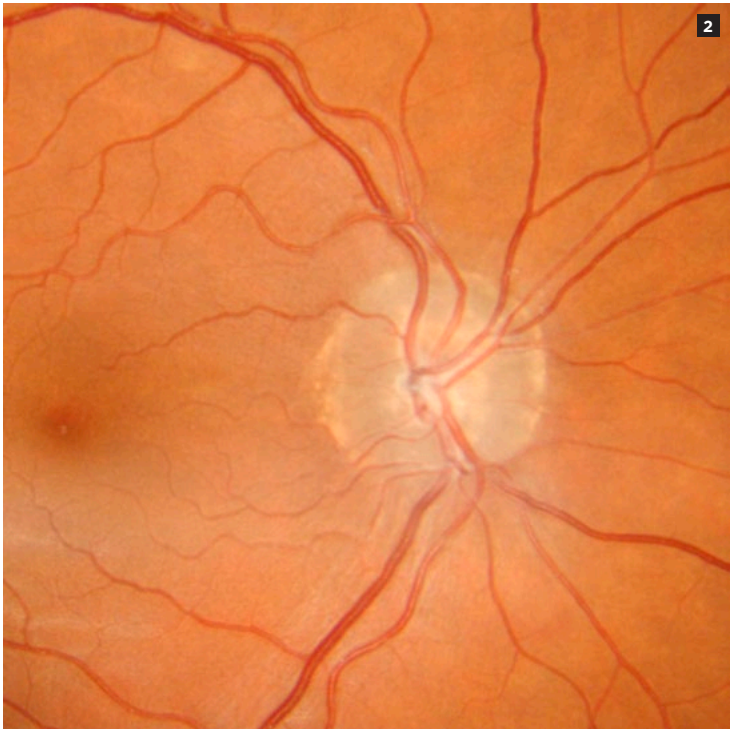
A 24-year-old patient presented for ophthalmological assessment after a routine orthoptic check-up revealed a slightly elevated papilla. She reported no visual symptoms, and visual acuity was normal. The patient has no significant ophthalmic or family history.

Both optic discs appeared elevated, with blurred edges and punctate hyperreflectivity at the optic nerve head. Imaging demonstrated deposits consistent with optic nerve head drusen visible on the disc surface. No vascular abnormalities or signs of venous stasis were observed.

The NW500 enabled detailed visualisation of the papilla and early detection of drusen.



