

HKCEM JCM Jan 2016 OSCE

North Lantau Hospital

Question 1 – sore throat

- A 70/M, complained of severe sore throat and gum pain for 1 day.
- He can't swallow and he is noted to have a hoarse voice. His tympanic temperature is 38.5 degree Celcius, pulse 100/min. Blood pressure 150/90mmHg, SpO_2 97% on room air.

Question 1 – sore throat

Question 1 – sore throat

- What diagnosis will you suspect? *(1 mark)*
  - Ludwig's angina
- If the patient is stable , what is your investigation of choice beside X-ray neck ? *(1 mark)*
  - CT scan
- Name 2 airway management of choice if the patient's airway is compromised. *(2 marks)*
  - surgical airway, awake intubation
- Name two bacteria causing the disease ? *(1 mark) (0.5 mark each)*
  - Anaerobes (75%) - Peptostreptococci, *Bacteroides* and *Prevotella* organisms, and *Fusobacterium nucleatum*
  - Aerobes (25%) - Alpha-hemolytic streptococci

Question 2 – difficulty in swallowing

- A 2-year-old boy presents with fever, difficulty in swallowing and stiff neck for 2 days.
- X-ray neck & CT neck with IV contrast are taken.

Question 2 – Xray neck

Question 2 – difficulty in swallowing

- What are the X-ray findings? *(2 marks)*
  - The prevertebral space is increased in depth compared to the anteroposterior measurement of the adjacent vertebral body or the retropharyngeal space is pathologically widened
  - Loss or reversal of the normal cervical lordosis (due to muscle spasm or local inflammation)
- What is the normal size of the retropharyngeal space in children? *(1 mark)*
  - Less than 7 mm at C2 or 14 mm at C6

CT neck with IV contrast

Question 2 – difficulty in swallowing

- What are the CT neck findings? *(1 mark)*
  - Hypodense swelling at right retropharyngeal space with rim enhancement and scalloping of its wall

Question 2 – difficulty in swallowing

- What is the diagnosis? *(2 marks)*
  - Retropharyhgeal abscess
- What are the usual pathogens? *(1 mark)*
  - Polymicrobial, Predominant bacterial species are Streptococcus pyogenes (Gp A), Staphylococcus aureus

