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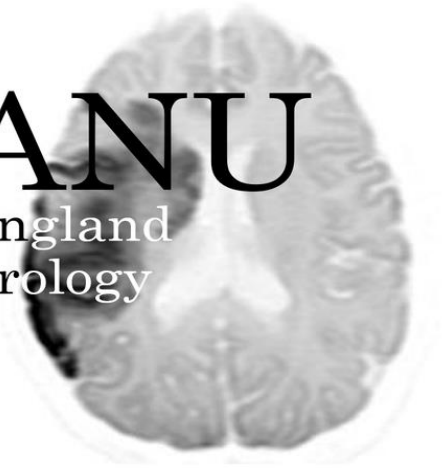

MS: Five useful things to know

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MANCHESTER 1824
The University of Manchester

Manchester Centre for Clinical Neurosciences

Salford Royal NHS
NHS Foundation Trust

Disclosures

- Nope

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Multiple sclerosis

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1. How not to miss optic neuritis
2. How not to miss transverse myelitis
3. Relapse or pseudorelapse
4. To LP or not to LP?
5. How not to miss an important MS mimic

Case study

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- 24 F, fit and well
- Came to ED with:
  - One week of pain behind the right eye
  - Vision blurred and patch of vision loss in RE upper outer field
- **Diagnosis?**

Optic neuritis

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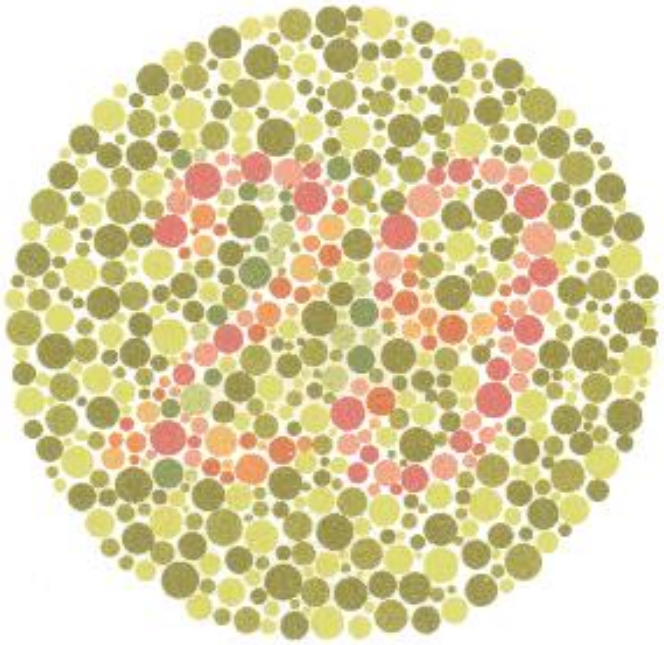
- Presenting symptom of MS in ~20%
- 90% painful
- **Pain on eye movement** is specific
- **Vision loss evolves over days**, <u>often relatively mild</u>
  - **Colour desaturation**
  - Scotoma
  - Reduced acuity
- Positive visual phenomena rare (c.f. migraine)

ON signs

- RAPD only if acuity is very poor
- Disc swelling in ~30%
- Visual assessment
  - Acuity
  - Fields
  - **Colour vision** (Ishihara)



MRI

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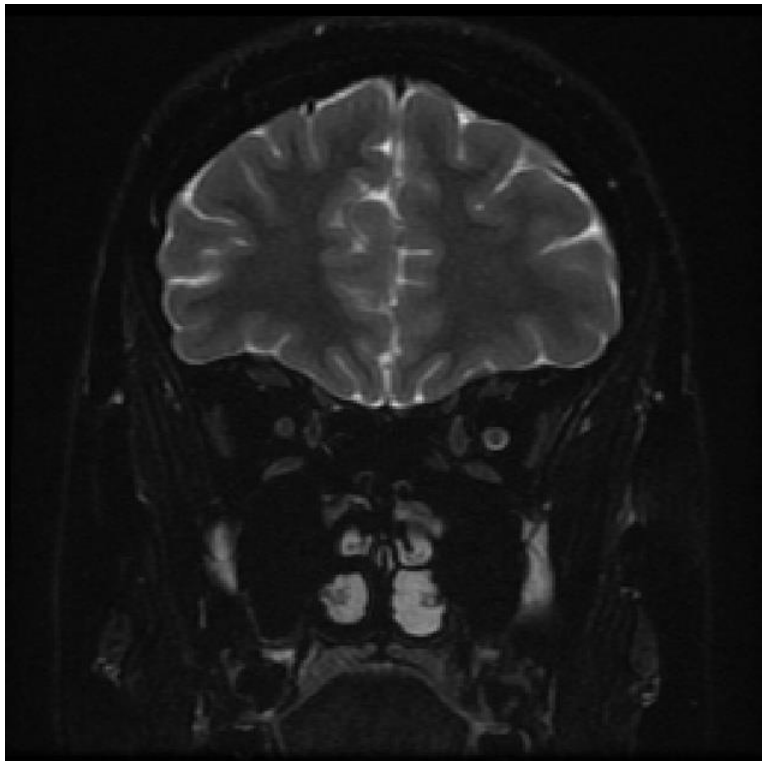