Optic Nerve Drusen - OD



Zoomed in image of the optic nerve - OD

Optic nerve OCT B-scan - OD

VASCULITIS
ARTERIAL VASCULITIS

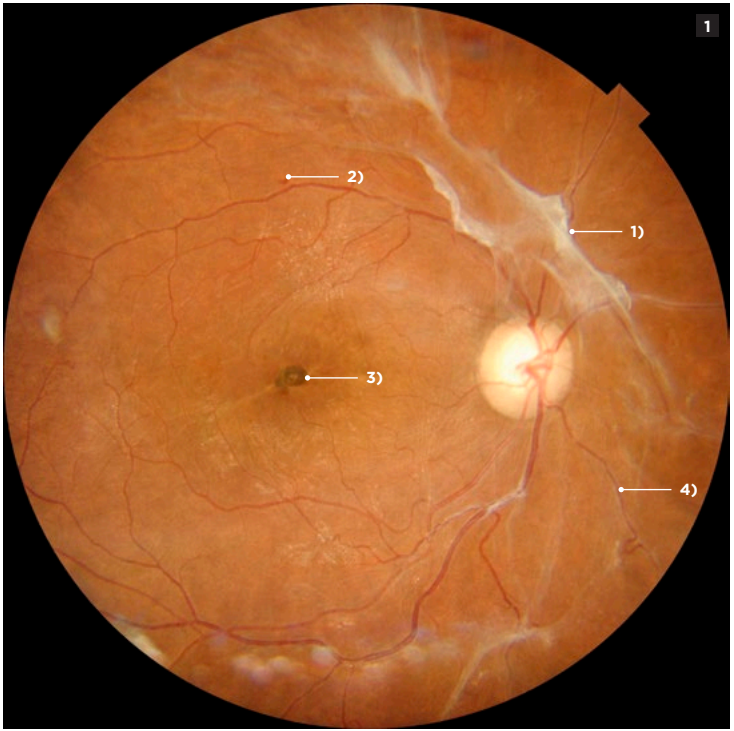
1 NW500
2 OTHER IMAGING DEVICE

CASE HISTORY

A 27-year-old patient presented for ophthalmological follow-up following an episode of acute inflammatory arterial vasculitis in the right eye, treated six months earlier. She reported a moderate reduction in visual acuity in the right eye and areas of blurred vision, while the left eye remained asymptomatic. The patient has a suspected, but unconfirmed, history of autoimmune disease and no other known ophthalmic history.

Examination revealed segmental retinal atrophy along the superior and inferior arterial arcades, consistent with the sequelae of arterial vasculitis. The retinal arteries were markedly thinned, with evidence of prior occlusive events and residual haemorrhages. Subretinal scar exudates were present.

OCT revealed significant thinning of the inner retinal layers. With chronic cystoid macular oedema and the presence of retrofoveal pigment migration.

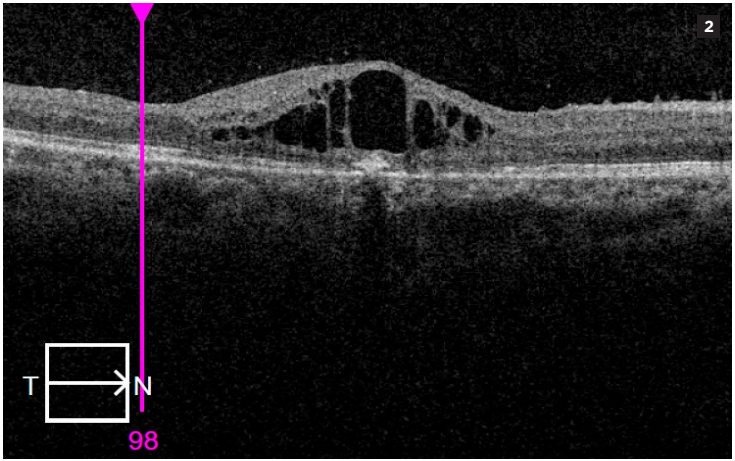


Arterial Vasculitis - OD

1) Non-vascularised fibrous proliferation membrane
2) Residual haemorrhages
3) Presence of retrofoveal pigment migration
4) Marked arterial thinning

The visual field of the right eye indicated segmental scotomatous defects corresponding to areas of arterial damage.

Management was multidisciplinary and designed to monitor sequelae and prevent these getting worse.



OCT Scan - OD

STARGARDT DISEASE
ADVANCED STARGARDT DISEASE

1 2 NW500

CASE HISTORY

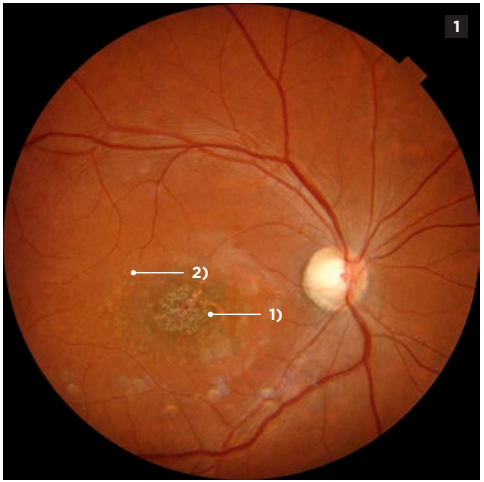
A 32-year-old patient presented for follow-up of Stargardt disease, diagnosed in adolescence. She reported progressive central vision loss, with visual acuity now reduced to 0.2 in both eyes, along with increased difficulty distinguishing fine detail and problems with light adaptation.

A detailed fundus examination revealed extensive bilateral macular atrophy with marked alterations of the retinal pigment epithelium (RPE). Numerous yellowish deposits, known as fish-tail flecks and characteristic of Stargardt disease, were observed throughout the posterior pole.

