

OSCE
10/2010

Case 1

- M/72
- PMH: HP, PU with OGD in 2009
- Witnessed fell forward from 2-3 steps of stairs
- Noted apnoea, required manual bagging by paramedic
- Arrived AED R room direct
 - BP= 118/64 P= 67 in respiratory arrest
 - GCS= 3 Pupils: R=4 < L=6 (cataracts)
 - Left frontal abrasion

Case 1



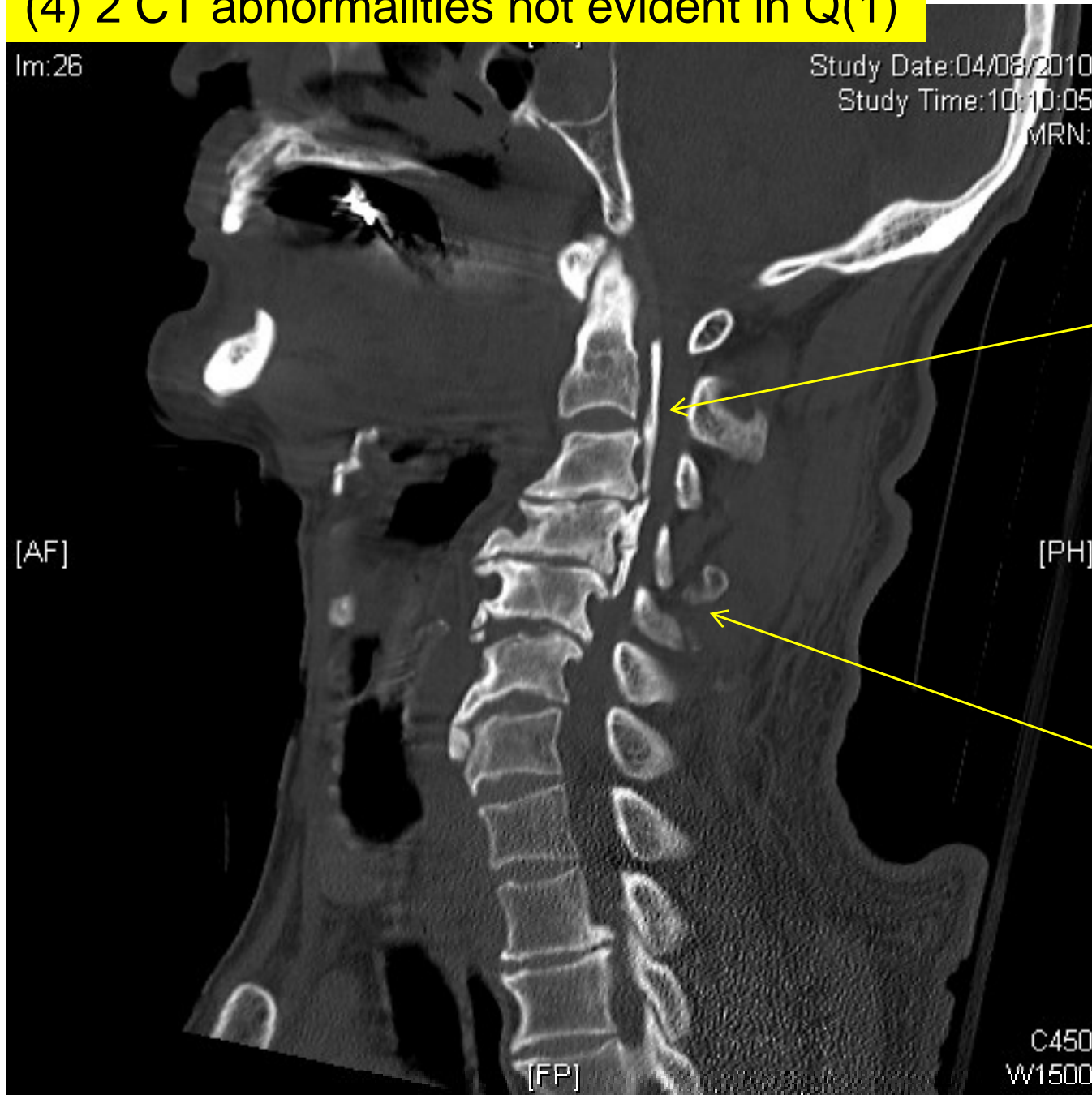
Case 1

- 1. Name 2 abnormalities shown in the x-ray.
 - Cervical spondylosis
(ant spurs, decreased disc spaces...)
 - Ossification of the posterior longitudinal ligament
- 2. Why did the patient develop apnoea? What precaution should be taken during intubation?
 - (a) Brainstem / High cervical spinal cord lesion
(respiratory centre) ,
(b) C3-5 phrenic nerve paralysis
 - Manual in-line stabilization of C-spine & minimal C-spine movement during intubation

Case 1

- Then BP 80/56 P 79 FAST –ve
- 3. What is the cause for the shock?
 - spinal shock or neurogenic shock

(4) 2 CT abnormalities not evident in Q(1)