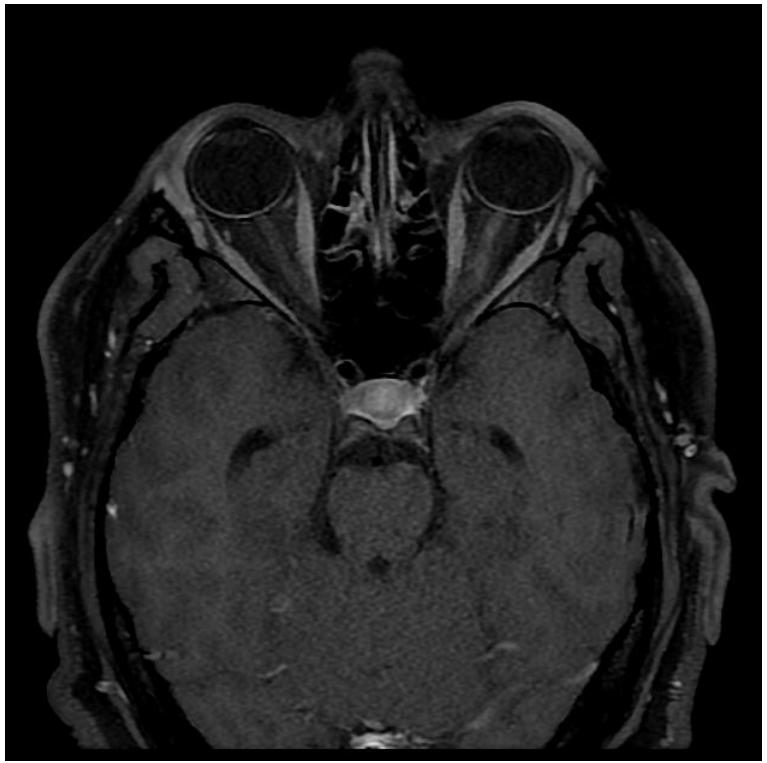

ON mimics

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- "Atypical ON" – severe loss of vision, bilateral
  - Check aquaporin-4 / MOG antibodies
  - Give steroids while you wait for results
- In the over 50s, think about AION / NAION
  - Hyperacute, severe or altitudinal VF loss, swollen disc
  - Ask about Sx of GCA, and check CRP & ESR
- Leber's hereditary optic neuropathy
  - Usually young men, painless, severe loss of central vision

Now you've spotted it…

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- Typical ON (likely MS-related)
  - Safety net
  - Soon MRI head & neurology referral
- Atypical ON (VA < 6/30, bilateral)
  - Antibodies
  - Steroids +/- PLEX
  - Urgent MRI head & neurology referral

