

ENT Answers

Question 20

What is the most likely diagnosis? (1 mark)

- Jaw (bilateral TMJ) dislocation

Name the anatomical structures involved and the direction of displacement (2 marks)

- Mandibular condyle (of mandible) moves anteriorly and out of mandibular fossa (of temporal bone)

Outline your approach to imaging in this condition (2 marks)

- Spontaneous = no imaging
- Traumatic = CT facial bones

Describe two techniques for managing this condition (6 marks)

- Syringe technique
 - 10mL syringe placed between mandibular and maxillary molars
 - Patient to roll syringe anterior & posterior

ISLHD Emergency Medicine Trial Written Fellowship Exam 2019.2 - ANSWERS

- Await spontaneous reduction
- Manual reduction
 - Gloves / rolled gauze, thumbs placed on mandibular molars
 - Firm, constant pressure inferoposteriorly until reduction
 - May require procedural sedation (often not)

Outline your discharge instructions (not including return precautions) in this case (2 marks)

- Simple analgesia – paracetamol / ibuprofen
- Soft / liquid diet
- Avoid yawning / taking large bites
- If recurrent, maxillofacial review

Candidate number _____

Answer SAQ 3 (Don Liew)

A 68 year-old man presents to the ED with ongoing epistaxis, of spontaneous onset. The patient's medications include warfarin.

Reference: Cameron 3rd ed, p 582

General comments

This question tests knowledge, but it's accepted that:

- Minor variations in practice exist.
- The material below is not the exclusive gold standard. Other material not included may also score marks.

Therefore, the following serves only as a guide. Precisely matched wording is not essential, provided concepts are appropriately conveyed. Spelling of medical terms need not be 100% correct, but should be mostly so!

Standards

Maximum score is 15. Borderline score is 11.

1. List six (6) features in the History that are important for your assessment of this patient. **6 marks.**

Thoughts (not to be included in your answer, but critical to its content nonetheless)

- Elderly man with iatrogenic bleeding diathesis
- Non-traumatic, so don't waste time with questions re trauma
- Indication for warfarin is important, as prosthetic valve largely precludes warfarin reversal, whereas AF poses less risk of reversal
- Hx also aims to assess:
 - Cause other than warfarin, such as hypertension
 - Severity – viz blood loss volume
 - Complications – shock
 - Implications for Mx – local tamponade, warfarin reversal, prophylactic Abx, patient's competence

Answer

- A. Estimate amount of blood loss*: duration of bleed, number of soaked tissues, swallowed blood
- B. Effects of blood loss*: dizziness, sweating, pallor, dyspnoea, chest pain
- C. Reason for warfarin*: prosthetic valve indicates incomplete warfarin reversal
- D. Co-morbidities*, esp uncontrolled hypertension
- E. Social circumstances: degree of competence, resources to manage at home, expectations
- F. Medication Hx: concurrent antiplatelet therapy, antibiotics (increase INR), allergies (eg to Abx)

* Issues highlighted by asterisks are requisite for perfect marks for this question.

Candidate number _____

2. The patient is bleeding only from Kiesselbach's plexus (Little's area). He is haemodynamically stable. Outline six (6) steps you would take to control his epistaxis. **6 marks.**

Thoughts (not to be included in your answer, but critical to its content nonetheless)

- Complete and persistent haemostasis is the target; recurrent bleeding risk is high
- Strategies: Local effects, optimising coagulation profile and prevention

Answer

- General: reassure, sit patient up, firm external pressure* to nares while equipment prepared
- Suction blood and clots from nostril
- Topical constrictor* agent: cotton pledgets soaked with lignocaine/adrenaline or *Cophenylcaine Forte* to Little's area
- Chemical cautery with Ag nitrate sticks
- If persistent bleeding despite the above, anterior packing with 0.5 inch gauze soaked with constrictor
- Optimise INR*: reverse warfarin with vitamin K if appropriate: <2 if warfarin for AF, and close to 2 for prosthetic valve

* Issues highlighted by asterisks are requisite for perfect marks for this question. Cautery AND/OR tamponade (one alone suffices) also requisite.

3. List three (3) pieces of advice you would give him on discharge. **3 marks.**

Answer

- General*: Do not pick or blow nose for at least 4 days; moisturize nostrils with *Vaseline* or chloromycetin eye ointment.
- If warfarin withheld, seek rv* for repeat INR and recommencement of warfarin.
- Indications for ED return*: recurrent bleed and / or if anterior pack in situ that needs removal.

* Issues highlighted by asterisks are requisite for perfect marks for this question.