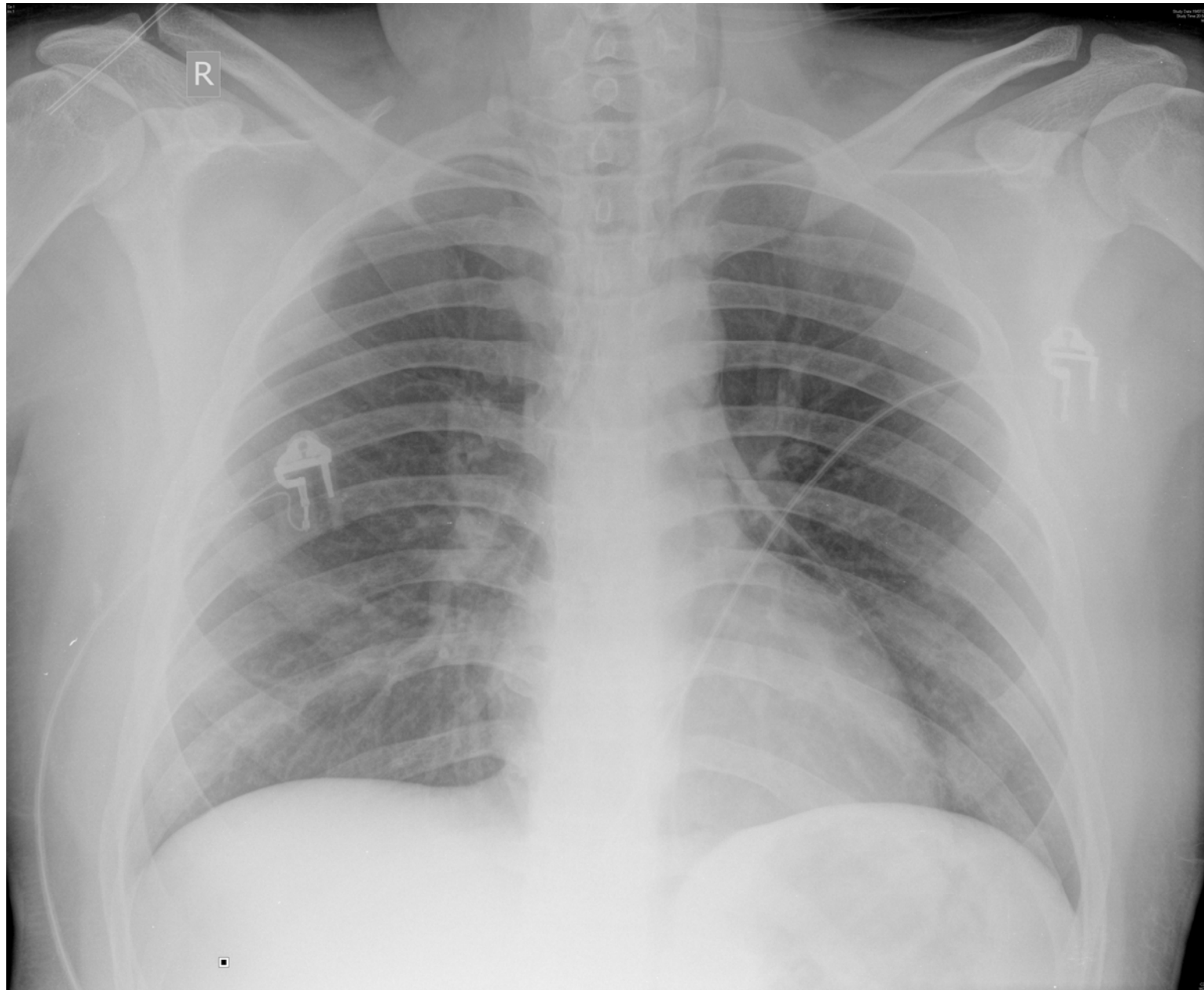
(a) Prominent ossification of posterior longitudinal ligament, posterior displacement & compressing onto the cervical cord

(b) # spinal process C4-5

Case 2

- M/16 Good past health
- c/o retrosternal chest discomfort for 1 day
- Dull in nature, on and off, no radiation
- Aggregated by respiration
- Increasing SOB for few hours
- BP 157/76 P 124/min
- SpO2 94% room air RR 22/min

CXR



Case 2

- 1. What is your diagnosis?
 - pneumomediastinum

Case 2

- 2. Name any 2 other radiological signs that may be present on the CXR for this condition.
 - Subcutaneous emphysema
 - Pneumothorax
 - Thymic sail sign
 - Tubular artery sign
 - Double bronchial wall sign
 - Continuous diaphragm sign
 - “Ring around the artery” sign on lateral CXR (ring of air around R pulmonary artery)

Case 2

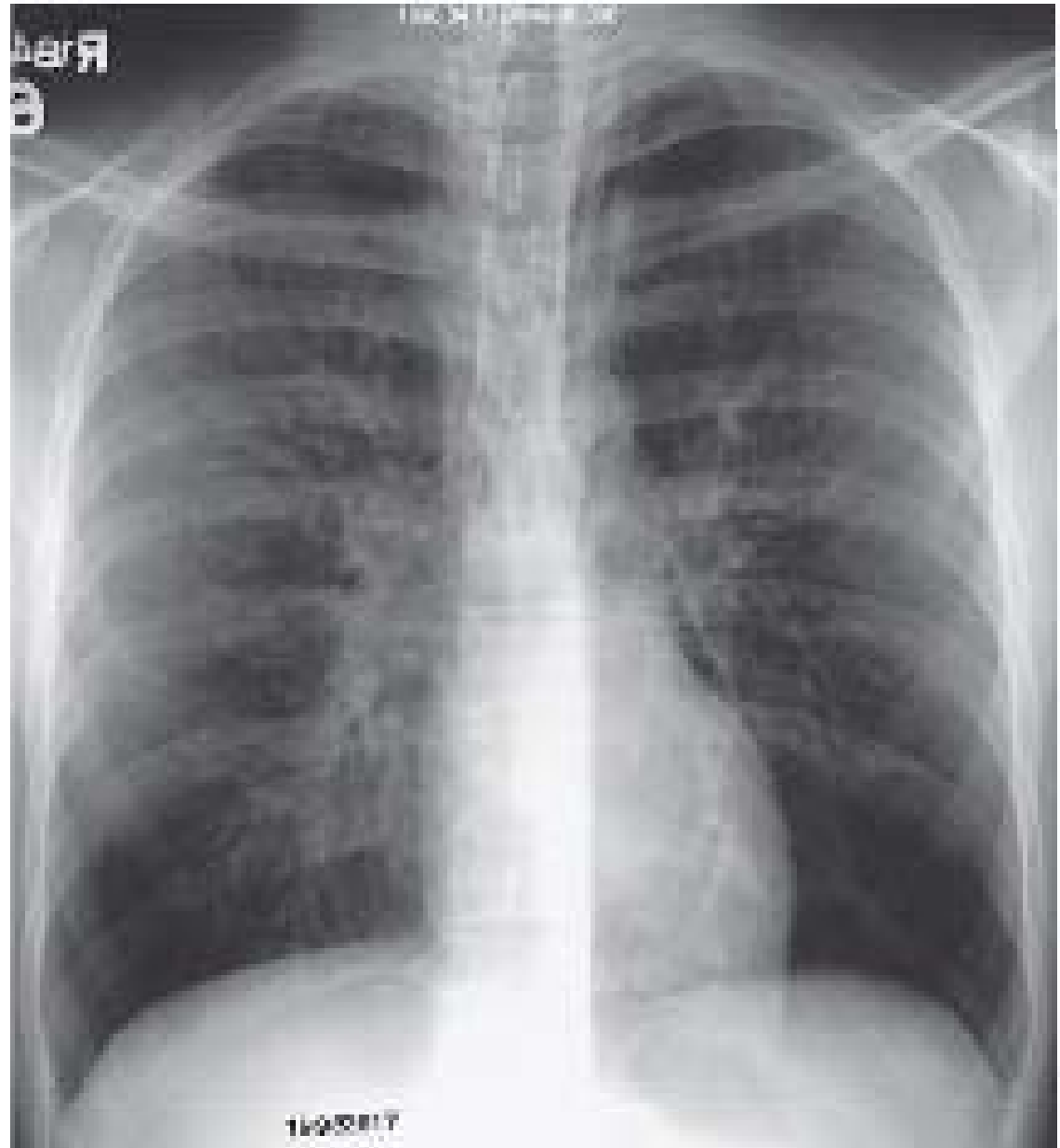
3. What will be the next relevant investigation that would be helpful to find out the cause?

