Case Based Learning Series

"Student Led Adult Learning"

CPC
CASE-BASED LEARNING SERIES
"Mastering clinical Reasoning in Emergency Medicine"

Seed
GLOBAL HEALTH

Clinical Pathologic Case (CPC)

Emergency Medicine Case Based Series

THEME:

Approach to the De-compensating Trauma Patient

Date: Fri 28th November 2025
Time: 7:00pm - 8:00pm (EAT)

Expert

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Presenter

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Pre Hospital Presenter

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SCAN QR CODE TO REGISTER

FUMSA

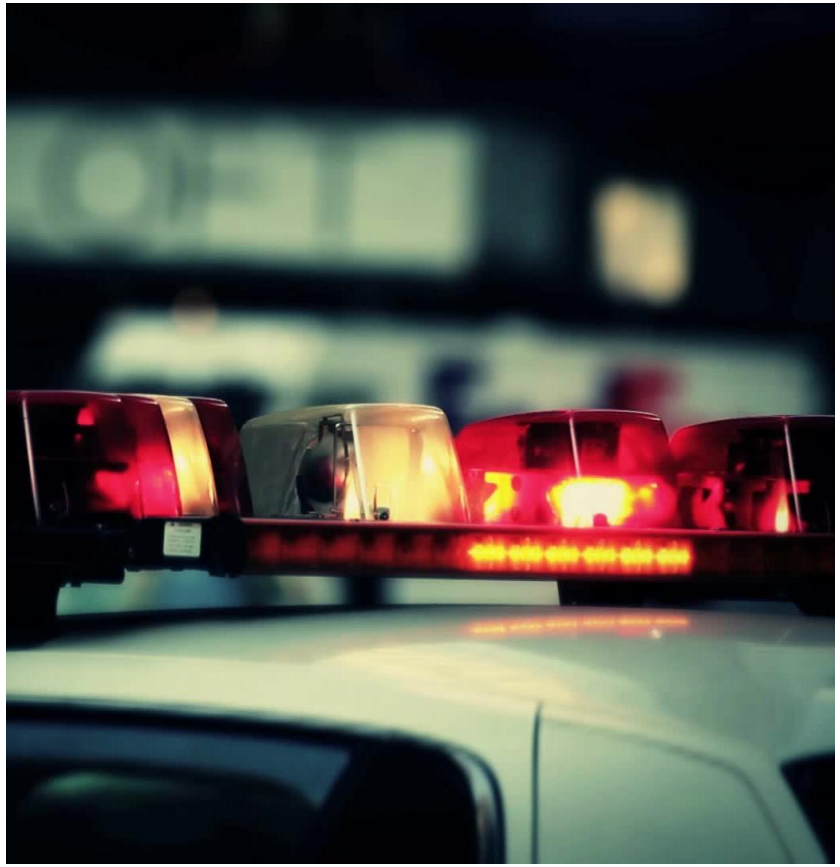
SCOME
Medical Education

Disclaimer.

- The information and content being shared below is mainly based on live experience and aimed at enhancing learning on emergency care.

Presenting Complaint

- N.R 48YR/M a referral from a peripheral clinic was received at A/E after reportedly having fallen from a height and thereafter developed severe back pain and inability to walk.



Poll 1

If you are an EMT called to pick up this patient, what must you carry?

Pre- hospital course

- Staff: 2EMTs, 1 Driver.
- Patient: 1
- Requirements: Communication devices, C-collar, Spine board and accessories, Diagnostics (stethoscope, bp cuff, pulse oximeter), Large bore cannulas, PCM 100mls(pain killer), Non-rebreather mask, clean gauze, blanket
- Type of ambulance- type B (Basic life support)
- ISBAR tool

Pre-hospital course.