QUESTION 14 (15 marks) - Contact Person - Dr Khanh Nguyen

i) 2 marks

- Foul smelling rhinorrhoea / purulent discharge
- Unilateral epistaxis
- Unilateral nasal obstruction / mouth breathing
- Pressure necrosis
- Septal necrosis especially with battery or paired disc magnet foreign bodies
- Less specific – facial swelling and fever

ii) 3 marks

- Topical anaesthetic and vasoconstrictor applicator
- Suction (Frazier's)
- Airway trolley in the event of airway obstruction from bleeding or inadvertently pushing foreign body deeper*
- Optimise lighting with headlamp
- Nasal speculum
- Equipment necessary for removing object
- Appropriate PPE

iii) 1 mark

- Posterior FB not easily visualised
- Chronic or impacted FB with marked inflammation
- Penetrating or hooked FB
- Failure to remove in emergency due to poor cooperation, bleeding, limited instrumentation

iv) 9 marks

Technique	Advantage	Disadvantage
Direct instrumentation - Forceps/ wire loops / right angle hooks / balloon catheter	- Can be useful if object easily visualised and lying in anterior nares	- May not be able to grasp object - May lodge object deeper especially if attempting to pass behind and remove from behind - May cause bleed / mucosal trauma

Suction catheter	- Can assist in retracting object more anteriorly - Can remove blood/mucous	- Noise from suction catheter can scare children - Suction may not be strong enough to remove lodged object
Positive pressure technique - Occluding unaffected nostril and blowing - Air blown into mouth by parent - Oxygen applied at flow rate of 10-15L/min in unaffected nostril	- Easy technique if child can cooperate, minimal risk of bleeding or trauma due to lack of instrumentation - Can be comforting for child "parent's kiss" - Lack of instrumentation of affected side – less likely to push object in further	- Child may not cooperate or understand instructions - Theoretical risk of disease transmission - Oxygen can be drying to nasal mucosa at high flow rates
Miscellaneous - Cyanoacrylate glue - Magnets	- Can be used on rounded structures e.g. beads - Can guide metallic objects out of nasal cavity	- Mess with glue - Limited success with these techniques

Q18 10/13

1.

Acute suppurative Otitis Media

Bulging tympanic membrane

Erythematous tympanic membrane

Pus visible behind TM

2.

Paracetamol 15mg/kg

Ibuprofen 10mg/kg

I/N Fentanyl 1.5mcg/kg

Anything else sensible ie PO oxycodone 0.05 - 1mg/kg

3.

Prior hearing impairment

Failure of conservative Rx (ie worsening Symptoms at 48hrs)

Cochlear Implant

Immunosuppression

4.

Tympanic Membrane Perforation

Mastoiditis

Cholesteatoma

Intracranial Extension

Chronic Otitis media with effusion

Hearing loss

SAQ 5 Answers – one mark per instrument or method, one mark per pro/con.

- Suction catheter
 - Pros – soft and atraumatic, useful for smooth objects
 - Cons – can be noisy
- Alligator forceps
 - Pros – ? in this situation
 - Cons – difficult to grip onto hard smooth objects such as this, risk of trauma to ear canal, risk of pushing object deeper into canal
- Jobson-Horne probe/Wax curette/right angle probe/bent paperclip
 - Pros – good for hard smooth objects to get behind the foreign body
 - Cons – risk of trauma to ear canal if patient moves, risk of pushing object deeper into canal
- Tissue adhesive on wooden end of Q tip
 - Pros – good for hard smooth objects
 - Cons – risk of adhering the Q tip to the ear canal, risk of pushing object in further
- Katz extractor/balloon catheter
 - Pros – less risk of trauma than metal instruments, good for hard smooth objects to get behind the foreign body
 - Cons – limited availability, injury to ear canal, risk of pushing object deeper into canal
- Irrigation/Syringing
 - Pros – ? in this situation
 - Cons – contraindicated if grommets in situ or if TM perforation, unlikely to be successful for this foreign body, likely to push object deeper into canal
- Referral to ENT surgeon for removal
 - Pros – little risk to ED doctor, facilitates removal in OT under GA, removal is not a time critical emergency procedure
 - Cons – time and resource intensive compared to removal in ED, delayed removal

Pass mark 10/12

SAQ 7 Neck Lump

a) List your three (3) top differential diagnoses (3 marks)