Case study

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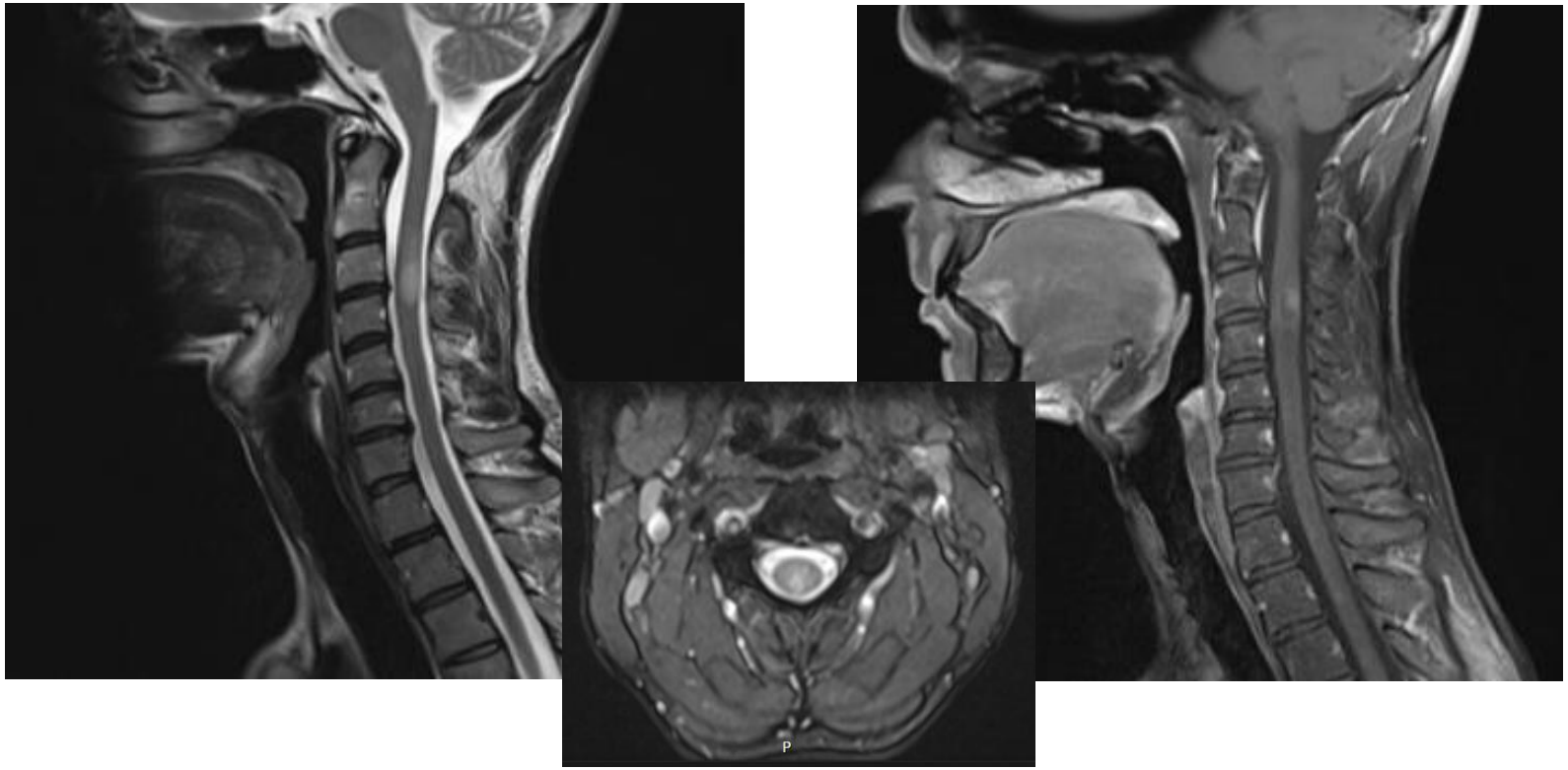
- 38 M, fit & well
- Came to ED with…
  - 5 days of tingling then numbness in R leg, then L leg then R flank, and both hands
  - Unbalanced, funny walk, not weak
- **Diagnosis?**

TM in MS



Clues in the Hx

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- Sensory Sx predominate
  - Trunk involvement, "MS hug"
  - Lhermitte's
  - Water temp? Shaving / pulling on sock?
- Unilateral symptoms that <u>progress</u>
- Ask about bladder, bowel, erections

