

OSCE 7

Candidate Instructions

This is a **7 minute** station.

In this scenario, there is NO RISK of COVID-19. COVID-19 precautions are NOT REQUIRED.

You are the consultant overseeing the fast-track area in your tertiary emergency department (ED). You are about to see a patient with lower back pain. The triage notes provide the following information.

Patient: Chris Day

Age: 57 years

Presenting complaint: Lower back pain. Stumble backwards yesterday without falling to the ground. Brought in by ambulance.

No allergies

You will interact with the patient to take a history.

At 4 minutes, the examiner will present the examination findings to you and then ask further questions.

Your tasks are to:

- Take a focused history from the patient
- Interpret examination findings provided by the examiner and prioritise your differential diagnoses
- List and justify further investigations for this patient

This OSCE will assess the following domains:

- Medical Expertise – 50%
 - History taking
- Prioritisation and Decision Making – 50%
 - Prioritise differential diagnoses (30%)
 - Justify investigations (20%)

OSCE 7

Examiner Instructions

This is a **7 minute** station.

This station is to assess history taking for back pain with red flags, formulate a differential diagnosis and rationalise investigations.

The case is a 57 year old patient who presents with back pain following a minor stumble without falling to the ground. History provided by the role player describes a usually well patient with a history of insidious back pain that is much increased after minor mechanism injury. Red flags to be revealed on history taking include history of melanoma, sweats, weight loss, nocturnal pain and malaise.

It is expected that the candidate will formulate a differential including malignancy and infective causes and discuss their reasoning for this. The candidate will then be asked to explain what investigations they will perform.

The candidate will have 4 minutes to take a history from the role player. After this time, the candidate will be interacting directly with the examiner, who will ask them to interpret examination findings, prioritise their differential diagnoses, then list and justify their investigations.

The candidate's tasks are to:

- Take a focused history from the patient
- Interpret examination findings provided by the examiner and discuss their differential diagnoses
- List and justify further investigations for this patient

Please see **Candidate Instructions for domains and full details provided to candidates.*

OSCE 7

Examiner Script

Part 1 (0 – 4 mins)

Candidate introduces themselves and takes a history from the patient.

Part 2 (4 mins – 5 mins 30 secs) Interaction with examiner from this point

Hand examination findings to candidate and say:

“You have examined Chris and your findings are on this handout. Please list and prioritise your differential diagnoses and give your rationale”

- ***Temp 37.8 degrees C, other vitals normal***
- ***Midline lumbar tenderness at L4 level***
- ***Neurological examination is normal apart from***
 - ***Reduced sensation L4 dermatome***

“Please list and prioritise your differential diagnoses and give your rationale”

Expect candidate to give a list of differentials with supporting features and relevant negatives

- Malignancy with pathological fracture (high on list and most concerning)
 - distant history of malignancy, weight loss, poor appetite and sweats, low grade fever, nocturnal pain insidious onset worse after minor trauma
- Infection (discitis, septic arthritis, osteomyelitis, abscess)
 - less likely as insidious onset that is worse after minor trauma, still a concern with severe back pain and fever
 - Negatives: no risk factors (instrumentation, immunosuppression, IVDU)
- Spinal cord compression / Cauda Equina Syndrome
 - Less likely as no neurological features of this.
 - Pain is bilateral buttock.
- Insufficiency compression fracture
 - Fits with minor mechanism and severe pain
 - Negatives: no risk factors for osteoporosis
- Muscular back pain
 - Fits with increasing pain since minor mech
 - NB – must be diagnosis of exclusion
 - Negatives: doesn't explain preceding weight loss, poor appetite and sweats and fever.
- Intervertebral disc herniation- mentioned by many candidates.
- AAA
 - Concern = pain increasing
 - Negative: vitals – no HD compromise or other examination findings. Hx atypical.
- Transverse myelitis
 - Supporting: severe increasing pain with numbness
 - Negatives: following trauma, no weakness, no sphincter disturbance.