- **Hodgkins lymphoma and/or non-Hodgkins lymphoma**
- **EBV infection/glandular fever/infectious mononucleosis**
- **Bacterial tonsillitis (not viral)**
- Hyperthyroidism with thyroid mass
- Leukemia
- Other bacterial infection with nodular reaction

b) List the three (3) most important additional historical features you would seek to help establish a diagnosis and explain how each may be of use. (3 marks)

- Sore throat – suggest tonsillitis
- Dysphagia – suggests oropharyngeal pathology
- Night sweats – suggests lymphoma
- Features of infection in the regional drainage area of the node
- History suggestive of TB
- History of potential HIV exposure
- Back, chest pain or abdominal pain, shortness of breath – suggests more generalised nodal involvement
- Easy bruising – suggests leukaemia
- Features of hyper or hypothyroidism

List the three (3) most important physical examination findings you would look for to help establish a diagnosis and explain how each may be of use (3 marks)

Any of the following is acceptable with 0.5 marks for each correct answer:

- Features of tonsillitis or mass – bacterial infection or malignancy
- Other lymphadenopathy (neck, axilla, and groin; hepatosplenomegaly) – suggests lymphoma
- Signs of anaemia or thrombocytopaenia (petechiae, purpura, bruising) – suggests leukaemia
- Establishing size, location and mobility of the lump – large, matted fixed masses are usually malignant
- Features of infection or malignancy in the drainage area of the node(s) involved.
- Examination of thyroid – mass suggests thyroid malignancy
- Features of pleural effusion – suggest malignant process

c) Describe five (5) investigations that might be most helpful in diagnosing this boy's illness, and explain how each may be of use (5 marks)

- **CBE: may be normal or show anaemia, low wbc, high wbc, thrombocytopaenia**
- LDH may be high if this is a lymphoma
- LFT's likely normal but may be elevated in EBV (or similar) infection
- **Chest x-ray to look for signs of infection or mediastinal nodes**
- Ultrasound of neck mass
- **Needle biopsy of neck mass**
- CT of chest and abdomen to look for other nodes
- ESR and CRP may be elevated in infection or with a lymphoma
- **Cultures (throat, other local lesions, blood) for bacterial infection**
- Viral serology for EBV, CMV, HIV

SAQ 8 (12 marks)

A 52 year old judo exponent presents to you with a laceration and swelling to his left pinna. (see image)

Describe the injury (2 marks)

Answer –

- A) Auricular haematoma to the right pinna with small associated superficial skin tear. There is no apparent involvement of the tragus or of the external auditory meatus or canal. The overlying skin appears well perfused at this point.

Score 2/2 – one for the description of the lesion and one for the note regarding the lack of involvement of the external meatus and tragus.

Outline 4 important steps in the management (4 marks)

Analgesia

Drainage of the haematoma

Assessment for other injury including in the external canal and the medial aspect of the pinna..

Field block of the pinna

Pressure dressing post drainage

Tetanus prophylaxis as appropriate to immunisation status

Close follow up

Score 4/4 - lose 2 points for any of the answers in bold not included.

For this type of injury list 6 indications for referral for formal surgical review and repair (6 marks)

Answer –

- › **Large overlying skin avulsion (approximately 5 mm or greater)**
- › **Severe crush injuries**
- › **Complete or near-complete avulsions or amputations**
- › **Large cartilage defects (approximately 5 mm or greater)**
- › **Obvious devitalization**
- › Large auricular haematomas
- › Wounds that require the removal of more than approximately 5 mm of tissue
- › Significant involvement of the auditory canal

Score out of 6 points. Lose 2 points for any options in bold not included.

What are the contraindications to drainage of this problem in the ED (2 marks)

Answer–

- Haematomas older than 7 days
- Recurrent or chronic haematomas

(open surgical debridement indicated because the haematoma, granulation tissue, or both can be located within the cartilage instead of in the sub-perichondrial space.)

Score 2/2.

SAQ 10 (20 marks)

A 25 year old man has been brought in to your emergency department after sustaining a knife wound to his neck in an assault (see image). His vital signs and GCS are normal.