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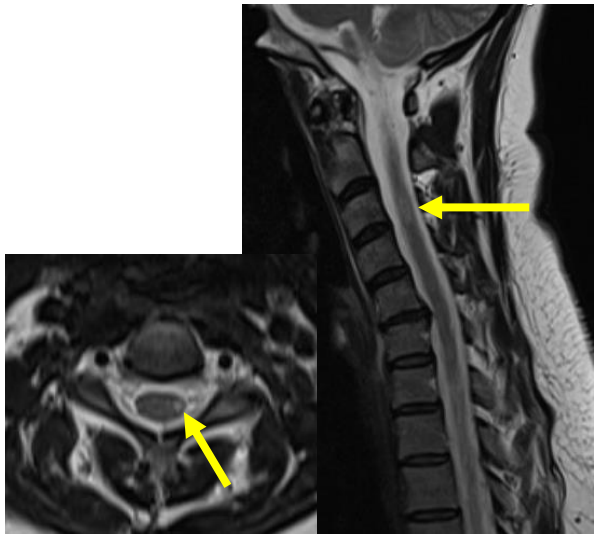
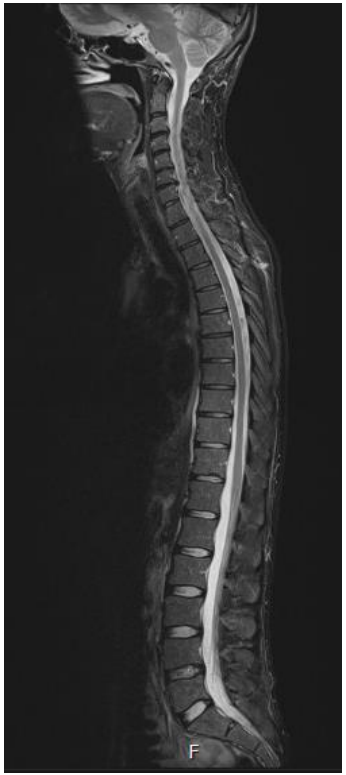
TM signs

- Variable
- UMN signs often absent acutely
- Beware "collapsing" weakness
- Proper sensory examination
  - Attention to dorsal columns
  - Look for a sensory level
  - Look for dissociation (Brown-Sequard)

What to image?

- Upper limb involvement
  → MRI C-spine
- Lower limb only
  → MRI C/T-spine
- Suspecting MS
  → Add MRI head





Case study

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- 57 M, MS since 2005
  - Relapse-free on Tecfidera for 12 years
  - Walks with a stick ~500m, self-catheterises
- Presents to ED with 3 days of…
  - Increased sensory symptoms in legs
  - New spasm of L foot
  - Fell over twice
- **Relapse or pseudorelapse?**

Think about age

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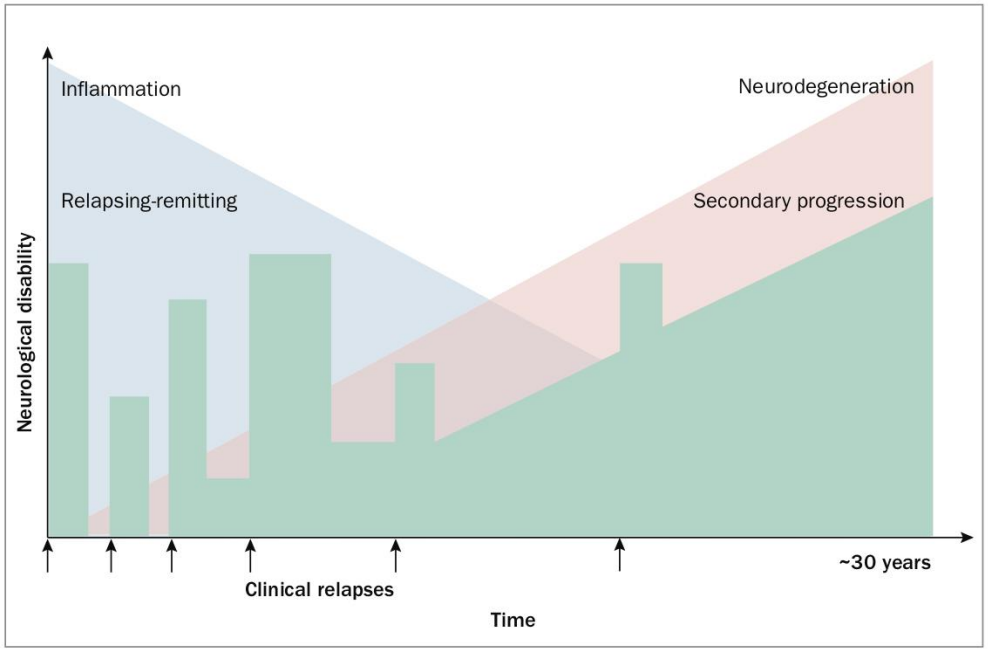
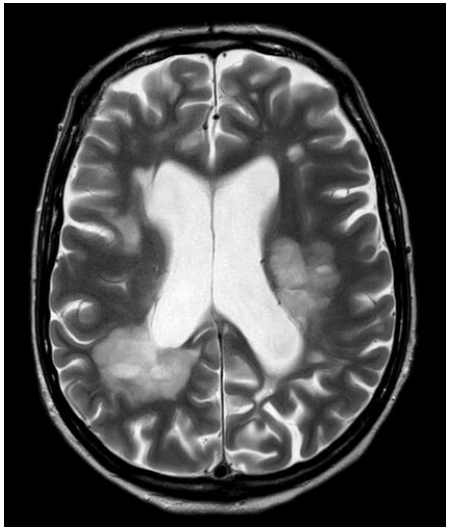
In general…



