NWRS Case presentation

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Case Presentation

85 years old caucasian male referred to rheumatology in January 2026 for a low probability of GCA in the context of diplopia and normal inflammatory markers.

Personal Medical History:

1. Left carotid stenosis status post endarterectomy (February 2025)
2. Mitral valve replacement (2024)
3. Hypertension
4. Mild cognitive impairment
5. Generalized anxiety disorder/major depressive disorder
6. Atrial fibrillation
7. Bilateral hearing aids

Case Presentation

Medication List:

- Atorvastatin 20 mg QHS
- Apixaban 5 mg PO BID
- Vitamin D
- Betamethasone topical cream

Family History:

No known family history of any autoimmune diseases

History

- **Intermittent Diplopia**

  Symptoms began in February 2025 with binocular vertical diplopia spells lasting 1-2 minutes and occurring every two weeks, although sometimes more frequently

- **Visual Episode**

  At presentation on February 14th, 2025, he mentioned having an episode of a yellow veil over his left eye, lasting around one minute in January, considered suspicious for amaurosis

- **Scalp Symptoms**

  Scalp itch that began in the spring, intermittent and mild

Initial Investigation

February 2025

CRP	Hemoglobin	Platelets	LDL
4.2	120	223	1.72
mg/L	g/L	$\times 10^9$/L	mmol/L

Anti-acetylcholine receptor antibodies: negative

Initial Investigation

Head and Neck CT Angiogram:

Noncalcified atherosclerotic plaque resulting in 65% luminal narrowing of the proximal left internal carotid with a 5 mm ulceration at the left carotid bifurcation.

Clinical Outcome:

- This was considered the culprit lesion
- Patient underwent carotid endarterectomy
- No recurrence of transient vision loss
- Diplopia continued to occur intermittently throughout 2025

GCA Pre-test Probability [1,2]

S-GCAPS Score	**7**	*Low Risk*
BK Score	**2**	*Low Risk*
Ing Model	**10.1%**	*Average Risk*

Hu A, Beattie K, Bhavsar S, et al. Rheumatology. 2019
Ing et al, Clin Ophthalmol. 2019

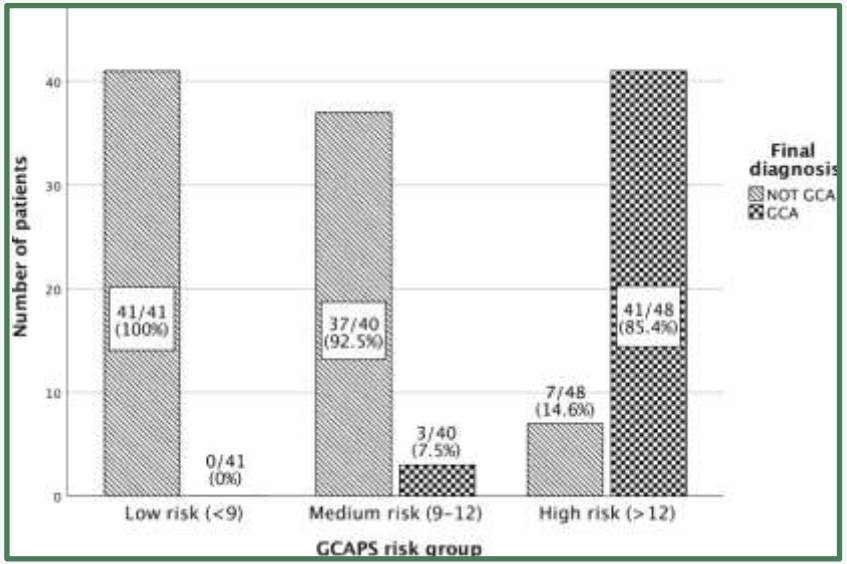
GCA Pre-test Probability

Clinical Application

Some authors suggest using GCAPS to guide referrals

100% Sensitivity

Three different cohorts suggested a 100% sensitivity for a GCAPS score 9 or more



Melville AR, Donaldson K, Dale J, Ciechomska A. Rheumatol Adv Pract. 2021
Houser A, Price L, Journal of Vascular Surgery, 2025
Timothy K Chong, et al. Rheumatology, 2025,