- **Identification**-I am K.A an EMT handing over a 48/M with h/o a fall from a height
- **Situation: P**resented with a sharp back pain (10/10) and inability to walk, alert and able to coherent
- **Background**: Referral from a peripheral clinic after falling 40m off a tree, landing on his right & back, resulting in inability to move with intact sensation
- **Assessment:** RR=24 bpm, warm peripheries, PR= 110 bpm, BP= 129/76 mmHg, T=35.5°C. Administered O_2 15L/min by NRM, IV PCM, inserted C-collar, spine board, and covered in warm blanket
- **Recommendations:** Urgent orthopaediatric, neurosurgery review, Spine CT/MRI, labs, keep C-collar, spine board on

Primary Survey

- **Airway:** This was patent as he was able to speak**.**
- **Breathing: Reduced chest mov't, with accessory** muscle involvement, RR=24 bpm, SPO_2, tender, dull bibasilar percussion note with reduced air entry and Lt intrascapular crackles.
- **Circulation:** Warm peripheries, BP= 129/76mmHg and heart rate of 110bpm. All peripheral pulses are present. Heart sounds 1 and 2 were present with no added sounds
- **Disability:** GCS= 15/15, PEARL, not well oriented in time & place. He had lower limb weakness associated with the inability to walk at presentation
- **Exposure:** T= 36.5°C, bruised on right side of the body, no concealed injuries or obvious bleeding

SAMPLE History

- **Signs & Symptoms:** Painful back and inability to walk
- **Allergies:** Not any known food or drug
- **Medications:** No medications before admission
- **PMH:** No known chronic illness, seronegative
- **Last Meal:** Had a meal 7 hours before admission
- **Events:** Fall from a tree while cutting branches at work

Audience

- Any additional information?

Expert opinion?

Any additional thoughts at this point?

Any additional info you would want to get?

ED Intervention

Airway: Inserted C-collar, elevated head of bed

Breathing: O_2 therapy 15L/min, SPO_2 improved to 95%

Circulation: IV NS 1L bolus, PCM 1g, inserted Urinary catheter, blood for grouping and cross-matching, monitor fluid balance

Disability: GCS=14/15, immobilized using spine board, was received with a wheelchair at the emergency

Exposure: Kept warm by covering with a blanket

Secondary survey

Head and Neck: No wounds or bleeding from the head, his neck was soft and non-tender.

Chest: Asymmetrical, bruises to the right chest wall, tenderness, with reduced air entry & occasional bibasal crackles