But…



Case study

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Assessing the patient

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- New symptom?
- New body part?

(look at old letters)

- What is time course?
  - Day-on-day worsening / spreading → relapse
  - Fluctuation → pseudorelapse
- Think about their treatment
- Think about causes of pseudorelapse

Threshold for MRI is low

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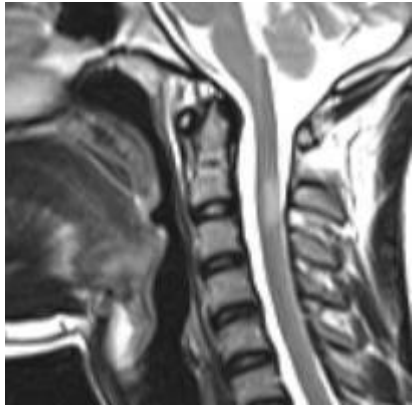
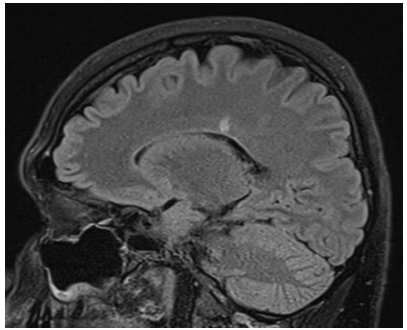
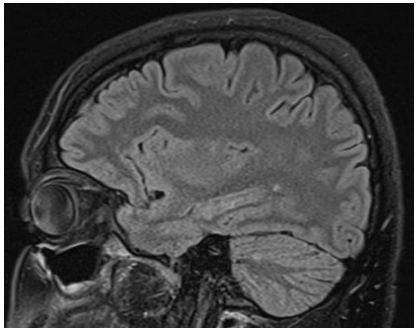
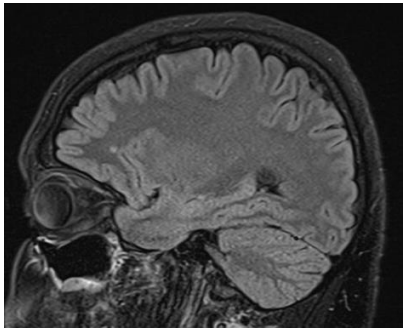
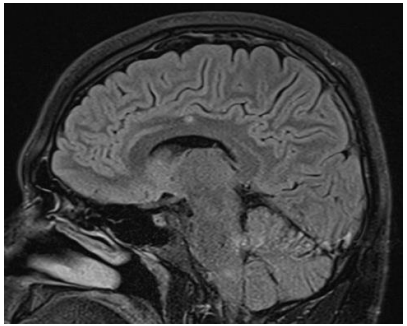
- We're looking for reasons to treat / escalate treatment!
- If on highly effective treatment, we need proof of relapse
- Avoid contrast if we have a good baseline scan for comparison
- Contrast might help if high lesion load / stakes are high

Case study



- 28 M, fit & well
- Acute cervical myelitis

- Do they need a lumbar puncture?

