

AMU Clinical Reasoning Session Key Learning Points (5.6.26)

Case 1 Summary

67-year-old gentleman with BG of type 3 spinocerebellar ataxia who had a baseline impaired mobility (wheelchair bound), chronic dysarthria & dysphagia with risk of aspirations and spasms due to the progressive degenerative nature of his neurological disorder. He had been commenced on baclofen for his spasms. He also had a relatively low BMI.

He presented to ED with confusion & agitation from pain. Collateral history from his wife & son revealed he had increasing pains for which his wife had accidentally given him baclofen almost every hour for the past few days (when he was on TDS dosing). His son also gave a cannaboid agent but this was unclear. The patient was given IV morphine in ED for his pain.

Thereafter, the patient went into respiratory depression with desaturations, RR 9, pinpoint pupils which all settled with IV naloxone hence clinically confirming opiate induced.

Subsequently, he was reviewed by Neurology on account of his progressive spinocerebellar ataxia and his suspected baclofen toxicity – they optimised a titration regime and it appears he was discharged thereafter with presumed social support as needed.

Heuristics (thinking tools) from this case

1. Problem Representation (root cause thinking)

- **Who** is the patient – demographics, epidemiology, risk factors
- **When** did this happen – pattern of illness inc. duration & temp
- **What** is the clinical syndrome – signs, symptoms, findings

*This approach helps to **structure a concise summary** with the key features from which we can formulate appropriate differentials and the steps in management. It also helps us to think about the **root cause of a patient's problem**.*

67-year-old gentleman with frailty (input CFS) due to his progressive type 3 spinocerebellar ataxia with chronic speech, swallow, mobility and spasm issues presented with pain (duration, location, type unclear from documentation) for which his wife accidentally overdosed him on baclofen (almost hourly when recommended TDS dosing).

From the summary, it becomes apparent that **the root cause of his problems is his progressive frailty from his neuro-degenerative disorder.**

We can also see the **disproportionate sign is his pain for which his wife accidentally overdosed him on baclofen** – this then is the root cause of his presentation with likely baclofen toxicity.

2. Disproportionate sign

Often, in clinical cases, there is **a sign or finding that is disproportionate to the rest of the context** – this can be the clue / key to the diagnosis & management.

In this case, getting to the **root of the patient's pain is key to his management** – is it ?pressure sores from his mobility issues, ?contractures from spasms & prolonged deconditioning, ?muscular / neuropathic pain from his disorder +/- co-existing OA / degenerative spine. These are the most likely causes of his pain in the clinical context of his progressive spinocerebellar ataxia. We should also rule out other causes of unrelated pain (such as from pneumonia, pancreatitis etc) through appropriate front door assessment.

3. Knee-jerk reflex / reaction

The provision of IV morphine in ED is an example of a knee jerk reaction. This is when **management is initiated without due thought to the clinical reasoning / context**. This could be due to over-reliance on protocol / pattern-based approach, speedy actions / exhaustion due to a busy & stressful overloaded work environment or emotional anxiety / panic given the patient's acute presentation.

We (including myself) are all guilty of a knee-jerk reaction at various stages in our career. We can all think of a time when we have prescribed analgesia, antibiotics and IV fluids without much thought. **Pain is a particularly difficult area given the high degree of subjectivity and the perceived acuity** which leads to overuse of IV morphine at the front door. What about antibiotics for isolated pyrexia and IV fluids for hypotension without a dedicated clinical assessment / volume status.

