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Red Flags in Neurology – what to do next?

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Aims of the session:

- Simplify neurology
- Recognise it
- Clues in assessment
- Who to refer
- What to do while waiting
- Case discussions
- Q & A

Neurological red flags

- Neurological conditions
  - 1:10 GP consults
  - 10% emergency medical admissions (excl stroke)
  - Result in disability 1:50 UK population
  - Common (migraine prevalence 1:5 F, 1:15 M)
  - Rare (1200 Guillain-Barre pa incidence UK wide)

- NICE guidance due early 2018

Debunking neurology myths

- Neurology **is** interesting
- Neurology is not just for neurologists
- Most neurology is easy
- Some neurology is difficult
- The same diagnostic process applies to simple and difficult cases
- Most neurological disorders are treatable, and many curable

Neurological symptoms

- Helpful vs unhelpful
  - I have / feel
    - Blurred vision
    - Unsteadiness
    - Veering
    - Blackouts
    - Not quite right
- 3 Ss that may help
  - Symmetry
  - Stereotypy
  - Several

Onset mode is key

INSTANT

vascular, trauma, seizure (double vision!)

MINUTES-HOURS

infection, migraine

HOURS-DAYS

immune, inflammatory

DAYS-WEEKS

neoplasia

MONTHS (YEARS)

degenerative

The 1-minute exam

- Fundoscopy
- Eye movements
- Screw eyes tight closed, show teeth, stick out tongue
- Arms outstretched, touch nose-eyes closed, grip
- Rise from chair (arms folded), stand on heels / toes, rise from squat
- Stand with eyes closed
- Heel/toe walk

Headache

Jane Molloy

Headaches

- Case
  - 56 year old man
  - Sudden onset ‘worst headache ever’
  - PMH hypertension

What do you want to know?

Headache red flags

Subarachnoid haemorrhage (SAH)

- Worst headache ever
- Maximal at onset (<2 minutes)
- May be associated vomiting, photophobia, neck stiffness
- Increased index suspicion >50 years
- Coital cephalgia if 3 or more
- Recurrent thunderclap = migraine variant

Headache red flags

Raised Intracranial Pressure (ICP)

- Diurnal variation (early morning preponderance)
- Wake from sleep
- Associated nausea / vomiting
- Associated neurological symptoms incl. visual
- Worse with raised ICP manoeuvres
- Progression
- New headache type in headache-eur
- Daytime somnolence

Headache red flags

Associated infection symptoms – acute

- Mastoiditis - ?CVST (encephalopathy, seizures)
- Acute confusion / behaviour change - ?encephalitis

Pregnancy

- hormone sensitive - SOL, CVST

Temporal arteritis

- Never <50
- Tongue / jaw claudication
- Urgent ESR, start steroids, refer for assessment / biopsy (check local guidance)

Any associated **'hard signs'**

- Fundi, neck stiffness/meningism, tandem gait

Migraine

- **Common**
  - Generally episodic – well between (stereotyped) attacks
  - Systemic upset is key
  - Photo / phono / osmo / mechano-phobia
  - Onset in childhood (abdominal?) / teens
  - Family history
- Can be acephalgic
- Can recur after long quiescent period
- **Red flags**
  - Onset later life; transformed character

Migraine - treatment

- Lifestyle advice
  - Signposting – migrainetrust.org
- Acute treatments
- Preventive treatments
  - OTC – feverfew, coenzyme Q10, riboflavin, Mg…
  - Px – propranolol, amitriptyline, topiramate…
- Acupuncture
- Botox

Cluster headache

- Rare – not just ‘clustering’
- Agitation (vs dark & quiet)
- Associated autonomic features – conjunctival injection, tearing, rhinorrhoea, eyelid swelling
- ‘Suicide’ headache

- Short course prednisolone (1 week)
- Verapamil (ECG monitoring)

Questions?

Transient Loss of Consciousness

Jane Molloy

Transient Loss of Consciousness (TLoC)

‘I blacked out’

What do you want to know?