Ultrasound Results

Ophthalmologic Examination

Unremarkable

Suspected sagging eye syndrome

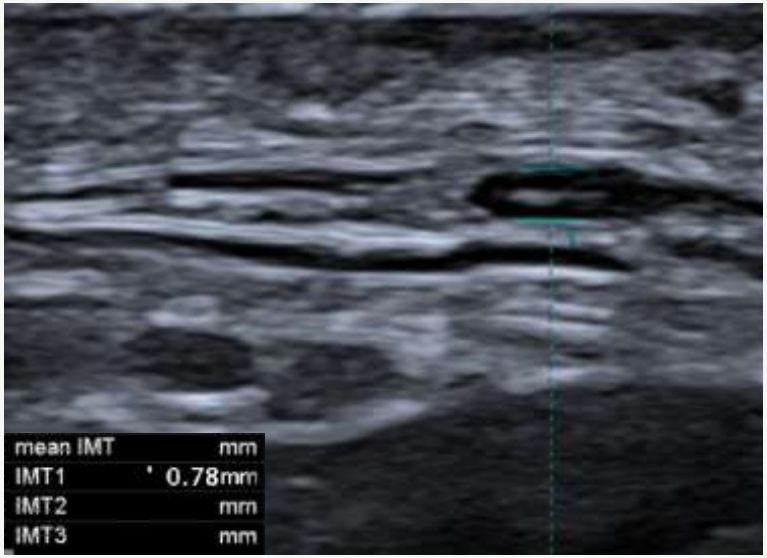
Vascular Imaging

Borderline cranial vessels

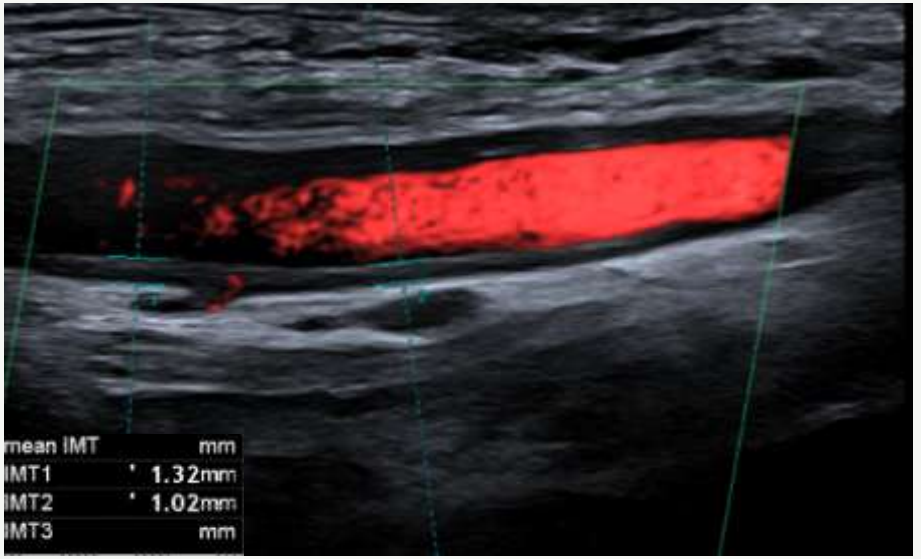
Florid large vessel vasculitis

Ultrasound Results

Left common temporal



Left Axillary



Key questions

Intermittent and infrequent diplopia : is this typical?

Normal inflammatory markers and subtle symptoms : how do we avoid missing these cases?

A-AION vs NA-AION : are there new modalities to distinguish them?

Diplopia in Giant Cell Arteritis [4,5]

7% Prevalence

In the largest meta-analysis from early 2026, affects 7% of GCA patients

CN Cranial Nerves

Most often involves palsies of cranial nerves 6, 3, and 4

⊕ Mechanisms

Extra-ocular muscle ischemia and brainstem involvement can also lead to diplopia

35% Intermittent

Diplopia is intermittent in up to 35% of cases

4. Chazal T, *et al.* J Neuroophthalmol. 2024;
5. Dhivagaran, T. *et al.* Eye (2026).

Key Message #1

GCA should be suspected in patients with one compatible sign or symptom when :

1. Inflammatory markers are elevated
2. Other symptoms, even subtle, are present
3. No alternative cause is found after thorough investigation

Rheumatologists know this… the key to improving outcomes is making sure the referring clinicians know it too!

Key Message #2

Evaluation of pre-test probability is not a failproof tool, even when performed by an expert clinician or using multiple validated scores.