*The best way to stop knee jerk reactions is to always think in terms of the root cause of the patient's problem – hence the **importance of problem representation thinking!***

4. Pros & Cons approach

*Leading on from knee-jerk reactions, **always think of the pros & cons of every management decision in the clinical context.** In medicine, a lot of treatment (esp. medication) carries potential side effects / risks in addition to the benefits. Particularly in frail & elderly multi-morbid patients – **always be wary of polypharmacy** (just type polypharmacy in google to see the numerous articles!) In fact, our practice should be more reflective of de-prescribing and stopping meds in the geriatric population!*

*In this case, the cons of IV morphine outweigh any potential pros (esp. if the pain is related to his progressive neuro-degenerative disorder). Importantly, the clinical context of **suspected baclofen toxicity (a clinical diagnosis) which presents with confusion, drowsiness, weakness and has a high risk of CNS & respiratory depression is a major red flag for IV morphine** which would further heighten this risk. Additionally, this patient is also elderly and had a relatively low BMI – also adding to the risk of opiate toxicity. Hence, this case is a clear demonstration of thinking of the clinical context before prescribing.*

5. Acute vs Chronic pathology

The vast majority of 'acute' pathologies in patients whom are elderly, frail, multi-morbid or with chronic degenerative disorders is actually reflective of the progression of their 'chronic' pathologies. For example, a young & healthy patient with pneumonia – this would resolve with simple measures, whereas in an elderly & frail patient with the same pneumonia – this could cause sepsis and hospital admission with a high mortality rate hence reflective of their 'chronic' pathology.

*As such, the patient in this case had **an exacerbation of his chronic pathology with pains & spasms which are reflective of his progressive frailty from his spino-cerebellar ataxia.** This is proven by the fact that his inpatient management did not reveal any other acute causes for the pain and the Neurology team discharged him without any further significant work-up.*

*It is important that we shift our focus when reviewing patients from their **acute pathology to a pragmatic & holistic management of their chronic pathology.***

6. Trajectory planning over diagnostic obsession

*Although, diagnostic thinking is important, it is easy to become too diagnostically centred and lose track of the patient's trajectory – their pragmatic & holistic needs. This is often the reason why patients may be over-investigated despite their relative frailty & poor physiological reserve, and often why patients are admitted (esp. SDEC or GP) given the diagnostic uncertainty. As mentioned before, our primary job as **front door clinicians is not to prove diagnostic certainty but sufficiently rule out dangerous pathology or deterioration enough to discharge the patient with safety netting, and balance the risks of further management with pragmatism in the patient's best interests.** In other words, we do not need a definitive diagnostic explanation for every single symptom, sign and finding!*

Applied to this case, the bigger picture in the patient's trajectory is his progressive decline from his neuro-degenerative disorder. Subsequently, the patient and his wife's struggles to cope have led to unintentional baclofen overdose & toxicity. As such, our focus should be on compassionate & sensitive discussions with the patient & his family on overall prognosis (with Neurology guidance) and the holistic measures (both medically & socially) that can be instigated for optimising his symptom control and comfort care.

Structured Teaching from this case

Neuro-degenerative diseases are progressive & incurable disorders of the nervous system which leads to irreversible neurological dysfunction & deterioration. The rate of decline varies from slowly progressive (i.e. MS) to rapid (i.e. CJD).

Simple tips for when to suspect (especially in relatively younger patients):

- **Mixed neurological signs** (UMN & LMN or extra-pyramidal & motor or cerebellar) which suggests that there is multi-territory involvement (this would be less likely with strokes or tumours unless it were watershed infarcts or there were multiple metastases).

- **Subacute (but relatively rapid) history** of cognitive and / or neurological decline. For example, the 3 hallmark features of CJD are rapid dementia-like process, myoclonic jerks and mixed neurological signs (i.e. extrapyramidal & cerebellar & motor).
- **If clinical suspicions then refer to Neurology** (as clinical diagnosis supported by imaging).
- **Most important management is sensitive & compassionate discussions** with patient & family to help them come to terms with the diagnosis & prognosis with holistic care.