Indications for LP

1. When you are considering an alternative diagnosis

2. To diagnose MS earlier, after a single clinical attack ("dissemination in time")

CSF findings in MS

- WCC 0 – 50
- Protein normal or mildly elevated (<1g/L)
- Glucose normal
- Positive unmatched OCB in 95%

CSF

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	WCC < 5	WCC 5-50	WCC > 50
OCB negative (type 1)	**Small vessel disease** **Leukodystrophies** **Tumours**	**NMOSD / MOGAD** **Susac syndrome** **Sarcoidosis** **Lymphoma**	**NMOSD / MOGAD** **Sarcoidosis**
Matched OCB positive (type 4)	**CTD / vasculitis** MS NMOSD / MOGAD	**CTD / vasculitis** MS NMOSD / MOGAD Sarcoidosis	**Infection** CTD NMOSD / MOGAD Sarcoidosis
Unmatched OCB positive (type 2 / 3)	**MS** NMOSD / MOGAD	**MS** NMOSD / MOGAD Sarcoidosis	NMOSD / MOGAD Sarcoidosis

DIT = relapsing disease

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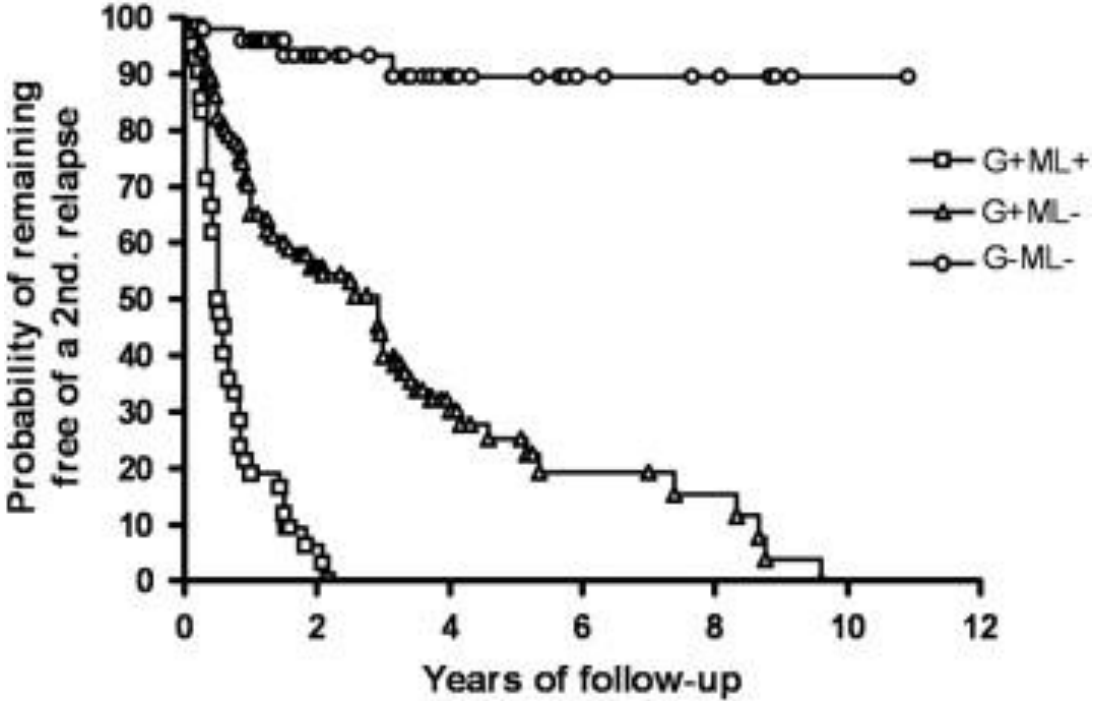
- 2 clinical attacks
- 1 clinical attack with one of:
  - New lesion on follow-up scan
  - Simultaneous presence of asymptomatic enhancing and non-enhancing lesions
  - Positive oligoclonal bands

(McDonald 2017 Criteria)

OCBs predict relapse



So…
Single attack
+ OCB

↓

Start disease-modifying therapy

Watch this space…

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- McDonald 2024 (out for consultation)
  - Updated imaging criteria
  - DIT is no longer needed?!
  - kFLC instead of oligoclonal bands