- Arthritis (Osteo/Rheumatoid / Sero negatives)
 - Supporting: morning pain
 - Negatives: very acute onset

Part 3 (5 mins 30 secs – 7 mins)

“What is the role of imaging in this patient? Give your rationale.”

Candidate should give a prioritised list of investigations that will provide a diagnosis and assess severity of complications. They should address the pre-test probability and sensitivity of tests (when applicable) as well as their availability.

- CT lumbar spine
 - Good sensitivity for fracture (compression or pathological)
 - Will identify unstable fracture and degree of effacement of spinal cord or nerve root foramen
 - Readily available
 - Fast to perform
 - Low sensitivity for infective pathology, spinal cord injury or primary cord pathology
- MRI lumbar spine
 - High sensitivity for infective or malignant pathology but not smaller fractures
 - High sensitivity for spinal cord or nerve root compression or injury
 - Availability limited
 - Patient may require sedation to achieve (low probability)
- Bone scan
 - Useful for confirming active bone turnover in infective or malignant process, or fracture
 - Not specific for differentiating these
 - Availability dependent on time of day, radionuclide availability – likely a next day investigation
- Xray Lumbosacral spine
 - Not sensitive enough for exclusion of infection or malignancy
 - May identify compression fracture or large bone metastases

Examples of probes:

- ***“So far you’ve mentioned What would your preference be?”***
- ***“What is your rationale for selecting....”***
- ***“What are the pros and cons of”***

OSCE 7

Role-player Instructions

- **Gender:** Male
- **Age range:** 45-65 years
- **Role to be played by:** SP

This is a **7 minute** station.

Scenario Information

You are 57 year old Chris Day. You have presented to the emergency department with back pain after a minor stumble yesterday. You stepped backwards off a small step you hadn't noticed. You didn't fall to the ground but landed heavily on your feet. You felt the pain immediately, centrally in the lower back. It has been getting gradually worse since the incident.

Since the stumble:

The pain is central in your lower back, sharp in nature and much worse with any movement. You have some pain radiating down to the buttocks bilaterally. You haven't been able to walk this morning because of pain but didn't notice any weakness. Your left leg feels a little numb. You have passed urine this morning and a bowel motion. You haven't noticed any bowel changes lately. You have normal perineal sensation.

Role Background

You did have some pain in that area for a few weeks before the stumble, but only mild and not affecting function.

The back pain was previously a deep ache, in the lower back. You haven't seen anyone about it because it wasn't severe. It seems worse at night, and you need to take two paracetamols to get a comfortable sleep.

You have been feeling generally unwell recently, with fatigue and the occasional night sweats. Your appetite has been poor for a few weeks and you have lost a couple of kilograms of weight. You don't have any abdominal pain or any other specific pains.

You think of yourself as a healthy person. You have no chronic medical conditions and no regular medications. You had a melanoma removed from your calf around 10 years ago with no further follow up required.

You're a salesperson, selling office equipment. You live a healthy lifestyle with no smoking, no alcohol and no current or previous illicit substance use. You've had no recent travel and no prior overseas travel.

OSCE 7

Role-player Script

Part 1 (0 – 4 mins)

Opening statement:

"Hello doctor. Thanks for seeing me."

The candidate is expected to:

- Introduce themselves
- Ask about severity of pain and offer analgesia
- Take a history of the presenting complaint
- Take a past medical history, medication history, social history and travel history

History of back pain nature and severity

If the candidate asks about the severity of the pain or offers analgesia:

"I've had some pain killers with the ambulance and the pain is only mild while I'm resting"

If asked what was given by the ambulance say:

"Just some tablets."

If asked about the nature or location of the pain:

"It is a sharp pain since I stumbled, right in the middle of my lower back. It's severe when I move."

If asked about the background pain:

"Before I stumbled it was a deep ache in my lower back."

If asked about duration:

"It's been there on and off for a few weeks, but it is much more severe since I stumbled yesterday."

If asked about diurnal variation or exacerbating factors:

"It always seems worse at night, but this morning I couldn't even get up."