TLoC

- TIA is not a cause
- Cardiovascular commonest
- History
  - Subject / witness
  - ?reflex anoxic seizure – syncope/hypoxia*
  - Any cardiac symptoms?
  - Alcohol / drugs (legal highs; age irrespective)
  - Tongue biting / incontinence not diagnostic
  - Cerebrovascular disease in older patients
- Examination – B&C(p); 12-lead ECG; fundi?
  - 3Ps reassuring = Posture, Provocation, Prodrome

TLoC

- **Red flags (CVS)**
  - Abnormal ECG
  - Heart failure
  - TLoC during exertion
  - FH SCD <40 / cardiac inherited
  - Heart murmur
  - >65 TLoC without prodrome
- **Red flags (Neuro)**
  - Urgent – signs / headache (fundi)
  - Definite seizure - First fit clinic OP (expedite if recurrent)
- DO NOT start medication unless recurrent & account clear
- DO STOP from driving / advise inform DVLA

Questions?

Weakness

Martin Punter

Case history

- 65 yo male
- Progressive speech problems

- What do you need to know?

Weakness

- Weakness vs numbness vs heaviness
- Mode of onset:
  - Hyperacute
  - Acute (0-4 weeks)
  - Sub-acute (4-8 weeks)
  - Chronic (>8 weeks)

Weakness

- Pattern
  - Cranial nerve (esp bulbar)
  - Monoparesis
  - Hemiparesis
  - Paraparesis
  - Proximal vs distal

Weakness

- Mode of onset:
  - Hyperacute
  - Acute (0-4 weeks)
  - Sub-acute (4-8 weeks)
  - Chronic (>8 weeks)

Weakness

- Evolution
  - Constant/improving
  - Progressive
  - Variability
    - Exercise
    - Walking distance
    - Stairs
    - Temperature
  - Respiratory (SOBOE, SOBOLF)

Weakness

- Previous history:
  - Previous episodes
  - Family history
  - Drug history
  - Anaesthetics

Weakness

- Associated features
  - Pain (constant/tender/neuropathic/exertion/after exertion)
  - Rash
  - Urine
  - Diplopia
  - Wasting
  - Fasciculation

Weakness - examination

- Mentation/cognition
- Cranial nerves
  - Eye movements
  - Bulbar function
- Neck flexion/extension
- Wasting and fasciculation
- Tone (High/Normal/Low)
- Power (prox vs dist)
- Reflexes (Brisk/Normal/Reduced/Absent)
- Plantar response
- Sensation (intact?)
- Fatiguability

Weakness – red flags

- Weakness and pain
- Cranial nerve involvement
- Wasting and/or fasciculation
- Wasting and preserved/brisk reflexes
- Post infectious (esp diarrhoeal illness)

Case history - caution

- 72 year old male
- 2 weeks progressive proximal weakness
- Back pain +++++
- Thigh/shoulder pain
- Recent cold

- Pain on movement of limbs
- Absent reflexes

- Thoughts?

? GBS

- Treated
- But: CPK 12,000

Questions?

Altered Sensation

Martin Punter

Case history

- 41 yo male
- 4 weeks ago felt sensory loss in both feet ascending legs
- Pain radiating to thighs

- What do you need to know?

Sensory symptoms - type

- Loss of sensation – numbness
- Tingling – paraesthesia
- Tightness/band-like
- Watery/wet
- Pain on touch/sensitive – allodynia
- Pain
  - Burning
  - Shooting
  - Boring
  - Lancinating

Sensory symptoms - pattern

- Isolated sensory change
- Glove/stocking
- Dermatomal
- Peripheral nerve
- Patchy
- Sensory level
- Hemisensory

Sensory signs

- Sensory level
- Dissociated sensory loss
  - Vibration/JPS vs pain/temperature
- Peripheral nerve
  - Median/Ulnar/Radial
  - Peroneal
- Dermatomal
- Glove and stocking
- Patchy

Altered sensation – red flags

- Weakness
- Acute/Sub-acute progression
- Sensory level
- Rash (esp vasculitic)
- Previous ‘relapses’

Case history

- 41 yo male
- 4 weeks ago felt sensory loss in both feet ascending legs
- Pain radiating to thighs
- Evolved to weakness climbing stairs
- Difficulty opening jars and typing
- Similar episode lasting 8 weeks 2 years ago

Case history

- Examination
  - Normal cranial nerves
  - Mild, symmetrical UL weakness
  - More severe proximal LL weakness
  - Asymmetric UL reflexes
  - Absent LL reflexes
  - Plantars down
  - Patchy altered sensation
  - Romberg's positive
- Investigations:

Summary: Sub-acute sensory symptoms with LMN motor features and ? Relapsing course

Diagnosis: Chronic inflammatory demyelinating polyradiculoneuropathy

Questions?