Case study

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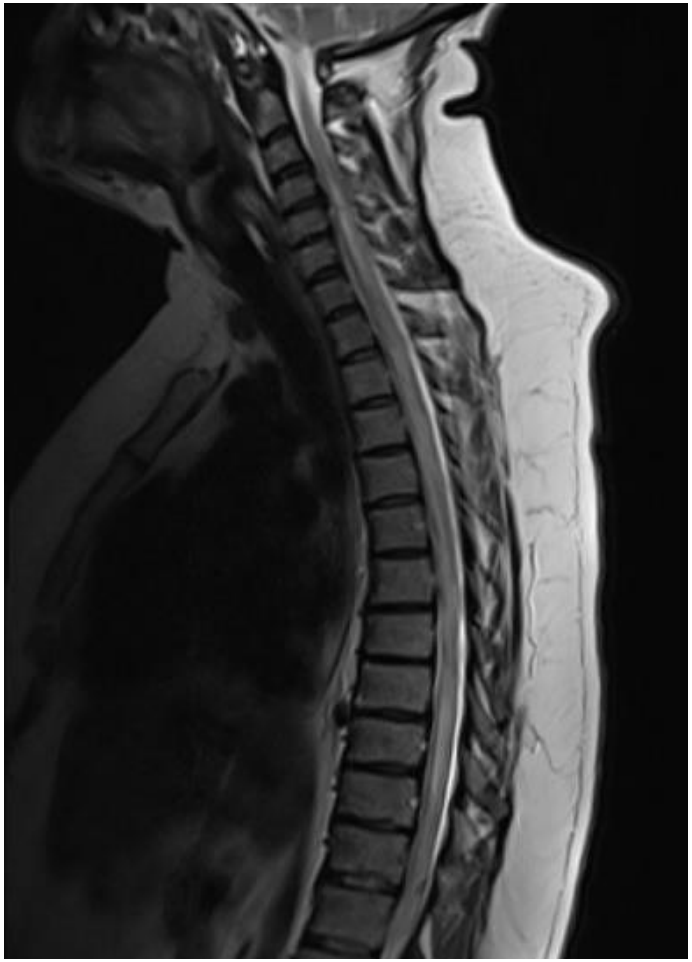
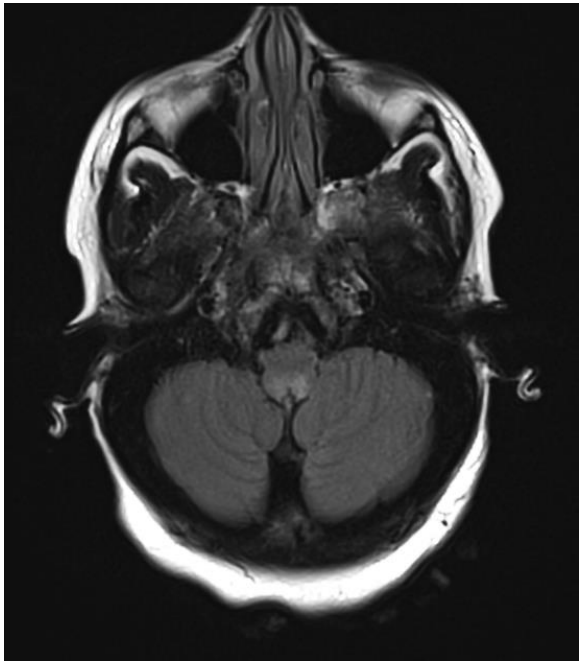
- 53yo black lady from Jamaica
  - Takes hydroxychloroquine for SLE
  - 2-year Hx of cyclical vomiting syndrome
- Presents to ED with
  - 7 days of paraesthesia, itching, imbalance
  - 2 days of weak R leg
  - Today, total paralysis of both legs, urinary retention





Neuromyelitis optica (NMOSD)

3 core clinical features:

- Longitudinally extensive myelitis
- Severe / bilateral optic neuritis
- Area postraema syndrome

- Serum antibodies to aquaporin-4
- Often associated with SLE, Sjogren's, and other autoimmune diseases

NMOSD

- Severe relapses, but no progression
- Needs aggressive relapse treatment
  - High dose IV steroids
  - Plasma exchange
- And lifelong immunosuppression
  - AZA / MMF / rituximab + prednisolone

The End

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1. How not to miss optic neuritis
2. How not to miss transverse myelitis
3. Relapse or pseudorelapse
4. To LP or not to LP? *
5. How not to miss NMOSD, and what to do about it

* May change soon