- Gastrografin swallow
- CT Thorax – can identify the anatomical extent of air-leak



- Potential Sources of Mediastinal Air
- Intrathoracic
 - Trachea and major bronchi
 - Esophagus
 - Lung
 - Pleural space
- Extrathoracic
 - Head and neck
 - Intraperitoneum and retroperitoneum

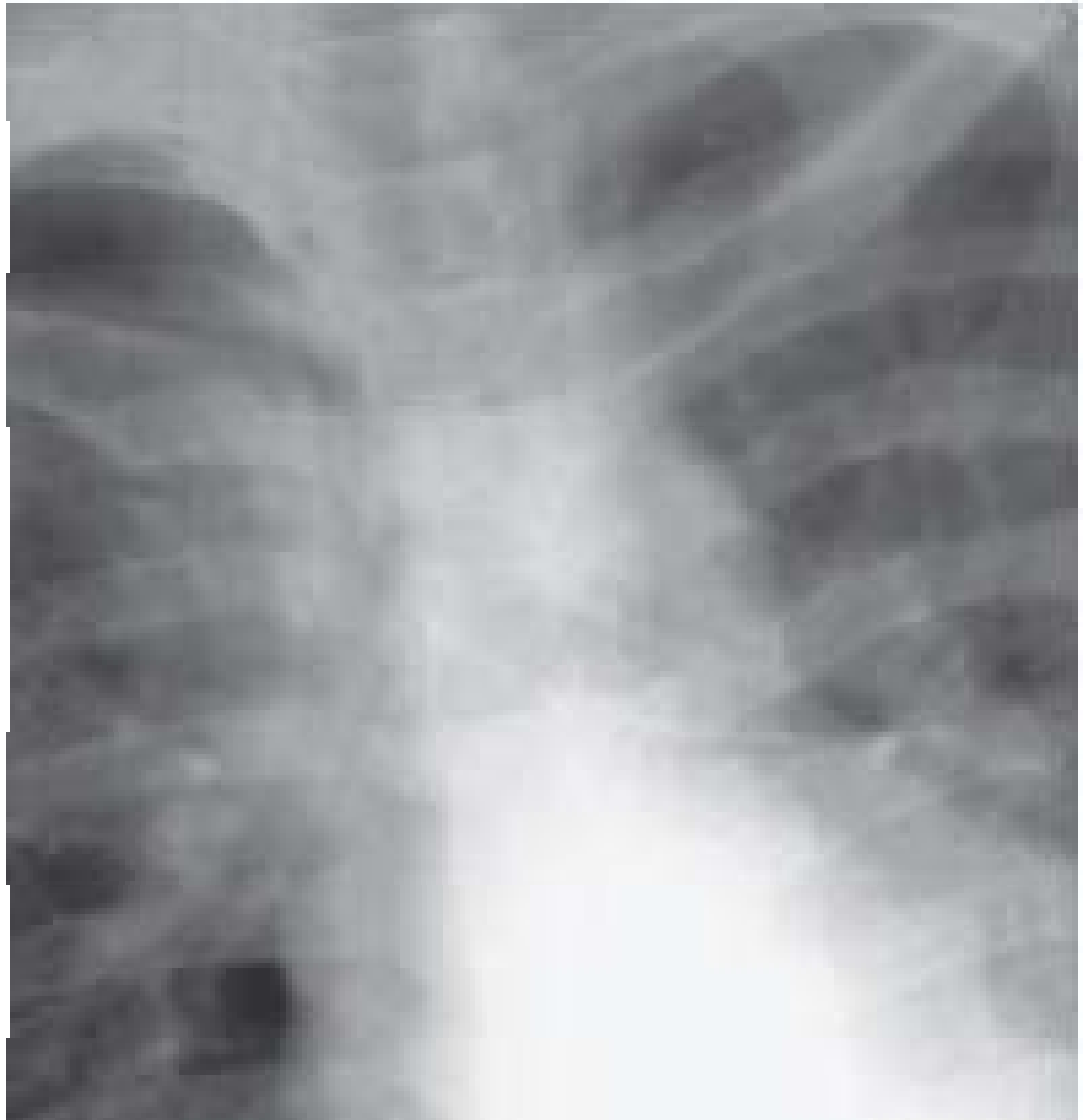
- Air outlining left subclavian a, probably left carotid a.
- (tubular artery sign)