Abdomen: Normal fullness, RUQ tenderness, normal tympany & bowel sounds

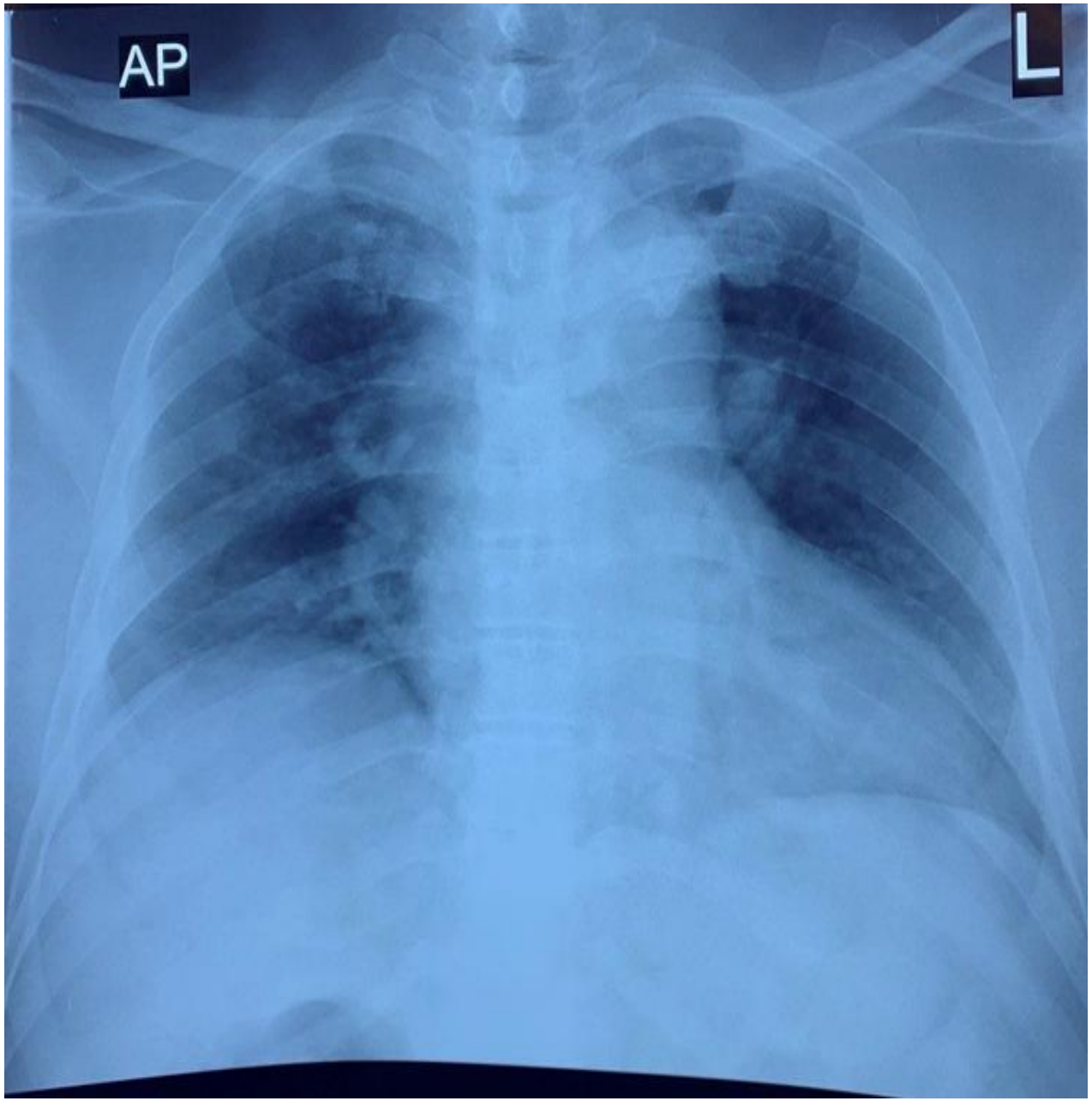
Extremities: Warm, deformities, & obvious dislocation

Pelvis: Stable with no associated limb length discrepancies

Skin: Multiple bruises, more on the right side and a few wounds on the shoulder and elbow