Red flag neurological signs (urgent Neurology review):

- **Impaired proprioception**, saddle paraesthesia / sensory level, bladder / bowel dysfunction – spinal cord compression
- **Speech, swallow, breathing impairments** without another clear explanation – bulbar pathology
- **Fasciculations (esp. with UMN & LMN signs)** – MND (also note fasciculations can often be a normal sign of fatigue & stress)
- **Ptosis (+/- complex ophthalmoplegia) & fatiguability** – Myasthenia gravis, cavernous & brain stem pathology
- **Ascending weakness with absent ankle reflexes** – GBS & variants

Also remember **that ipsilateral CN palsy + contralateral weakness / sensory disturbance = brainstem stroke (until proven otherwise).**

Breathing impairment with respiratory failure from neurological disorder can deteriorate rapidly hence always do FVC monitoring if suspected with involvement of ITU / high care for support.

Ceiling of Care (also explored in previous handout 22/5/26)

5 key points to consider in its decision-making:

1. Age & functional status (WHO performance status, CFS)
2. Co-morbidities burden (esp. organ dysfunction / failure)
3. Reversibility of the acute pathology (severity of pathology & reserve to fight)
4. Specific treatment & potential outcome (i.e. I&V, vasopressor, RRT, NIV)
5. Patient / NOK's known wishes

Always consider all 5 points in ceiling of care decisions. Importantly, remember that **DNAR and the provision of specific higher care treatment is a medical decision.** A common misconception & approach is allowing the patient or NOK to decide. You must always have decided yourself before the consultation. Be considerate but firm in your approach – with practice, you'll develop your own communication style which works for you.

If there is strong disagreement with the patient or NOK regarding DNAR then a second opinion can be sought. Difficult cases can also be referred to the hospital ethics committee for support & advice.

Case 2 Summary

41-year-old lady with BG of brittle asthma under Respiratory follow-up with previous ITU admission for life-threatening attacks presented to ED with an asthma attack. She was a consultant neonatologist and her partner was also a medical consultant.

She had a recent viral illness for which she received Tamiflu and had self-discharged a day prior to this presentation. She was seen in a confined space due to bed pressures in ED – making examination difficult. She appeared very quiet with her partner doing most of the talking.

Although, she came in with a severe asthma attack – this quite rapidly progressed to life-threatening with features of significant respiratory distress (single words), silent chest and oxygen desaturations. As such, the charge nurse and medical registrar promptly moved the patient to ED resus.

Instigating acute asthma management proved difficult as she refused steroids (on account of previous steroid induced psychosis) and did not allow ABGs. She was deemed to retain capacity at this point. Unfortunately, the patient further deteriorated hence was intubated by the ITU team and transferred to critical care for further management.

Heuristics (thinking tools) from this case

1. Problem Representation (PR)

- **Who** is the patient – demographics, epidemiology, risk factors
- **When** did this happen – pattern of illness inc. duration & temp
- **What** is the clinical syndrome – signs, symptoms, findings

41-year-old lady with BG of brittle asthma under Respiratory follow-up with previous ITU admissions presented to ED with an acute severe asthma attack which rapidly progressed to life-threatening – requiring intubation and ITU transfer.

2. Hallmark features in clinical context

*It is always important to monitor young patients presenting with acute severe asthma attacks as **deterioration into life threatening requiring intubation can be rapid**. Yes, the majority respond to treatment with steroids & nebulisers but the hallmark features of **brittle asthma, previous ITU admissions and frequent exacerbations (requiring hospitalisations and biologic therapy)** are all significant risk factors.*

3. Trajectory planning over diagnosis

This was a difficult case as the patient was refusing management up until the point of needing intubation. There were multiple compounding factors – triage to the wrong area limiting clinical assessment, questions regarding capacity / insight & patient's decision making, and pressure on clinicians as patient & NOK were both medical consultants.

This case highlights the importance of focusing on patient trajectory. It is evident that despite medical treatment – the patient was heading towards intubation & ITU transfer. It can thus be considered whether the patient had awareness of this and hence refused treatment as she knew it to be futile (she knew her trajectory). However, equally, we cannot assume this as she was also in a fragile mental state with previous mental health concerns including steroid induced psychosis.

Importantly, in acutely unwell patients – importance of early senior involvement (escalation to the relevant registrars & consultants) and clear & concise

documentation is essential. This allows for shared and also ultimate responsibility for optimal care and also medico-legal protection.