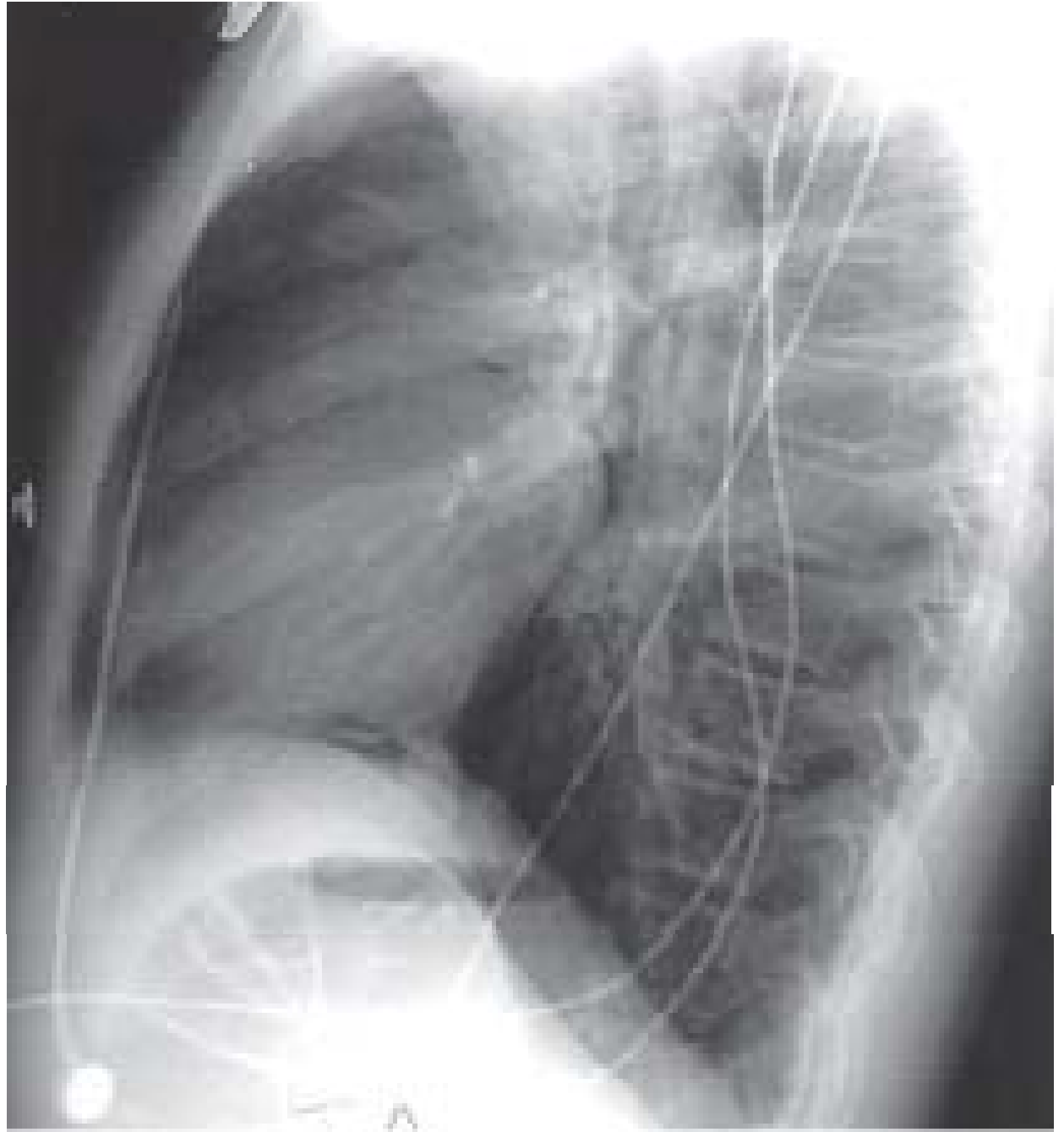
- Thymic sail sign



- Air in mediastinum and left main bronchus, outlining bronchial wall
- Double bronchial wall sign



- Air surrounding right pulmonary a.
- Ring around artery sign



Case 2

- Q.4
- Precipitating factors for pneumomediastinum.
 - Cocaine inhalation
 - Vigorous vomiting or cough
 - Barotrauma (e.g. scuba diving)
 - Valsalva maneuver
(e.g. weight-lifting, playing wind instruments)
 - Foreign body ingestion leading to esophageal rupture

Case 3

- A 50-year-old gentlemen complained of URI symptoms for 1 week. There was mild chest discomfort. ECG was then performed

Name: Birth Date: Years
Sex: cm kg mmHg
Medication:
Symptoms:
History:

Heart rate 78 bpm
PR int 146 ms
QRS dur 110 ms
QT/QTc int 350/384 ms
P/QRS/T axis 68/4/73 °
RV5/SV1 amp 1.215/0.455 mV
RV5+SV1 amp 1.670 mV

Years

1100 Sinus rhythm
2440 Incomplete right bundle branch block
4236 Possible anteroseptal injury or acute infarct
9150 ** abnormal ECG **

Unconfirmed Report
Reviewed by:

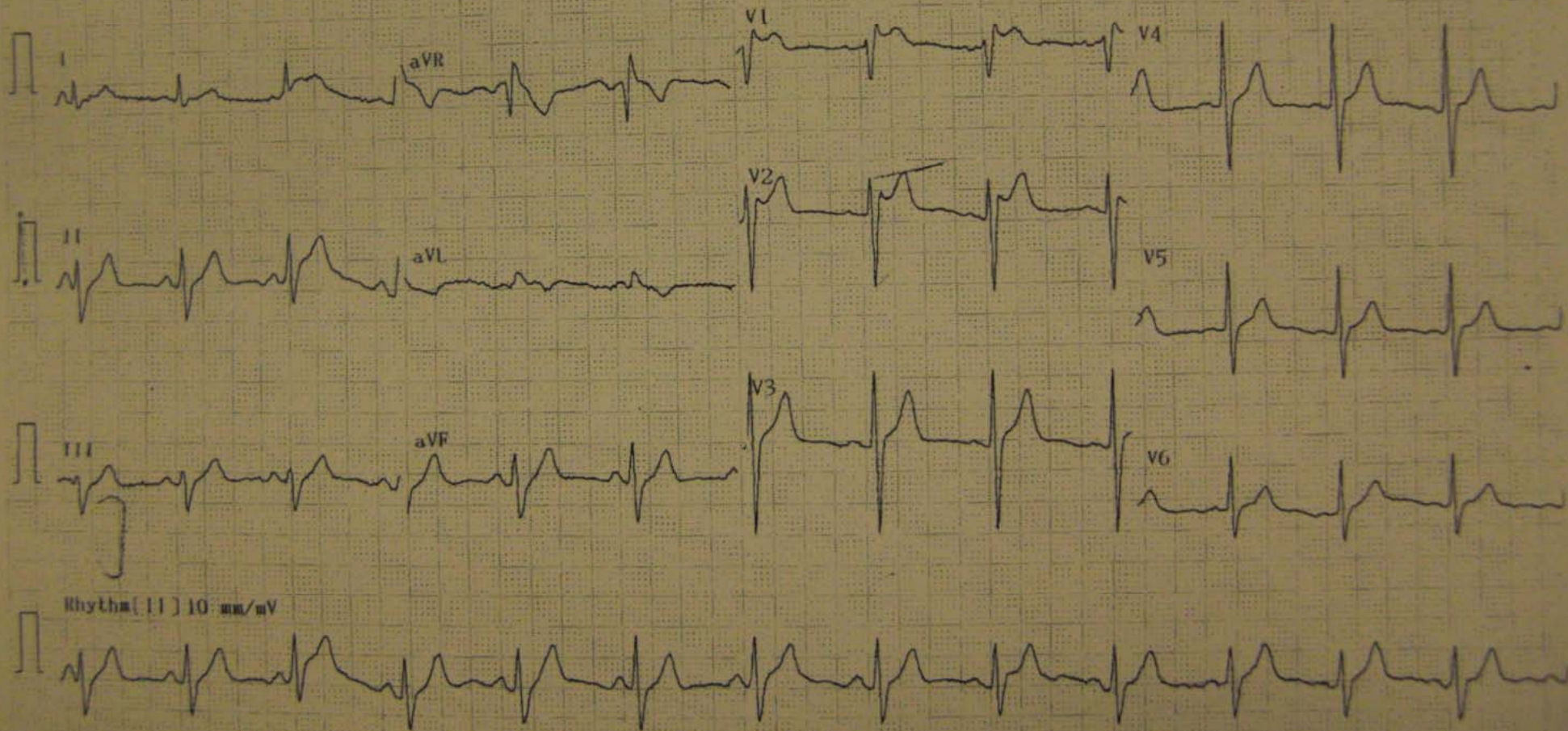
30/08/2010 17:55 EP1

10-40

10 mm/mV 25 mm/s Filter: H50 D 35 Hz 10 mm/mV

10 mm/mV

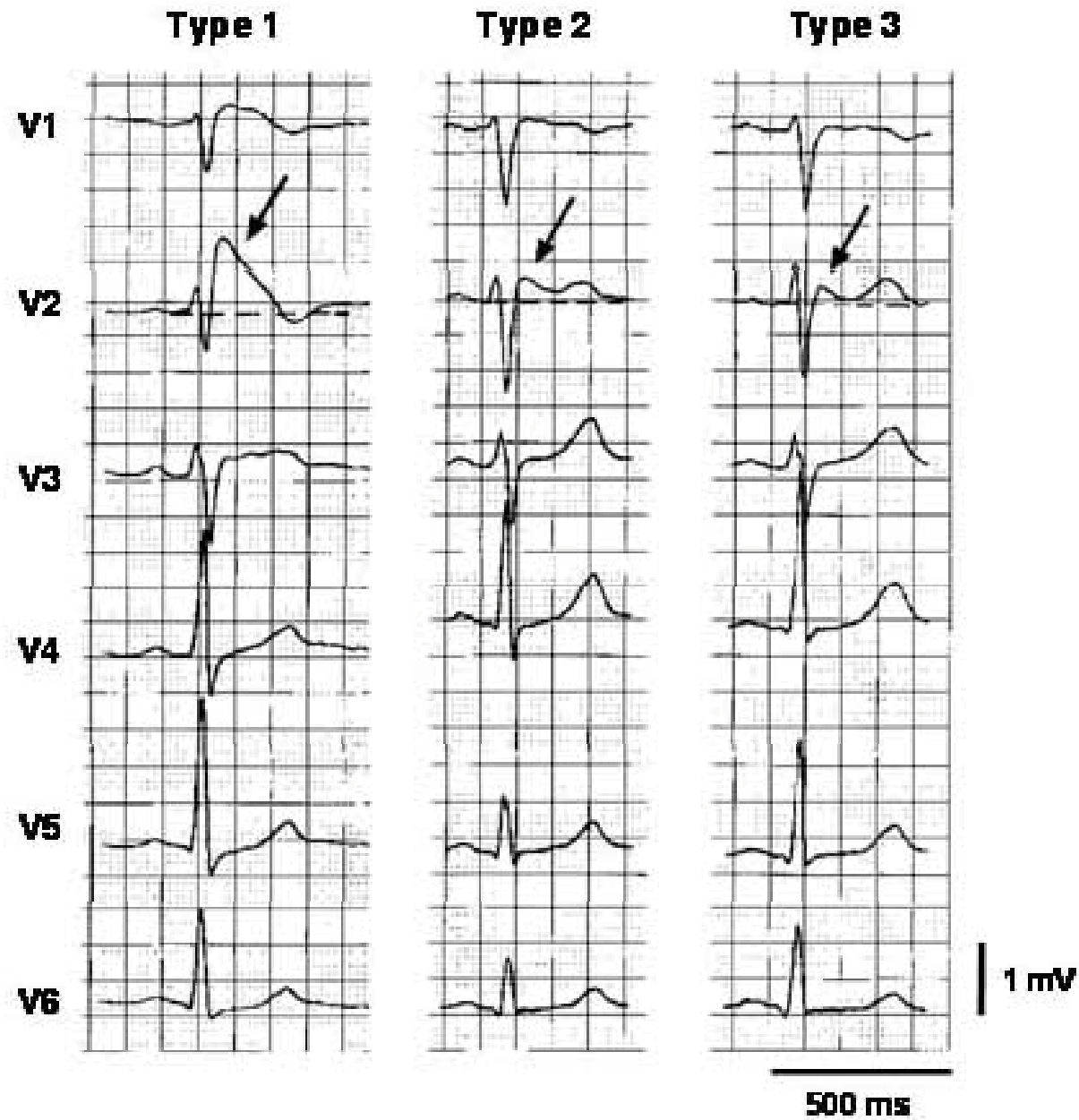
10 mm/mV



Case 3

- 1. Please describe 2 abnormalities on his ECG.
 - RBBB, ST elevation V1 and V2
- 2. What other relevant family history would you like to know?
 - Family hx of Sudden death