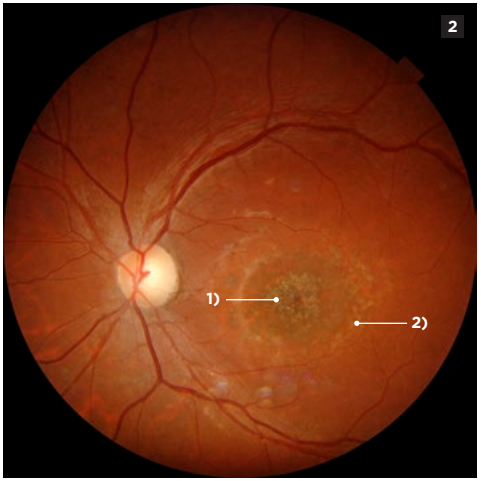
The retinal arteries appeared slightly thinned, although no other notable vascular abnormalities were noted.

There is currently no cure, but measures have been implemented to preserve the patient's quality of life, including annual ophthalmological follow-up with retinal imaging to monitor for the development of neovascularisation.

The NW500 provides clear differentiation between atrophic macular lesions and potential neovascular complications.



Stargardt Disease - OD



Stargardt Disease - OS

1) Yellowish deposit
2) Area of atrophy

ANTERIOR SEGMENT
IRIS NAEVUS

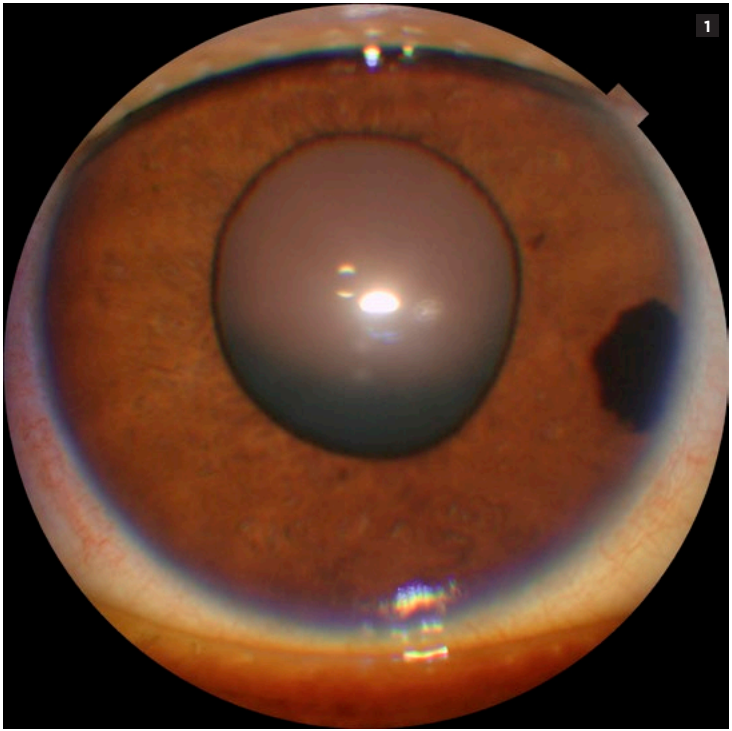
1 NW500

CASE HISTORY

The NW500 enables anterior segment imaging without the need for additional lenses or forehead rest attachments, allowing capture and documentation of any notable findings.

During a routine biomicroscopic examination, an iris naevus was incidentally identified. The lesion was well-circumscribed, pigmented, typically flat or slightly elevated, and asymptomatic, with no evidence of secondary complications.

Given its benign appearance and absence of concerning features, clinical monitoring was recommended to track any changes over time.