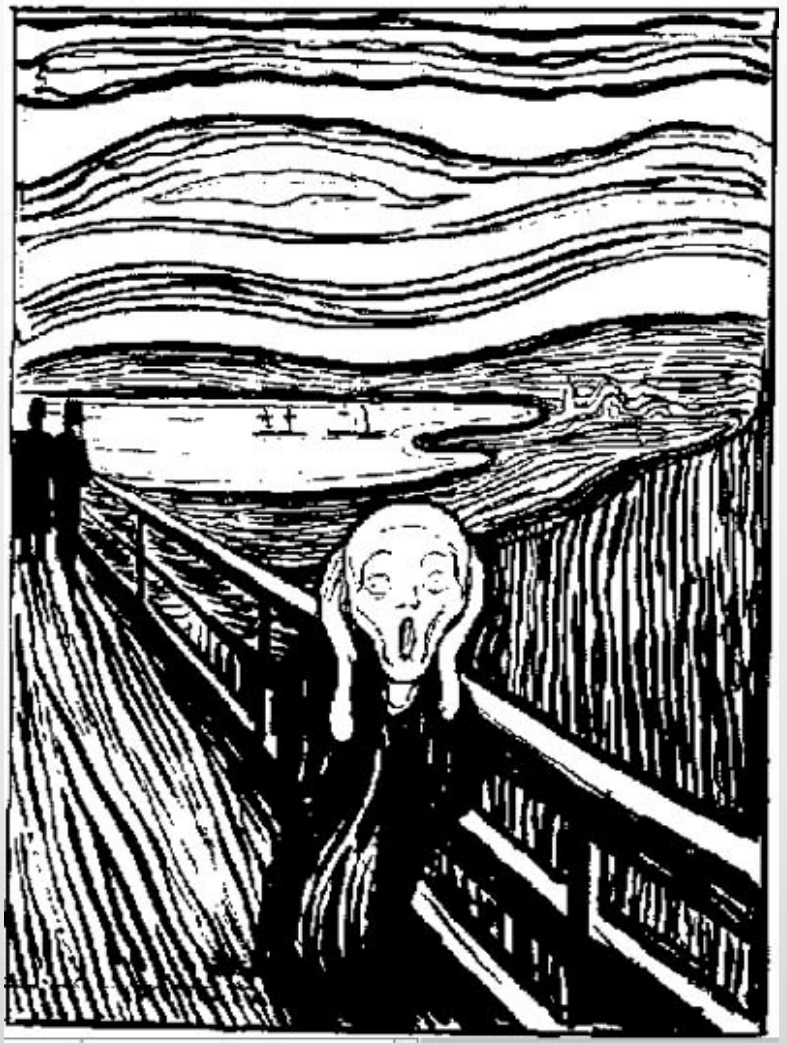
Question 2 – difficulty in swallowing

- What are the potential complications? *(1 mark)*
  - Airway obstruction , plus anyone of the following
    - Septicemia, aspiration pneumonia, internal jugular vein thrombosis, jugular vein suppurative thrombophlebitis, carotid artery rupture, mediastinitis, atlantoaxial dislocation

- What are the mainstays of management? *(2 marks)*
  - Maintenance of airway: intubation or tracheostomy if airway compromise
  - Other supportive care: adequate hydration, analgesia and monitoring of complication
  - IV antibiotic ASAP
  - Immediate surgical drainage in patient with airway compromise
  - CT with contrast should be performed if there is no clinical improvement 24-48 hours after IV antibiotics

Question 3 - confusion

- 40 year-old woman
- Found confused at home
- BP 99/59 P 119
- Temp 38.5°C
- Dehydrated
- Bilateral pupil 6mm non-reactive



Question 3 - confusion

- What are the differential diagnosis ? *(4 marks)*
  - Infective
    - Meningitis
    - Encephalitis
    - Sepsis
  - Metabolic
    - Hypoglycemia
    - Thyroid storm
  - Environmental
    - Heat stroke
  - Toxicological
    - Anti-cholinergic toxidrome
    - Sympathomimetic toxidrome
    - Neuroleptic Malignant Syndrome

Family member found a bottle of Artane was missing at home

- What kind of drug is this ? *(1 mark)*
  - benzhexol
  - antimuscarinic agent

Question 3 - confusion

- What's the likely diagnosis now? *(1 mark)*
  - Anti-cholinergic toxidrome

- Please list out the features related to your diagnosis *(3 marks)*
  - Confusion
  - Hyperthermia
  - Dilated pupil
  - Tachycardia
  - Dry skin
  - Flushing
  - Urinary retention
  - Decreased bowel sound