- 3. 3 different sub-types classified



Case 3

- Type 1 : Coved type
- Type 2 : saddleback ST segment , $> 1\text{mm}$
- Type 3 : saddleback ST segment, $< 1\text{mm}$

Case 3

- 4. what should be the life-saving treatment for this condition.
 - Automatic Internal Cardiac Defibrillator (AICD)

Case 4

- A 24-year-old lady underwent lipoma excision by private doctor in a clinic. The patient developed hypotension during the procedure and was immediately transferred to A&E by ambulance.
- On arrival, the patient was confused.
- BP 75/50 P55
- SpO2 99% on 100% oxygen
- Private doctor gave further details that the patient had good past health, of about 45kg, without any allergic history. Excision of lipoma was performed under LA, which 1% lignocaine of 30 ml was given. The operation was uneventful with minimal blood loss.

Case 4

1. What is the maximum dosage (total cumulative infiltrative injection dose per procedure) for lignocaine, and lignocaine with adrenaline? Was this patient given appropriate dose of LA ?

LA used commonly for infiltrative injection

drugs	Duration of action	Max. dosage guidelines
lignocaine	Medium (30-60min)	4.5mg/kg, not to exceed 300mg
Lignocaine with adrenaline	Long(120-360min)	7mg/kg, not to exceed 500mg
Bupivacaine (marcaine)	Long(120-240min)	2.5mg/kg, not to exceed 175mg

Case 4

1. ? Dose appropriate

- 1% lignocaine = 10mg/ml
- 30ml = 300mg
- 45kg
- Max. dosage = $4.5 \times 45 = 202\text{mg}$
- → lignocaine - **OVERDOSED**

Case 4

2. Name any 2 early neurological symptoms of LA toxicity.

- Metallic taste
- Circumoral parasthesia
- Diplopia
- Tinnitus
- Dizziness
- Lightheadedness
- Hallucination (auditory & visual)

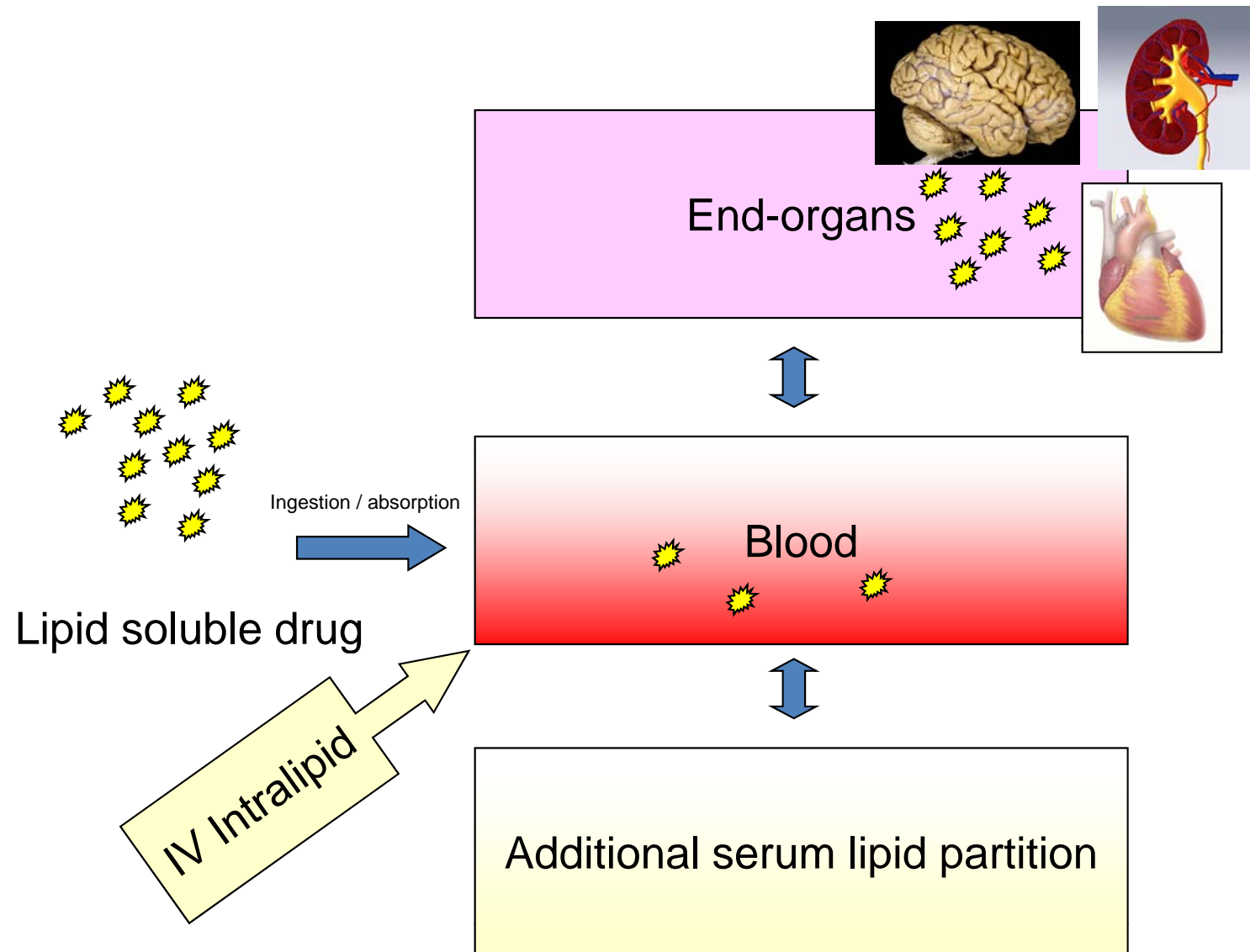
Case 4

3. 3 mechanisms for LA cardiovascular toxicity .