There is no single score, history or physical exam finding that rules out GCA

Future directions

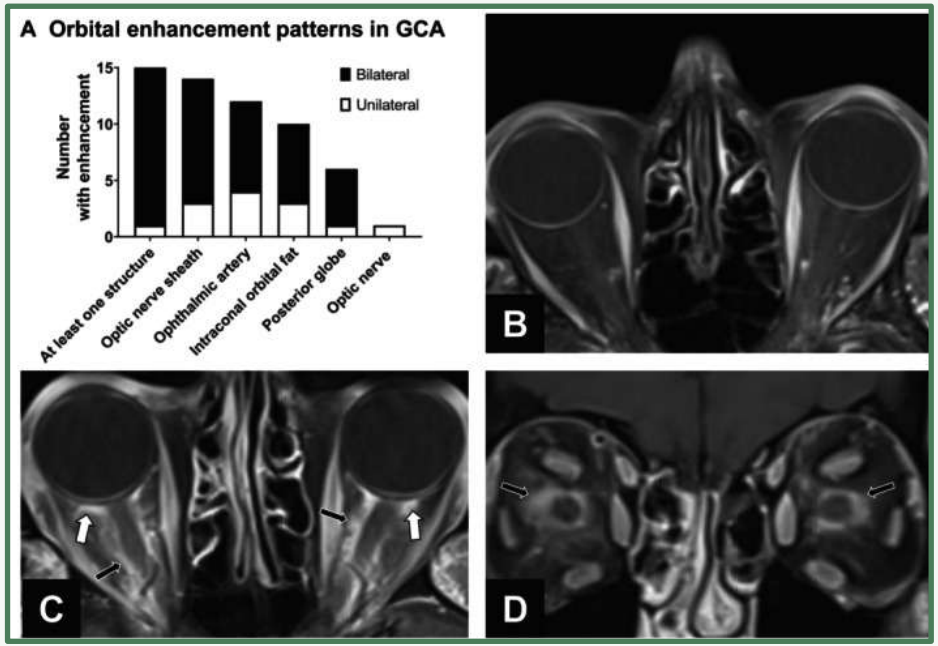
Improving assessment of visual symptoms with orbital imaging

Cohort Study (n=64)

12 patients had GCA with visual involvement
→ 83% showed ONS enhancement

13 patients without ocular involvement
→ 38% had ONS enhancement

Non-GCA cases
→ only 5% showed enhancement



Rhee RL, Rebello R, Tamhankar MA, et al. ACR Open Rheumatol. 2024

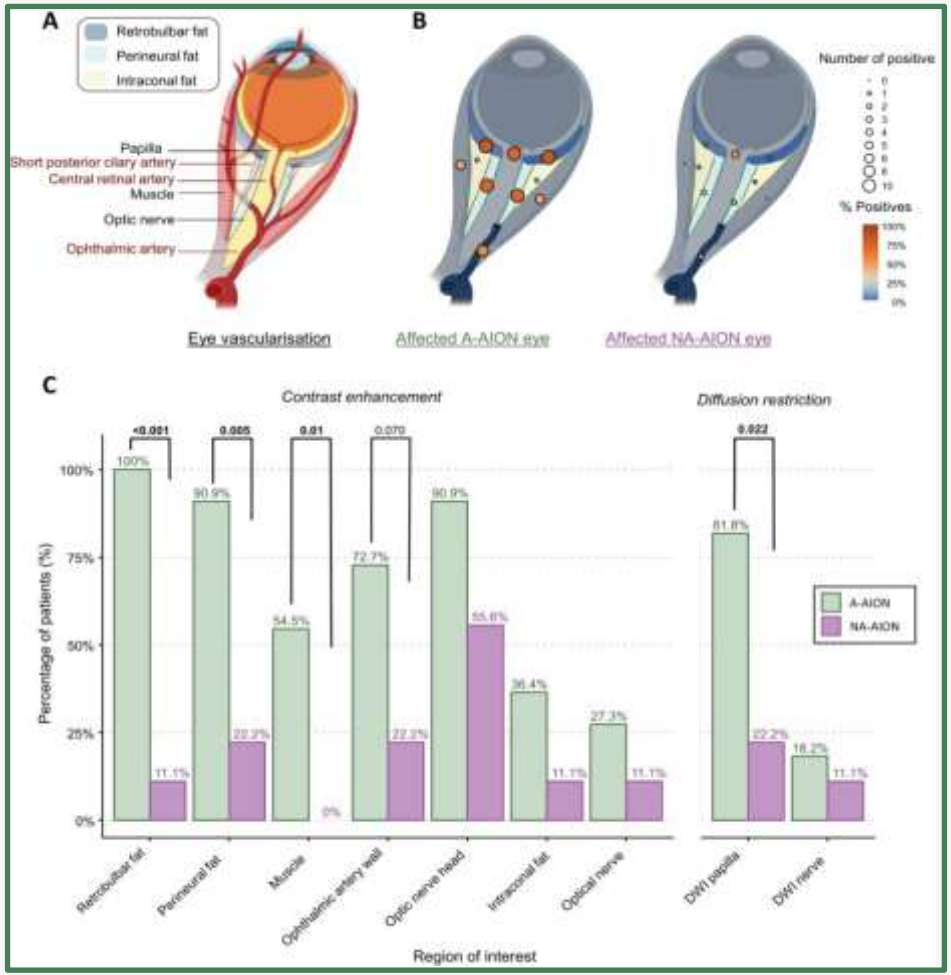
Future directions

Cohort Study of 9 A-AION and 9 NA-AION patients

Retro-orbital fat and optic nerve sheath enhancement was sensitive and relatively specific for A-AION vs NA-AION