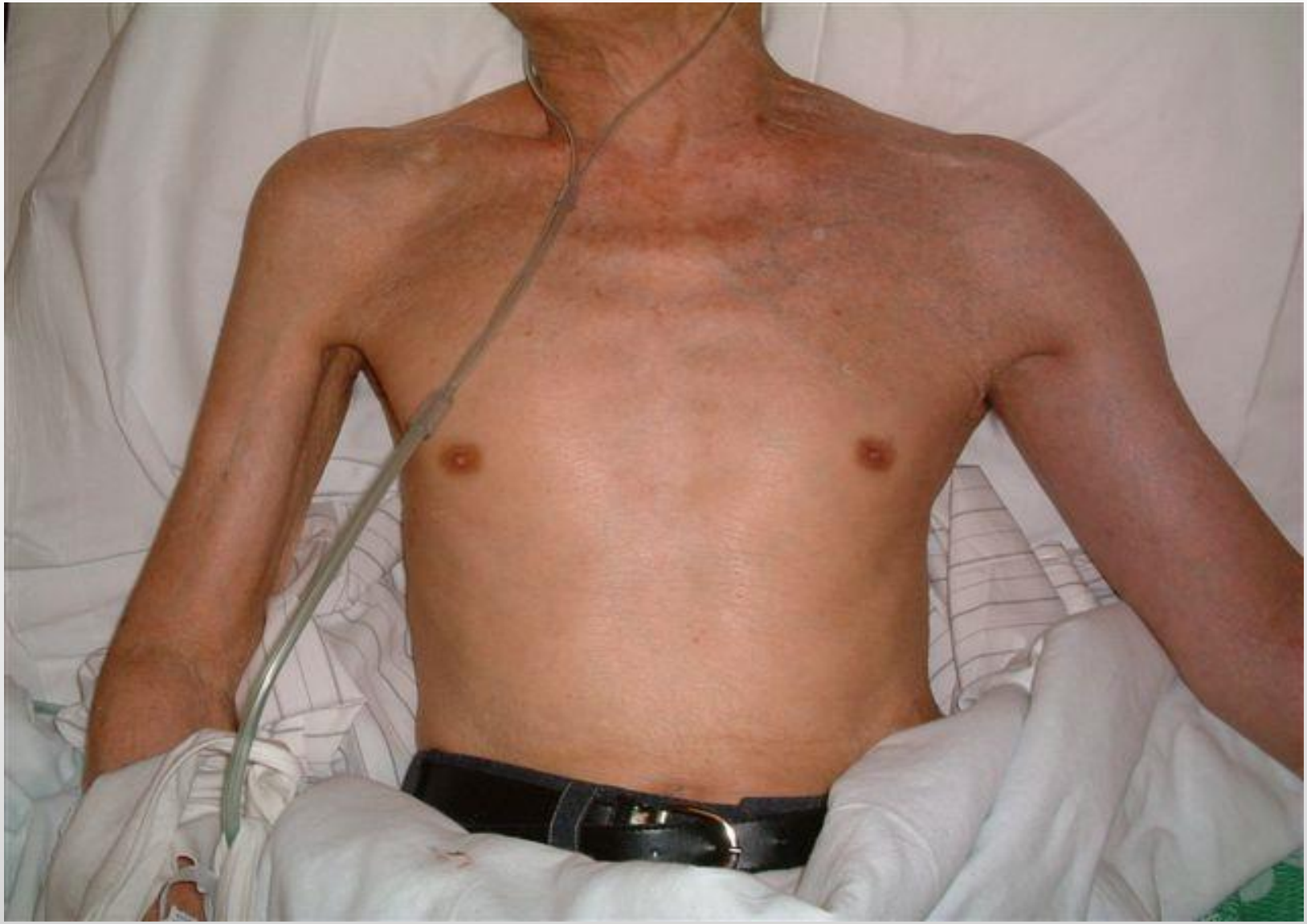
Question 3 - confusion

- Any specific antidote? *(1 mark) dosage and specific precaution (1 mark*
  - Physostigmine
  - Dosage : 1-2mg slow IV , with atropine standby

Question 4 – left arm pain

- A 65 years old gentleman complained of progressive left upper limbs swelling for 2 days. Vitals are stable. On examination, you noticed the finding in the following pictures:

Question 4 – left arm pain



Question 4 – left arm pain

Question 4 – left arm pain

- Describe the abnormal clinical finding shown in the photo *(1 mark)*
  - Swollen left arm and dilated superficial veins of left arm.
- What is the most likely clinical diagnosis ? *(1 mark)*
  - Axillary or subclavian deep vein thrombosis (1)