Describe the injury seen in the picture above: (3marks)

Mention any three of the following:

- Large y-shaped or zigzag left lateral neck wound
- Platysma breached
- Extends through zones III and II
- Blood-soaked gauze
- Soft tissue swelling (suspected expanding haematoma) at the angle of the mandible

Complete the following table for each of the three zones of the neck: (12marks)

1mark for each correct landmark (max 3)

1 mark for angiography (Zone III and Zone I) and 1 mark for operative exploration (max 3)

2marks for correct identification of two anatomical structures in each zone (max 6)

NECK ZONE	ANATOMICAL LANDMARKS	ANATOMICAL STRUCTURES WHICH MAY BE INJURED	INVESTIGATION MODALITY
ZONE III	Angle of mandible to base of skull	Pharynx, jugular veins, vertebral arteries, internal carotid arteries	Angiography Bronchoscopy Oesophagoscopy
ZONE II	Between cricoid cartilage and angle of mandible	Jugular veins, vertebral and common carotid arteries, external and internal carotids, trachea, oesophagus, spinal cord, larynx	Operative exploration

ZONE I	Between clavicles and cricoid cartilage	Lung, trachea, great vessels, oesophagus, spinal cord, thoracic duct, cervical nerve trunks	Angiography Bronchoscopy Oesophagoscopy
--------	---	---	---

List the indications for emergent intubation of this patient: (5marks)

- Stridor
- Acute respiratory distress
- Airway obstruction from blood or secretions
- Expanding neck haematoma
- Profound shock
- Extensive subcutaneous emphysema
- Altered mental state
- Tracheal shift

(Relative indications – no marks for this)

- Progressive neck swelling
- Voice changes
- Progressive symptoms
- Massive subcutaneous emphysema of the neck
- Need to transfer symptomatic patient
- Symptomatic patient with anticipated prolonged time away from ED

TOTAL: ____/20MARKS

Author: Dr Laura Hutchinson (FACEM Wollongong Hospital)

Date created: 11/5/16

Resources: Tintinalli's Emergency Medicine

SAQ17

You are the consultant in a tertiary hospital ED. A 25 year old woman, G2 P1 who is currently 20 weeks pregnant, attends the ED with a sore neck. She discloses to the resident that she was strangled by her partner during an altercation earlier in the evening. The resident comes to you for advice.

What features of history or examination would suggest her neck injury needs further investigation? (6 marks)

1. Visible local bruising / swelling / petichiae
2. Dyspnoea / stridor
3. Dysphonia / voice change
4. Neurological deficit
5. Carotid bruit
6. Bony cervical spine tenderness
7. History of LOC or altered GCS
8. Other reasonable

Subcut emphysema
pain/difficult swallowing

NB. 7 let trough swelling + petichiae separately.

After further assessment you decide the patient does **not** require specific investigation of her neck injury. She declines to stay in the ED for any further assessment as she was mainly worried about her neck.

What are the important points to address prior to discharge of this patient? (6 marks)

1. Safety of patient and any children
2. Careful documentation of injuries in case of future legal issues -
3. Conceal patient identity in the ED
4. Referral to social work or other expert service for counselling
5. Offer to assist with police contact
6. Ongoing antenatal / medical care
7. Other reasonable

analgesia / return precautions

No one mentioned documentation (competence?)

watch out for local quirks eg DV reporting in NT

Nothing in stem to imply that patient is intoxicated or lacks capacity.

SAQ 10

Answers:

1. List five clinical features used to assess the severity of a patient's upper airway obstruction

(5 marks) 3/5

- Nature of stridor - continuous vs intermittent, soft vs loud
- Self positioning - relaxed vs upright
- Ability to swallow secretions
- Voice change and/or aphonia
- Respiratory distress
- Anxiety/distress

2. Outline your initial treatment of this patient

(5 marks) 3/5

- Keep sitting up
- Calm environment
- Nebulised adrenaline 5mg in 5ml
- IV steroids - dexamethasone 8mg or hydrocortisone 200mg
- IV antibiotics - ceftriaxone 2g
- Early ENT involvement
- Difficult airway equipment to the bedside

- 3) This patient is to be transferred to tertiary ENT care. Outline four important considerations when preparing to transfer this patient and provide some details of each. The department is currently well staffed, with good senior cover.

(12 marks) 9/12

- Patient
 - Severity of airway involvement
 - Response to treatment
 - Comorbidities
 - Some discussion of intubate first vs transfer awake. (This pt is deliberately not so severe that he has to be intubated first.)
- Equipment
 - Monitoring - full non-invasive
 - Advanced airway equipment, including difficult airway equipment, especially surgical airway
 - Drugs - more adrenaline nebs
- Escort
 - Senior MO +/- senior RN
 - Skilled and prepared to do surgical airway
- Distance or mode of transport
 - Some discussion of distance required, likelihood of deterioration
 - Road vs air, space available to intervene en route

Passmark: 15/22 Adjust to ../10 please

Ref: Dunn, eTG, Cameron, good common sense!

This paper is property of The Prince Charles and The Royal Brisbane & Women's Emergency Departments and should not be distributed or published without permission from the DENT Teams

SAQ 4

1.