Benign iris naevus

LISCH NODULES

1 2 NW500

CASE HISTORY

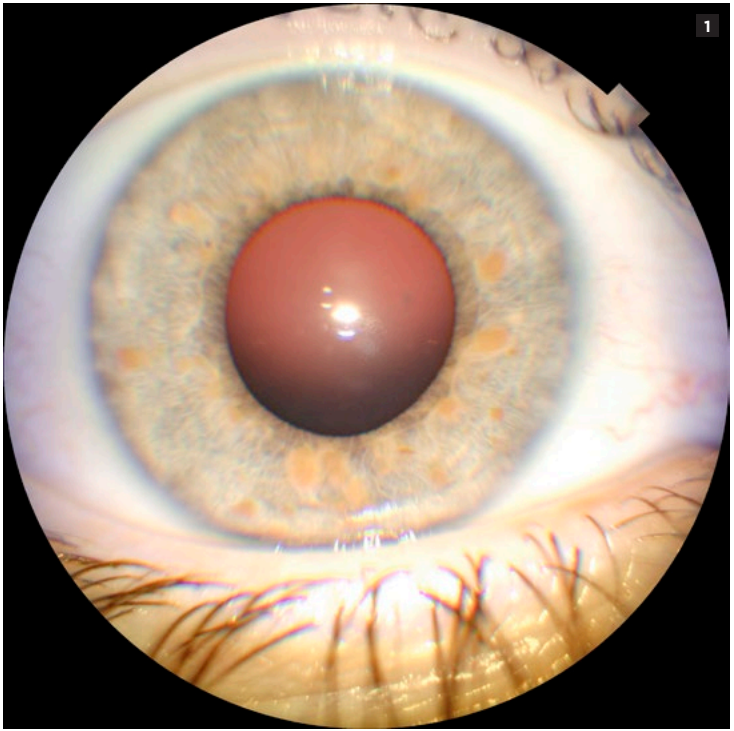
Neurofibromatosis type 1 (NF1) and Lisch nodules: ophthalmological screening.

This 14-year-old patient was undergoing treatment for neurofibromatosis type 1 (NF1) associated with a hypothalamic glioma. She had no visual symptoms and wore myopia control lenses.

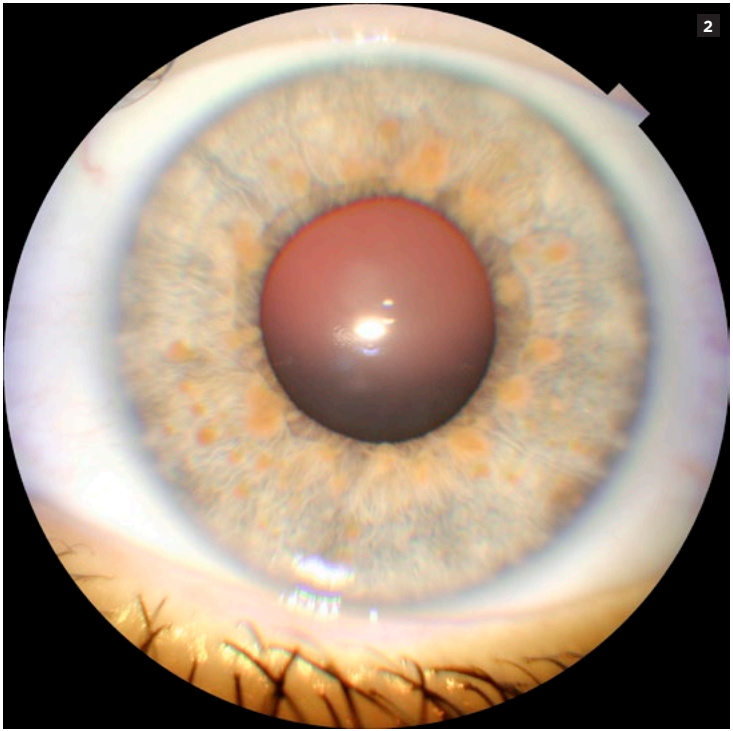
The anterior chambers were deep and quiet, with clear corneas. Lisch nodules were observed on the iris. Visual acuity was 1.0 in both eyes, with excellent near vision.

Lisch nodules are small, benign pigmented lesions, usually brown or yellow on the iris surface. They are asymptomatic, do not affect vision, and are often bilateral. Lisch nodules are a hallmark of neurofibromatosis type 1 (NF1), with prevalence increasing with age: rare in young children but present in over 90% of adults with NF1.

This case illustrates the importance of systematic ophthalmological screening in NF1 in order to detect possible complications.



Lisch Nodules - OD



Lisch Nodules - OS

The NW500 allows anterior segment imaging, providing comprehensive tracking of the ocular structures without the need for an additional lens.

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