Optic nerve head enhancement is not a specific feature

Orbital muscle enhancement was seen in 50% of A-AION patients and none with NA-AION



Brenac G, et al. RMD Open. 2026

SONIC GCA

Sonographic Assessment of the Optic Nerve Sheath in Giant Cell Arteritis

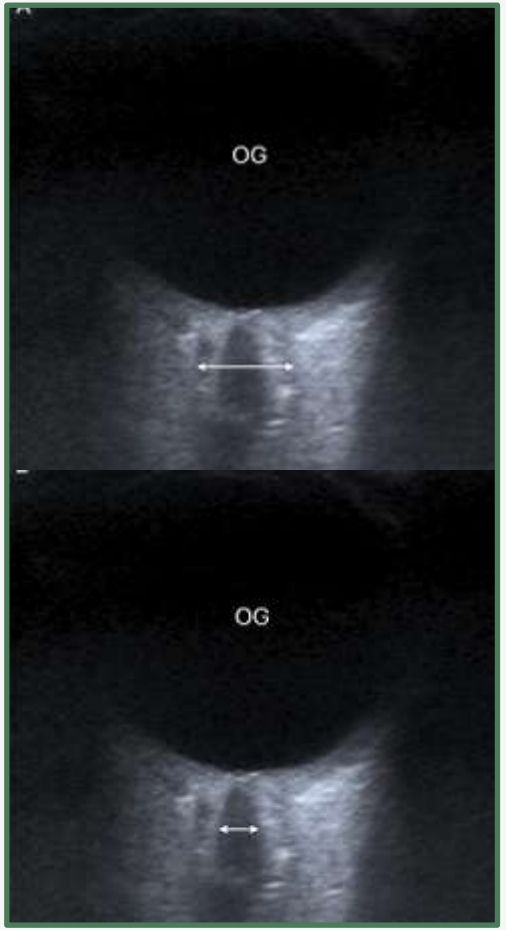
A Montréal based CanVasc network study currently recruiting patients

Primary Endpoint:

Evaluating the value of optic nerve sheath diameter on ultrasound for the diagnosis of GCA

Secondary Endpoint:

Evaluate the correlation to retinal changes with digital funduscopy



Makhzoum JP, et al. BMJ Open. 2025

Questions

References

1. Hu A, Beattie K, Bhavsar S, et al. A clinical scoring system for risk stratification of giant cell arteritis. Rheumatology. 2019;58(Suppl.2):kez058.030
2. 2. Ing et al, Clin Ophthalmol. 2019 Feb 21;13:421-430
3. 3. Melville AR, Donaldson K, Dale J, Ciechomska A. Validation of the Southend giant cell arteritis probability score in a Scottish single-centre fast-track pathway. Rheumatol Adv Pract. 2021 Dec 15;6(1):rkab102
4. 4. Chazal T, Clavel G, Leturcq T, Philibert M, Lecler A, Vignal-Clermont C. Characteristics and Prognosis of Binocular Diplopia in Patients With Giant Cell Arteritis. J Neuroophthalmol. 2024;44(1):87-91
5. 5. Dhivagaran, T., Butt, F.R., Nasri, D. et al. Prevalence of diplopia among giant cell arteritis patients: a systematic review and meta-analysis. Eye (2026)
6. 6. Haering M, Holbro A, Todorova MG, et al. Incidence and prognostic implications of diplopia in patients with giant cell arteritis. J Rheumatol. 2014;41(7):1562-1564
7. 7. Rhee RL, Rebello R, Tamhankar MA, et al. ACR Open Rheumatol. 2024
8. 8. Makhzoum JP, Mendel A, Touati A, Marcotte G, Barra L, Pagnoux C. Sonographic Assessment of the Optic Nerve Sheath in Giant Cell Arteritis (SONIC-GCA): protocol for a prospective, multicentre diagnostic test accuracy study. BMJ Open. 2025 Oct 29;15(10):e110078
9. Brenac G, Bernard A, Lemogne B, et al. Orbital MRI for diagnosing giant cell arteritis in cases of anterior ischaemic optic neuropathy. RMD Open. 2026;12(1):e006370. Published 2026 Feb 23. doi:10.1136/rmdopen-2025-006370
10. Houser A, Price L, Validation of the Giant Cell Arteritis Probability Score at a Tertiary Hospital, Journal of Vascular Surgery, 82e21
11. Timothy K Chong, George Nowell, Kah Cheong Tong, Safaa Abdulaal, Qasim Akram, P200 Re-validation of the use of Giant Cell Arteritis Probability Score (GCAPS) in daily practice to risk stratify GCA referrals: experience from a United Kingdom fast track clinic, Rheumatology, Volume 64, Issue Supplement_3, April 2025, keaf142.235, https://doi.org/10.1093/rheumatology/keaf142.235