Dizziness / Unsteadiness

Jane Molloy

Dizziness

- Non-specific – what do they mean?
- Is there true **vertigo**?
  - Abnormal sensation of movement – 'like on a boat' – dysequilibrium
  - **Can** see isolated vertigo in stroke (more commonly associated features which exclude labyrinthine) – head impulse test can also help
  - Stereotypy – Meniere's, BPPV, (acephalgic) migraine

Dizziness

- Is it more like **lightheadedness**?
  - Sensation when stand too quickly?
  - Feeling about to faint? (previous fainter?)
  - Any cardiac symptoms? (see TLoC)
  - VBI is not a thing

- Is it **unsteadiness**?
  - Proprioception (lights for nocturia/?hairwashing
    - B12 / immunoglobulins & SPE / copper studies
  - Extrapyramidal
  - **Multifactorial – +** eyes, ears, cerebellar…

Questions?

Transient Ischaemic Attack (TIA)

Jane Molloy

Transient Ischaemic Attack (TIA)

- LOC ***extremely*** rare
- Sudden onset
- Most <1hour
- ABCD2 out of favour
- See / complete investigation within 24h 1st contact (Dopplers, ECG)
- Aspirin 300mg stat – clopidogrel 75mg lifelong after UNLESS cardiac (AF/PAF) – Anticoagulate (HASBLED vs CHA2DS2-VASc)

Questions?

Tremor

Martin Punter

Tremor

- Fairly common
- Young and old
- Mostly benign
  - Additional features

Tremor patterns

- Rest vs action
- Posture/position
- Task specific
- Enhanced or reduced by distraction
- Systemic symptoms
- Changes in gait
- Changes in memory/mood
- Unilateral vs asymmetric vs bilateral
- Head tremor (yes-yes vs no-no)
- Orthostatic

Tremor examination

- Intention/cerebellar
- Positional
- Distractibility
- Entrainment
- Frequency
- Pill rolling

Non-tremor

- Chorea
- Athetosis
- Ballism
- Tic
- Myoclonus
- Poly-mini-myoclonus

Tremor – red flags

- Metabolic symptoms
  - Sweating/Palpitation/Weight loss
- Psychiatric features (esp young age)
  - Mood disorder
  - Unexplained anxiety/depression
- Gait change
  - Bradykinesia
  - Rigidity
  - Postural instability
- Rapid progression

Do I have Parkinson's Disease?

- Progressive
- Asymmetric
- Resting tremor
- Micrographia
- Slowing down
- Unstable/falling
- Anosmia or RBD
- Atypical features

- Essential/Dystonic tremor
  - Any age
  - Usually long history
  - Symmetrical (usually)
  - Slow progression
  - Family history
  - No rigidity/bradykinesia
  - Alcohol?

Questions?

Memory Problems

Martin Punter

Case history

- 55 yo female
- Severe work related stresses
- Previous family stresses
- Headaches
- Problems with memory
  - Sister agreed

- What do you need to know?

Memory Problems

- Very common
- Other problems
  - Anxiety/Depression
  - Head injury
- Absent mindedness?

- Transient
  - Minutes
  - Hours
  - Several hours/inaccessible

- Mode of onset
  - Slow progressive
  - Rapid (weeks – months)
  - Very rapid (days – weeks)

- Red flags
  - Change in daily function
    - Work problems
    - Relationship problems
    - Planning/function
      - Kitchen/cooking
      - Household bills
  - Disorientation
    - Lost easily
  - Personality change
  - Change in diet
  - Other features
    - Fluctuation/Variability
    - Hallucinations
    - Parkinsonism
    - Ataxia/myoclonus

Case history

- 55 yo female
- Difficulty expressing herself at work, less so at home
- Tests normal
- Reviewed as IP after 18 months (collapse)
- Clear aphasia
- Executive dysfunction

Thank you

Questions?

Resources accessed

- NICE guidance
- Neurological Diagnosis
- 30+ years combined OP experience
- (Personal opinion)