- Vasodilatation - direct vasotone effect or indirect block in spinal sympathetic outflow
- -ve inotropic effect (myocardial depression)
- Conduction block – asystole, heart block, bradycardia

Case 4

4. If the patient deteriorates and does not respond to atropine, inotropes and pacing, what drug could be given for treatment of LA toxicity.
- Administer 20% intralipid
 - (Give a bolus 1.5ml/kg iv over 1 minute
 - Followed by continuous infusion 0.25ml/kg/min for 30 min)



Case 5

- This lady presented with weakness 1 week after discharge from the hospital for surgery over her neck. The following is the picture of her neck during the A&E visit.



Case 5

1. What other neurological presentations might be present
 - Circumoral parasthesia
 - Hyperreflexia, tetany, carpopedal spasm, laryngospasm, seizure
 - Altered mental state

Case 5

Q.2

(a) Chvostek sign

- Facial muscle contraction upon tapping the region of the facial nerve in the preauricular area

(b) Trousseau sign

- Carpal spasm elicited by inflation of the blood pressure cuff in the upper arm

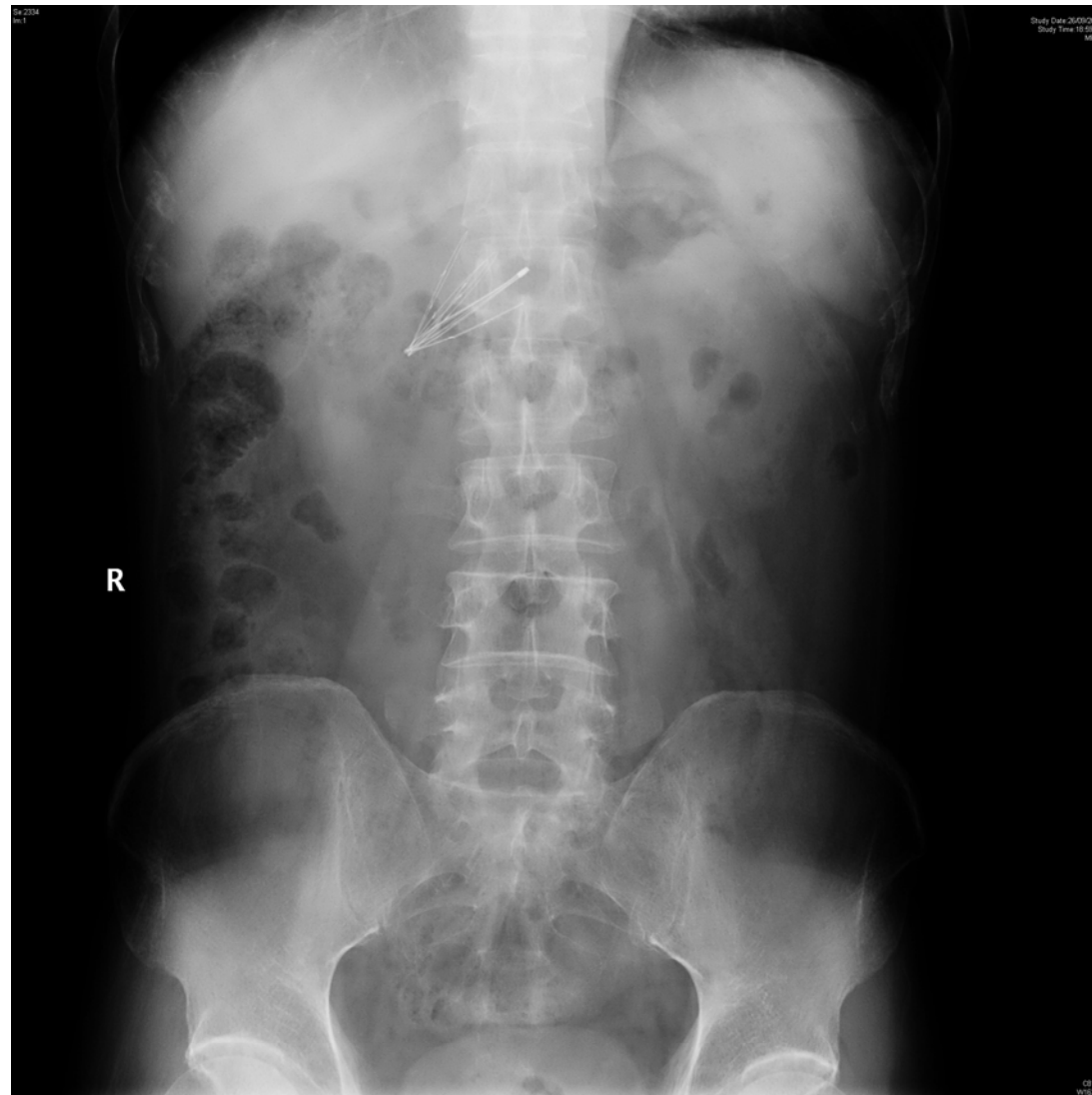
Case 5

3. Name one life-threatening ECG abnormality related to the underlying electrolyte disorder
 - Prolonged QTc
4. Name 2 nerves which might also be involved in this surgery.
 - Recurrent laryngeal nerve
 - Superior laryngeal nerve

Case 5

5. What correction should be made to the serum total electrolyte level if the serum Albumin is 30 g/L
- Add 0.02 – 0.025 mmol/L to the total Ca level for every 1 g/L drop in serum albumin level below 40 g/L

Case 6



Case 6

- Q.1
- The device shown in the x-ray
 - IVC filter is shown in the KUB
 - (infrarenal)