Investigations

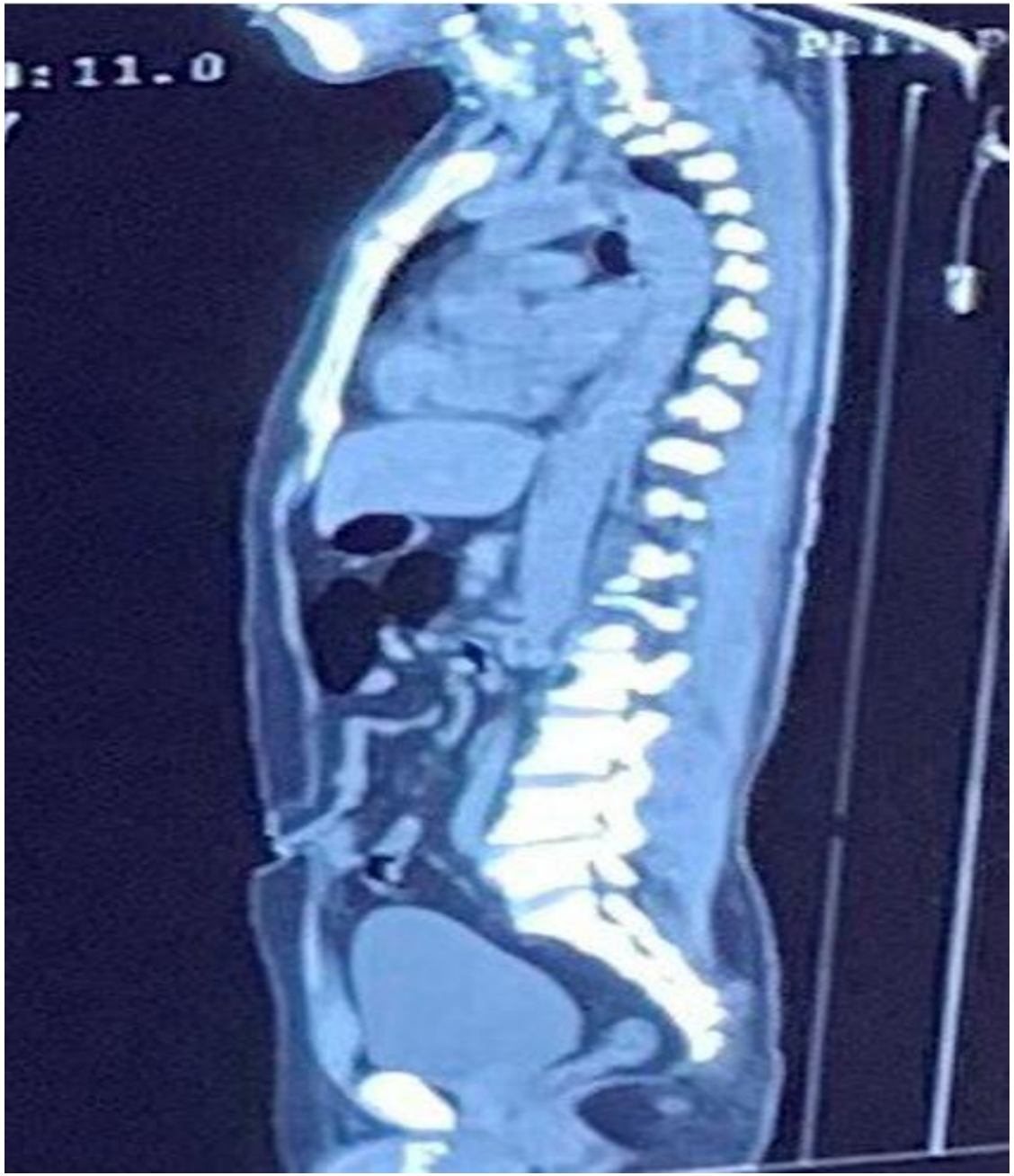
Investigations	Results
CBC with differentials	WBC -7.71 x 10^9/L, (**5.00- 11.60**), Neu - 8.41×10^9/L, Lymp. 0.96×10^9/L, (1.30 - 4.00), EOS-0.03×10^9/L, Hb-15.5g/dL (**11.5- 15.1**), PLT: 1027× 10^9/L (**156 - 342**), 350×10^9/L
Blood group	**O+**
RFTs	- Creatinine - 3.33 (**0.58-1.12**)**mg/dl**, Urea - 62 mg/dl, (**15- 43)mg /dl,** K+ - 3.83 mEq/L, Na+ -137 mg/Dl, Cl-98.9 mg/L, HCO3-21.9 mg/L



- The chest X-ray above shows bilateral lung contusions and pleural effusions marked by the blunted costophrenic angles.

Poll 2

Name and locate the injury in this CT scan?



The CT shows?

Expert opinion

What are your differentials at this point

What is your management plan?

Differentials	Supportive findings	Contradicting findings
Traumatic spine injury	- History of a fall from a tree 40m - severe back pain - sudden onset of inability to walk	None
Blunt chest trauma (Lung contussion)	-Chest pain - Difficulty in breathing.	None
Soft tissue injury	- Multiple wounds - Generalized body pain.	None

Poll 3

What are the mainstay conservative management Priorities for this patient?

