

1. Lead examiner

Candidate Number:

2. Co-examiner

Final Mark:

SCENARIO

A 34 year-old man is brought to your tertiary ED after a motorbike crash. Your junior registrar assesses the patient and reports to you a diagnosis of dislocated left patella. He asks you to review X- rays of the patient's knee.

Question 1: Describe and interpret the xrays.*(Included in stem. XR on paper)*

Expected Response	Details & Comments	
AP view - left side	Medial displacement of the tibia is seen with widening of the lateral joint line Dislocated tibio – femoral joint Possible # lat condyle, medial tibial plateau (debated)	Prompt: what direction?
Lateral view – left side	Anterior displacement of the tibia on the femur Anterior knee dislocation Lipohaemarthrosis	
Relevant negatives	No air in joint.	
Implication	Dislocation of knee. Risk of vascular compromise, Needs urgent attention.	highlighted to pass

Question 2: You assess the patient and find this is his sole injury. Describe your examination given this injury.

Expected Response		
Neurovascular assessment	Pulses and 1 other re circulation (cap return, colour, temperature) sensation, motor function Up to 33% of patients sustain popliteal artery injury – important to establish whether there is a vascular injury early Periphereal pulse check, sensory examination is important – 25% patients have peroneal nerve injury, and 10 % of patients with normal pedal pulses will still have vascular injury	
Open/closed	Skin, signs of penetration	Prompt: Anything else

Question 3: Describe your immediate management

Analgesia	Titrated fentanyl/morphine – strong analgesic agent	
Move to monitored area	Will require sedation for reduction	
Emergent reduction	Procedural sedation – should identify which agent or combination Reduction by longitudinal traction usually works	If won't move limb - prompt
Post reduction care	Splint, elevate, (analgesia) repeat xray, reassess neurovascular	Prompt: Any other post-reduction care?
Consultation Disposition	Orthopaedic , vascular team involvement early	Anything else?
Full explanation to patient	Including complications resulting from the injury (risk of amputation, persistent nerve problems, continued instability of knee, long rehab time, chronic pain/stiffness,..)	

Question 4: Discuss investigations for vascular injury in this patient.

Expected response	Details and comments	
Doppler / ultrasound Bedside v radiology dept	Bedside Pros: cheap, easy to do, establishes flow Cons: not definitive, uncertain sensitivity Dept Pros: Faster than CT? No contrast. Identifies lack of flow Cons: availability, expertise	Prompt: Any other imaging modality?
Angiogram: In OT or radiology dept	OT Pros: Gold standard option. Immediate limb saving surgery / vascular repair will likely decrease risk of amputation. OT Cons: Contrast. Resource intensive. Challenge to mobilise vascular and ortho teams. Limb is still perfused. Timely non-operative imaging may suffice. Dept Pros: More sensitive for detection of small intimal tears. Dept Cons: Contrast. Requires presence of interventional radiologists.	
MRI / MRA	Pros: Able to identify ligamentous / other injuries in addition to vascular damage. Cons: Poor access, esp after hours (even in tertiary ED); less sensitive at detecting smaller intimal tears.	
CT angiography	Pros: Greater sensitivity with high resolution scanners. Less invasive. More accessible than MRA and conventional angiogram. Cons: Dependent on calibre of radiology service	

Question 5: How would you address the registrar's initial mis-diagnosis?

Expected Response	Details & Comments	
General	- Debrief / feedback/education at appropriate time - Establish reasons and contributing factors to event - If significant issue: enlist and involve key stakeholders: DMT, assigned mentor - Adopt non-punitive, inclusive approach - If indicated, employ realistic, systems-orientated solutions	
Expectations for the level of a junior registrar	Knee dislocation is uncommon but critical to recognise early. Exposure to this injury wouldn't necessarily occur in early stages of ED training.	
Identify possible individual impediments	Identify if radiology interpretation an issue, identify if clinical examination problem identify if other problems in the past Example: Impaired physician, personal problems or distractions, fatigue, night shift	Prompt: What individual factors might contribute to this misdiagnosis?
Identify possible systems impediments	Poor supervision on ED floor; punishing registrar roster, education program	Prompt: What systems factors might contribute to this misdiagnosis?
Reassurance	Advising the registrar about the correct step of seeking senior help early	
Debrief	Important to reiterate the issues in the management of a dislocated knee.	
Enhancing education	Suggest the registrar prepares a CME session on knee and patella dislocations.	
Other solutions	Dependent on findings. May not be required. If so, focus on feasible, systems-orientated actions. Eg mentor program; roster revisions	
Follow up	Monitor trainee's performance and progress. Reviewing departmental education programme and ensuring orthopaedic (and other key) topics are covered.	

Comments: (if you fail the candidate, please state why)

If the candidate fails the exam overall, what feedback would you suggest CIC provide for this SCE?

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Question 1: Describe and interpret the x-rays.

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Lossy Compressed

T. JONATHON
Study Date: 16/09/2020
Study Time: 17:01:13
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Lossy Compressed

T:JONASCHN
Study Date: 16/06/2005
Study Time: 17:01:13
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