Urgent ENT notification for urgent theatre (1 mark)

Stop bleeding – adrenaline soaked gauze on end of Magill's forceps to tonsillar bed (1 mark)

Resuscitate

- 2 IV cannulae – largest possible (1 mark)
- Bolus N/S 20ml/kg acceptable but not essential
- Use O negative blood early – 10ml/kg boluses (1 mark)
- Aim for pulse <120, BP >90 (1 mark)

IV Abs – benpen 1.2g (1 mark) +/- metronidazole

2.

Difficulty	Solution
Difficult laryngoscopy due to blood	Use 2 suction devices
Haemodynamic collapse on induction	Extra bolus fluid/blood prior to induction
Hypoxia during apnoea due to aspiration	BVM ventilation through induction to minimise apnoea

There will be other acceptable alternatives, but don't be too soft

Q14

1.

Ice gargles

Hydrogen peroxide gargles

Co-phenylcaine spray

Adrenaline soaked gauze on Magill's forceps

Intubation and packing

2.

- ❖ Hypoxia post induction / difficulty pre-oxygenation / aspiration lung injury
 - 15L O₂ via NRB plus nasal prongs at max, sit up until stops breathing, 2 suckers, apnoeic intubation as fast as possible (use of NIV would be incorrect given blood)
- ❖ hypotension post induction
 - 2 IV access, adequate fluid load 20mL/kg N/S pre-induction, have O negative blood ready for use
- ❖ difficult laryngoscopy due to blood
 - use 2 suckers, extra assistant, have backup airway equipment ready esp LMA
- ❖ Scared child / unco-operative child
 - Have parents with child for support, also dedicated nurse for family / child support
- ❖ IV access
 - Have dedicated nurse to help with this, use IO if patient not able to be cannulated
- ❖ Difficult BVM due to blood
 - Early change to LMA, aim to have apnoeic intubation

Q13 Answers

Q1

Submandibular abscess (Ludwig's angina)

Q2

Large swelling right side of face and below mandible / neck

Accompanying erythema

Q3

Analgesia – IV morphine 2.5mg aliquots or similar titrate to pain

IV Abs – benzylpenicillin 1.2g and metronidazole 500mg

Urgent ENT (or max-fax) review for drainage and airway control

Also accept anaesthetic referral for airway control

Q4

Seldinger

- Locate cricothyroid membrane (CTM)
- Insert needle through CTM under air aspirated
- Pass guidewire through needle
- Remove needle
- Incise skin
- Dilate tract
- Insert tube

Question 23 (12 marks)

A 48-year-old man presents to your regional Emergency Department with 24 hours of dysphagia and fevers, and new respiratory distress. He has no past medical history and is not on any medications. On arrival, he is sitting upright and is reluctant to lie back on the bed. He is having difficulty swallowing his secretions and also has a mild stridor with a hoarse voice.

His vital signs are:

BP 140/80 mmHg
HR 90 bpm
SpO2 99% RA
Temp 37.8°
RR 24

The nearest tertiary centre is a 2 hour drive away by road. You obtain a lateral neck x-ray, shown in the Props Booklet (Figure 8).

a). State the likely diagnosis and name the relevant positive finding on this radiograph (2 marks)

Acute epiglottitis

Thumb-printing sign of epiglottitis

b). What is the most common causative organism for this patient's diagnosis? (1 mark)

Strep pneumoniae

c). What would be your anti-microbial of choice for this patient? (1 mark)

Ceftriaxone or Cefotaxime 1g IV

The patient develops worsening stridor and distress within 20 minutes of arrival at your department. He is becoming increasingly agitated and his oxygen saturations start to drop. You make the decision to intubate the patient in the ED. There is no anaesthetist available.

d). Complete the following table, listing the issues you might face during the intubation of this patient and how you would address these problems. (8 marks)

Factor	Anticipated problem	Proposed solution
--------	---------------------	-------------------



Positioning	Pt unable to lie flat	Pre-oxygenate in upright position
Laryngoscopy	Large epiglottis likely to distort view	Use of straight (Miller) blade Hyper curved blade may improve view
Tube delivery	Laryngeal inlet may be narrowed or soiled with pus	Use of more narrow bore ETT or bougie
Failed airway plan	Unlikely to be able to ventilate through LMA	Have equipment and landmarks ready for a surgical cricothyroidotomy.

Note: There are clearly other issues that may arise. I am happy to give marks for these, but they must be accurately described and addressed

Reference : eTG, Dunn