*In this case – **early involvement of the medical consultant & ITU team** helps facilitate discussions with the patient for treatment (consultant to consultant as patient is a consultant herself) and allows for trajectory planning – no delays to prompt intubation & ITU transfer. When there are questions regarding capacity & insight – **clear documentation of actions and a team-based approach is vital.***

*Importantly, even if **the patient or NOK refused treatment (capacity being uncertain or not practical to assess)** – we have a duty as clinicians to provide **immediate lifesaving interventions, acting in the patient's best interests – Common law** unless the patient had a specific advanced directive in place. Treatment / intervention must always be proportionate to the clinical context. Even if the patient's NOK had lasting power of attorney for health – they cannot decide against a lifesaving medical intervention in the patient's best interests.*

4. XYZ formula (investigations should change management)

*It is always important to ask yourself – **would my investigations change management? If I did 'X' which will show me 'Y' - what 'Z' would I do about it?** In a lot of elderly, frail & multi-morbid patients – we must consider pragmatically & holistically what / when not to investigate.*

In this case, repeated attempts to convince the patient for an ABG would likely not have changed management or the outcome. Of course, limiting investigations often requires a senior decision maker so I am not proposing that clinicians of all levels do this. However, the earlier you give thought to this approach the better clinician you will become – centred on optimising individual patient care.

Structured Teaching from this case

Mental Capacity vs Mental Health (in the UK)

Mental Capacity Act

Remember when assessing mental capacity:

- Never presume the patient does not have capacity
- Support the patient in assessing capacity
- Unwise decision does not equate to no capacity
- Mental capacity can fluctuate (so assess regularly)

If the patient is deemed not to have capacity:

- Passive approach (not requiring active chemical or physical restraints & compliant with management) = **treat under MCA in best interests**
- Active approach (patient at risk requiring restraints) = **treat under MCA & DOLS**

Common law provides the legal basis to treat a patient without consent or assessment of their capacity in an emergency situation when immediate action is necessary to save life or prevent serious deterioration (and it is not practicable to obtain valid consent).

Mental Health Act

The key question – **is the patient at risk to self or others?**

If the patient is at high risk, then must be detained & treated under section of the Mental Health Act (i.e. a patient with paranoid schizophrenia who is hearing voices telling him to hurt others). The main sectioning in hospital is as follows:

Section 5(2) – provides authority for a medical doctor (non-psychiatrist) to **detain a patient for 72 hours during which time an urgent Psychiatry assessment must occur** (think of it as a cry for urgent help to Psychiatry as you are worried that the risks are high).

Section 2 – provides authority for the **Psychiatry team to continue to detain the patient for up to 28 days** to continue their mental health management – instigated by a Psychiatrist.

Section 3 – provides authority for the Psychiatry team to continue to **detain the patient for up to 6 months** to continue their mental health management.

The Mental Health Act does not automatically authorise treatment for unrelated physical illnesses unless the physical intervention is part of treating the mental health disorder itself such as medical treatment (i.e. IV fluids & NG feeding) for

dehydration or malnutrition resulting directly from severe mental health illness (i.e. severe psychotic depression refusing all intake).

These situations can be legally complex and can require an MDT approach with advice from the hospital's Mental Health Act team and legal team where necessary.

Important factors:

1. **Root cause of the patient's presentation – am I treating their physical or mental health:**
 - MCA = medical / physical
 - MHA = mental health
2. **Communication is key** – try to solve the problem calmly without escalating. Involve as much of the staff as possible with an MDT approach. Explore the patient's demands or reasons for refusing treatment (often it can be as simple as wanting to go out for a cigarette with a medical escort).
3. **Least restrictive care** – chemical & physical restraints should be a last resort and not the first point of action.
4. **Documentation** – clear & concise for handovers and medico-legal purposes.
5. **Involve the NOK (unless safeguarding issues)** – often very helpful as a collateral to guide patient's care.