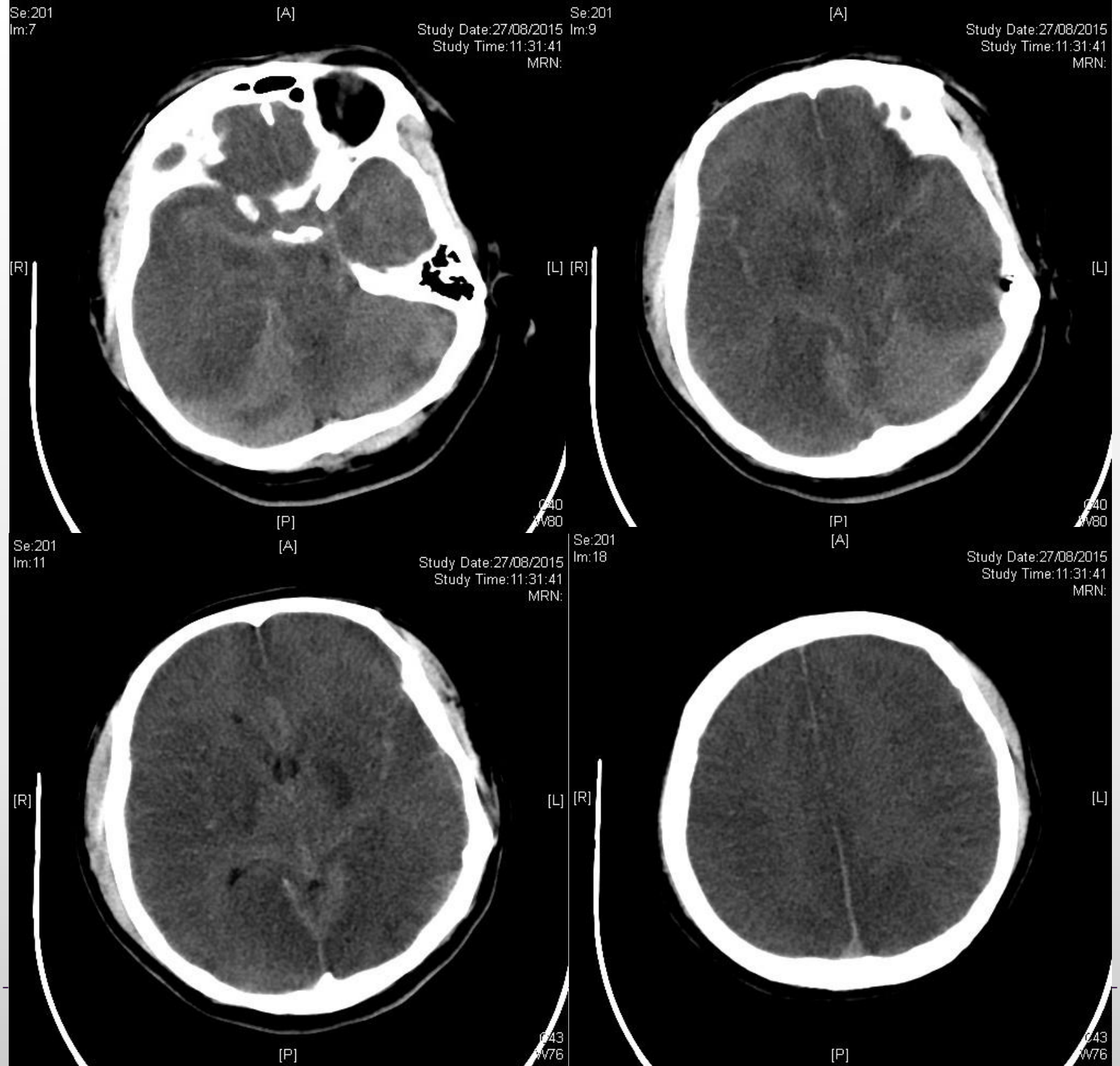
Question 4 – left arm pain

- Suggest 2 possible contributing / risk factors. *(1 mark)*
  - Subclavian vein cannulation / central venous cannulation
  - Sternous use of arm especially hyper-abduction
  - Protein S, Protein C deficiency
- What is the investigation of choice that can be performed in AED to confirm the diagnosis? *(1 mark)*
  - Doppler ultrasound study
- His condition was complicated by sudden deterioration with the onset of chest pain and SOB. What is the most likely problem now and what is the specific treatment of choice?
  (1 mark)
  - Pulmonary embolism (0.5)
  - unfractionated IV heparin or low-molecular-weight heparin (LMWH) (0.5)

Question 5 – post cardiac arrest

- A 50-year-old man developed sudden cardiac arrest and had ROSC after resuscitation. He remained comatose 24 hours after the event. CT scan of brain was performed.

- Describe the CT findings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Question 5 – post cardiac arrest

- What are the CT Findings ? *(2 marks)*
  - Increased attenuation in the basal cisterns and the subarachnoid spaces
  - Effacement of basal cisterns and cortical sulci
  - Compression on the fourth ventricle
  - Poor grey matter- white matter differentiation

Question 5 – post cardiac arrest

- What are the radiological diagnoses ? *(2 marks)*
  - pseudo-subarachnoid haemorrhage
  - Diffuse cerebral edema due to hypoxic anoxic encephalopathy

Notes:

- Comparing with true subarachnoid haemorrhage, pseudo-subarachnoid haemorrahge:
  - Usually symmetrical density confined to basal cisterns
  - Associated with cerebral edema or basal cistern effacement
  - Having a lower HU value 30 to 40HU (Vs true acute SAH ~60 HU)

Question 5 – post cardiac arrest

- The underlying Pathophysiology
  - Cerebral edema due to acute hypoxic anoxic encephalopathy increases the intracranial pressure, narrows the subarachnoid space and displace the CSF
  - The increased intracranial pressure causes engorgement and dilatation of the superficial venous structure
  - The resultant subarachnoid spaces become relatively devoid of the hypoattenuated CSF and filled with larger fraction of meninges and blood vessels than that in the normal state
    - Am J Neuroradiol 2003; 24:254-6.

Question 5 – post cardiac arrest

- What are the other possible causes of this CT images ?
  (2 marks)
  - Pyogenic leptomeningitis
    - J Comput Assist Tomogr 1994;18:126-8
  - Intrathecal administration of contrast material, or leakage of high-dose intravenous contrast medium into the subarachnoid spaces
    - Am J Roentgenol 1998;170:503-505