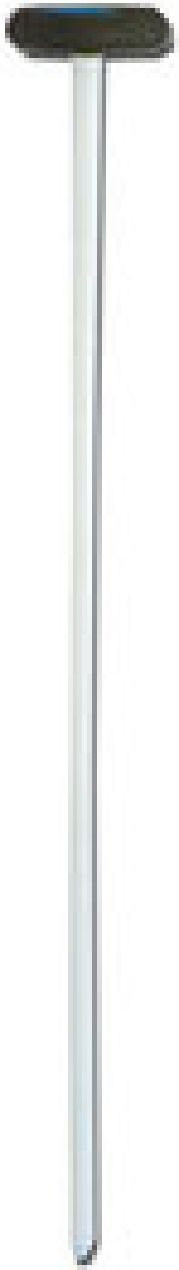
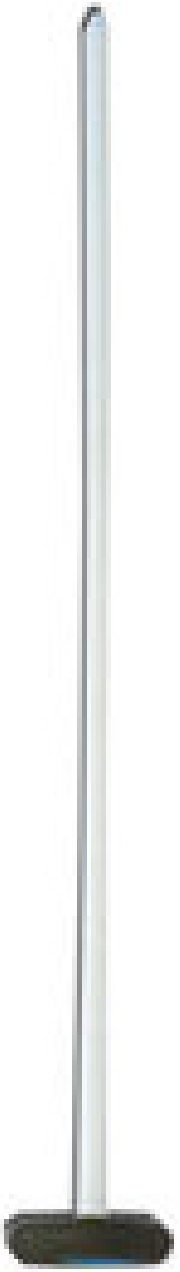
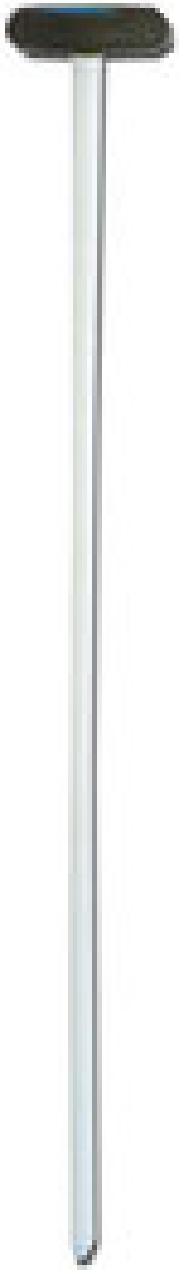


Neurotips in MAU

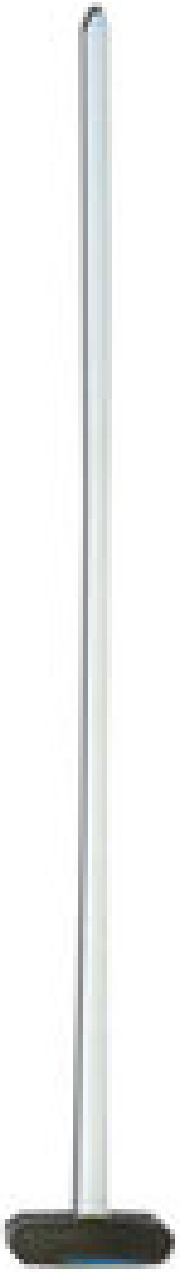
James Hrastelj

Neurology SpR, Wales





1. How to spot important diagnoses.
2. Initial management of important diagnoses.
3. Can I discharge the patient?
4. When should I call the Neurology on call registrar?



Headache

22yo student with gradual onset worst headache she's ever had.

Vomiting, photophobic.

Examination:
HR 110bpm, BP 100/50mmHg.
Temp 39^{o}C.

Headache: Bacterial meningitis

1. IV antibiotics e.g. ceftriaxone – local guidelines.

2. LP – don't need CT first unless focal neurological signs or GCS <15:
   - Always measure opening pressure.
   - Include viral PCR.

3. Add IV dexamethasone if any of:
   (1) Frankly purulent CSF.
   (2) CSF WCC > 1000 cells/µL.
   (3) Raised CSF WCC and CSF protein > 1g/L.
   (4) Bacteria on Gram stain.

Headache

58yo man with sudden onset worst headache he's ever had ~ 6 hours ago.

Vomiting, photophobic.

Examination:
BP 170/100mmHg.
Upgoing plantars.

Headache

Subarachnoid haemorrhage

Neurosurgeons ASAP.

Strict bed rest at 45^{o} and keep head facing forward.

IV fluids (>3L/24hrs) and catheter.

Nimodipine 60mg PO every 4 hours.

Analgesia e.g. co-codamol 30/500, oramorph.

Headache

LP at 12 hours for xanthochromia:

Positive -> Neurosurgeons.

Negative:
If ?CVST – CT venogram
If ?dissection – CT angiogram
If ?pituitary apoplexy - MRI

?primary thunderclap headache
?other primary headache

If unsure -> Neurology advice

Headache: Neurotips

"Worst headache I've ever head"

- If sudden onset, must rule out SAH.
- If unwell, must rule out meningitis and encephalitis.
- If features of raised ICP, must rule out SOL and CVST.