ED course

- Immobilize the spine using a C-collar and spine board
- 15L of O_2 via NRM with elevation of the head of bed
- Oral morphine 10mls 4hrly for 2 days, I.V PCM 1g 8hrly, Fentanyl patch 254mcg X3/7
- An insert urinary catheter for CBD due to suspected bladder dysfunction
- He was later scheduled for a neuro/orthopaedic surgical review

Days	Complaints	Findings	Plan/Treatment
DAY 1	Had a fair night with C/o chest pain and mild DIB & a productive cough with abdominal pain more marked on the right flank.	•Vitals: T- 36.5°C, PR- 85 bpm, B.P- 125/78mmHg, SpO2- 96% on •O/E – Reduced air entry on the right lung field with occasional crackles, & abdominal tenderness on the right flank.	• Continued O2 therapy, fentanyl patch 254mcg, I.V. PCM 1g 6hrly for a week, I.V. Bacquire 500mg tds X1/52, I.V Rabeprazole 20mg o.d X1/52, Oral morphine 10mg 4hrly for 2 weeks
DAY 2	**Ortho r/v**; Currently has pain in the back, chest and abdomen	• Significant findings were in the MSSK with an ASIA grade D, tenderness on the right lower region of the ribcage, & equal bilateral chest expansion. • Noted impression of spine # of T7-10 with lower endplate of T10 involved.	• Analgesia • Do abdominal Ultrasound. • Continue treatment with patient chart.

DAY	COMPLAINTS	FINDINGS	PLAN/TREATMENT
DAY 3	**SPINE SURGERY R/V**; Concern was suspected vertebral fractures. Patient c/o back pain rated at 5/10 compared to 10/10 at presentation, no motor/ sensory deficits at fall or after, Control of bowel and bladder.	**O/E- a**ble to sit in bed and stand with minimal pain, mild- Mod tenderness with mid thoracic and mid lumbar tenderness in lumbar region of abdomen. **Neurologically**; ASIA A **Noted Spine CT;** Nothing dramatic but not best quality. **Impression**; Post-traumatic mechanical back pain with stable fractures, and muscle contusion.	• Allow ambulation as pain allows. • Pain control (maintain current) • Surgical r/v for lumbar abdominal regional pain. • Erect/ Standing Thoracic and Lumbar X-ray when pain persists.

Expert

Pearls and pitfalls

Case Key Highlights

We received N.R, a 48/M, h/o a fall from a height with associated inability to walk & severe back pain and provisional diagnosis of spinal injury

This is also a multiply-injured patient requiring a full trauma workup through the ATLS framework

Key areas: Circulation, Breathing and disability

Conditions: Spinal shock, cardiac tamponade and lung contusion/laceration could have dramatic and fatal events in these areas & so we should act quickly to prevent these.

Take Home

Spinal shock is a temporary physiological state following acute spinal cord injury in trauma characterised by sudden loss of all spinal reflexes, motor, sensory and autonomic function below the injury level

This can last from hours to weeks with phases progressing from areflexia/hyporeflexia to reflex return and eventual hypereflexia/spasticity

Take Home

Presentation is characterised by key features as stated below;

1. Flaccid paralysis, complete loss of sensation, absent reflexes below the injury, often with autonomic instability like hypotension, bradycardia, and hypothermia, loss of bowel & bladder function, respiratory compromise and high cervical etc

2. Immediate management; prioritizes ABC's, spinal immobilisation and high-dose methylprednisolone. Support vital functions with vasopressors, mechanical ventilation if hypoventilation. Bladder catheterization and ICU monitoring with a multi-disciplinary team is vital till reflexes return

EDUCATION:

- Highlights
- QR code with resources
- **REFERENCES**;
- https://stanfordhealthcare.org/medical-conditions/back-neck-and-spine/spinal-cord-injury/symptoms.html?utm_source=perplexity
- https://www.mayoclinic.org/diseases-conditions/spinal-cord-injury/symptoms-causes/syc-20377890?utm_source=perplexity