Case 6

2. Name any 2 Indications for such condition

- Prophylaxis for PE in patients with high risk for thromboembolism
 - Patients with DVT who are about to undergo surgery (lower-extremity orthopedic surgery, major abdominal surgery, neurosurgery)
 - *Patients with chronic pulmonary hypertension and a marginal cardiopulmonary reserve*
 - *Trauma patients: Patients with severe trauma are prone to develop DVT and PE.*
- DVT or PE who are contraindicated to anticoagulant therapy
 - E.g. haemorrhagic stroke, active internal bleeding, pregnancy, intracranial neoplasm

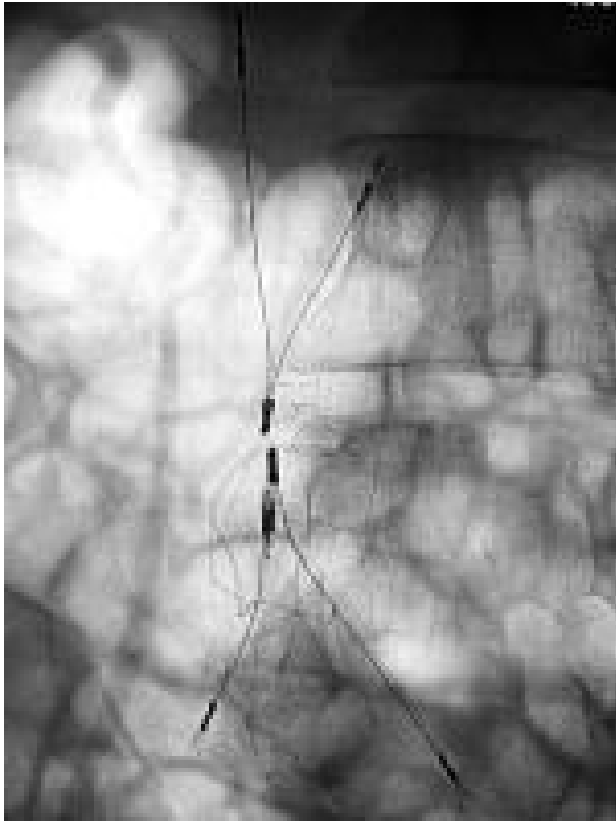
Case 6

- Other indications
 - Failure to anticoagulation therapy
 - E.g. patients who have new-onset PE despite receiving adequate anticoagulation treatment

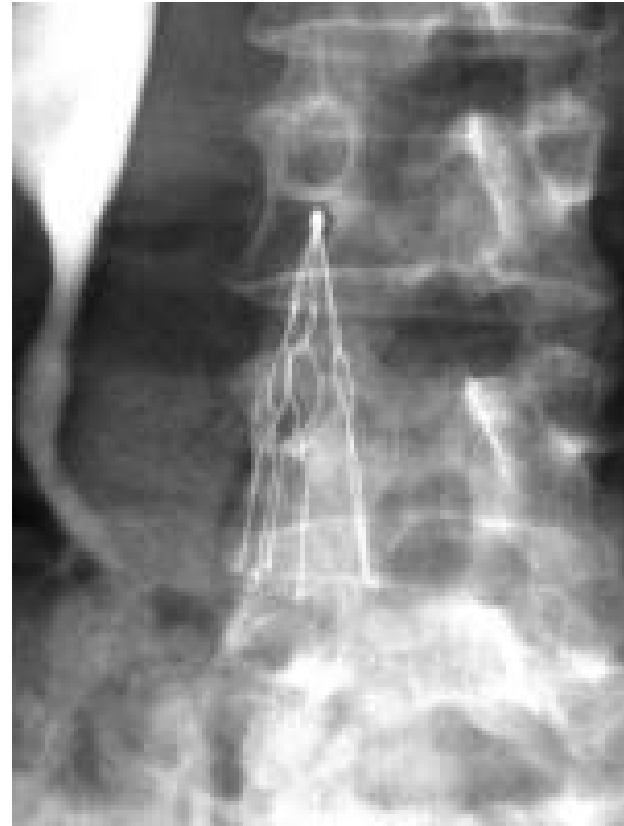
Case 6

- Complications of IVC filter:
 - Thrombogenic, cannot maintain caval patency
 - Migration
 - Corrosion and perforation of IVC
 - Ferromagnetic, no subsequent MRI examination

Examples of IVC filters



Bird's Nest filter

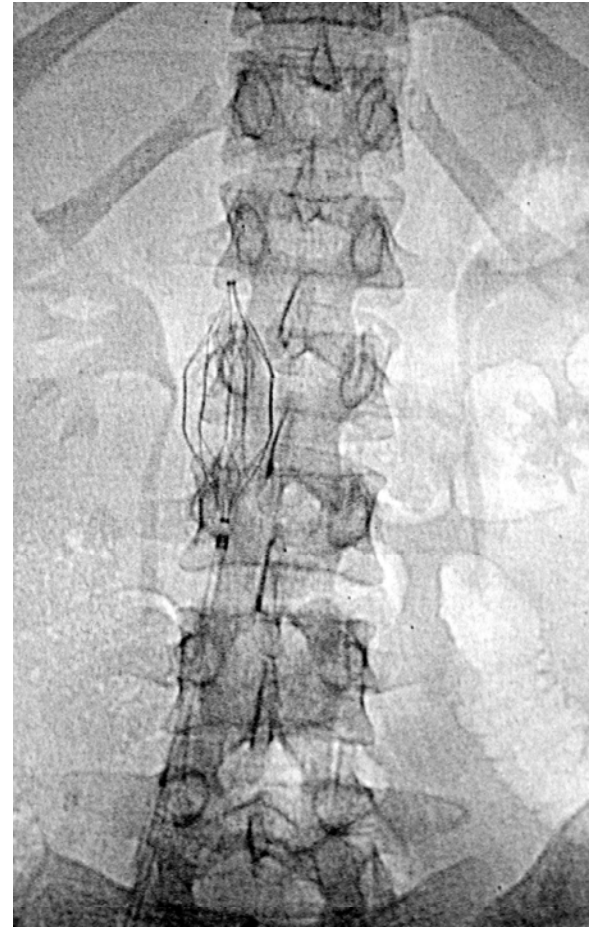


Greenfield Filter

Examples of IVC filters



Simon Nitinol Filter



TrapEase Filter