Seizures

19yo first year student with PMHx epilepsy; out with friends last night then girlfriend says he has had 2 seizures this morning.

Has 3 more seizures whilst on MAU and has not regained consciousness since last seizure.

Examination:
Snoring. Resp irregular ~10/min. SaO2 95% on 100% FiO2. HR 110bpm reg. BP 135/90mmHg.
No response to pain, not making any sounds, eyes closed.

Seizures: Status epilepticus

Continuous seizure activity for >5 mins or multiple seizures with no recovery in between.

Anaesthetics for airway support and ITU.

Early status (5-30mins): IV lorazepam 4mg +/- repeat after 10-20mins.

Established status (30-60mins): Phenytoin infusion 15-18mg/kg at 50mg/minute.

Refractory status (60mins +): ITU for general anaesthetic and EEG monitoring +/- ICP bolt.

Epileptic vs functional seizures

Before: FS - Environmental/emotional trigger

During: FS - Eyes closed and resist opening, movements are often erratic not rhythmic, long duration, side-to-side head movement, crying, some degree of responsiveness, significant injury rare, frontal tongue bite, flaccid paralysis with normal obs.

After: FS - Emotional.

General: FS - Evasive on questioning, reports some degree of awareness during attack, risk factors (other functional disorders, frequent attender, previous abuse/trauma).

Seizures/LOC: Neurotips

- If sudden with no warning and rapid recovery – cardiac until proven otherwise.
- Crucial role of medics = rule out causes of secondary seizures.
- All first seizures must be investigated – refer to neurology – if young, otherwise healthy and fully recovered can go home with f/u in first fit or rapid access neurology clinic.
- AEDs only started after second seizure unless patient is high risk.
- Patients must be told that it is illegal for them to drive and that they are legally obliged to inform DVLA.
- Beware intubating functional status epilepticus!

Acute weakness

Where?

Cranial nerves: head.
All four limbs: (head), neck or peripheral nerves.
Only legs: thoracic cord or below (NB parasagittal lesion).
Hemiparesis: brain, brainstem or neck.
Pyramidal: central nervous system.
Length-dependent: peripheral nerves.
Patchy: head, roots, plexus, mononeuritis multiplex.

Acute weakness

What?

Seconds-minutes: **vascular**, trauma, functional.

Hours-days: **inflammatory**, **infective**, **metabolic**, toxic, functional.

Days-weeks: **malignancy**, metabolic, toxic, functional.

Weeks-months: **malignancy**, metabolic, toxic, functional, **degenerative**.

Months-years: **degenerative**, inherited, functional.

Acute weakness

43yo woman with 4 days of ascending weakness in legs.

Examination:
DF, PF 2/5. KF+E 3/5. HF+E 3/5.
Ankle reflexes absent.
Sensory disturbance up to umbilicus.
Arms unaffected.

Where?
What?
Investigations?
Referral?

Acute weakness: transverse myelitis

Acute weakness

43yo woman with 4 days of ascending weakness in legs.

Examination:
DF, PF 1/5. KF+E 3/5. HF+E 5/5.
All reflexes absent.
No sensory disturbance.
4/5 weakness in hands.

Where?
What?
Investigations?
Referral?

Acute weakness: GBS

Spirometry.
LMWH.
Neurology referral ASAP for NCS/EMG and IVIg.

ITU discussion if any of:

1) Can't count to 20 without needing to stop to breathe.
2) Anxious and breathless with high RR.
3) FVC <20ml\kg ~1.5L for 70kg adult or 50% reduction since admission.
4) Bulbar weakness.

NB: SaO_2 or ABG do not change until patient is peri-arrest.

Acute weakness: Neurotips

- Pattern helps find where the lesion is.
- Time course helps identify the pathology.
- GBS is motor >>>>> sensory.
- MG is fatigable (https://www.youtube.com/watch?v=oopYaPjMMY).
- Never forget glucose!

Thrombolysis: Neurotips

- Resources:
  - **neurovascularmedicine.com/thrombolysis;**
  - **http://www.strokeadvancingmodules.org/labyrinth_thrombo/;**
  - **https://secure.trainingcampus.net/uas/modules/trees/windex.aspx?rx=nihss-english.trainingcampus.net; NIHSS certification.**
  - **ASTRACAT** course;
  - practical neurology review – Fernandes PM et al. **Stroke: mimics and chameleons;**
  - **hospital proforma**.

- Sudden onset symptoms <4.5 hrs ago – get accurate history in any way possible.
- Consider mimics.
- Main role of CT is to rule out contraindications to Tx.
- If BP is too high can be reduced with IV labetalol.
- Can thrombolyse from sleep if access to emergency MRI (mismatch between DWI and FLAIR).
- Consent:
  (1) Get family involved.
  (2) Every 100 patients treated -> 8 extra alive/minimal disability.
  (3) Risk of symptomatic ICH 5-6% (but not mortality).