If asked about relieving factors:

"It's better when I'm still."

If asked about whether the pain radiates anywhere:

"I feel pain down into my buttocks on both sides."

If asked if there is any abdominal pain:

"No."

History of trauma

If asked about injury yesterday:

"I stepped backwards over a low step. I stumbled backwards but didn't fall. I landed hard on my feet and had an immediate sharp pain in the middle of my back"

History of neurological symptoms

If asked about weakness or sensory deficits:

"I couldn't get up this morning, it was too painful to try. I didn't notice any weakness. I feel numb in my left leg."

If asked where the numbness is:

"The numbness is from my knee down on the inside of my left leg."

If asked about bowel or bladder function:

"I passed urine and a bowel motion normally this morning"

"I haven't noticed any problem with my bowels"

If asked about perianal or perineal sensation:

"It all feels normal"

History of symptoms of malignancy

If asked about weight loss or appetite:

"I haven't had much of appetite for a few weeks and I have lost a couple of kg"

If asked about night sweats or fevers:

"Yes, I have woken overnight with sweats and had to change my pyjamas a few times recently"

If asked specifically about:

- History of malignancy or cancers:
 - ***"I had a melanoma removed from my calf about 10 years ago."***
 - If asked further detail, say: ***"They said they got it all"***
 - If asked about follow up say: ***I haven't had any follow up since then.***
- If you have noted any chest lumps:
 - ***"No"***
- Lumps in arm pits, groin or neck:
 - ***"No"***
- Prostate check:
 - ***"It was normal, 2 years ago"***



History related to infection

If asked if you've had any fevers recently:

"I have had some sweats, maybe fevers that seem to be at night. I haven't got a thermometer."

If asked about specific infective symptoms such as below Qs: Answer **"No"** to all:

- Respiratory symptoms - Cough, runny nose, sore throat
- Urinary symptoms – pain on urination, urinary frequency, urinary retention
- Skin infections – redness, pain
- Gastrointestinal – abdominal pain, vomiting or diarrhoea
- Neurological – headache, photophobia, neck stiffness

If asked have you ever had any of the below Qs: – answer **"No"** to all:

- use of steroids or immune therapy medications
- any operations or injections to the spine
- used intravenous drugs
- prior tuberculosis infection

Past Medical History

If asked if you have any medical history:

"Like what?"

If asked if you take any medications:

"I have just been taking paracetamol and ibuprofen for the pain. I don't take any other medications"

If asked about any of the following: Answer **"No"**

- Other specific conditions (other malignancy, prior trauma, prior back pain, arthritis, diabetes, immunosuppression)
- Smoking or alcohol
- Have you ever used any intravenous drugs

Social History

If asked about profession:

"I sell office equipment"

If asked about drugs or alcohol:

"No, I don't drink or take drugs."

If asked about recent or past travel:

"I've had no recent holidays and I've never been out of Australia"

Part 2 (4 - 5.5 min) Interaction with [examiner](#) from this point

OSCE 7

Props list

Examination Findings

- Temp 37.8 °C, other vitals normal
- Midline lumbar tenderness at L4 level
- Neurological examination is normal apart from:
Reduced sensation L4 dermatome



CONFIDENTIAL Examiner Rating: OSCE 7

Domain	Criteria	Marking rules to be 'at a minimum level of competence'/other comment	Criteria met / not met
Medical Expertise: History taking (50%)	- Asks about patient comfort and offers analgesia - Takes a history of back pain (key features): - Mechanism - Nature - Intensity / severity - Location and radiation - Onset, duration, diurnal variation - Exacerbating or relieving factors - Asks about symptoms indicating spinal cord compression / cauda equina syndrome: - Paraesthesia - Weakness - Urinary retention - Faecal incontinence - Lost perineal sensation - Undertakes a basic systems review for other symptoms - Takes a medical history, enquiring specifically about back pain red flags: - Malignancy - Prior malignancy - Malaise - Weight loss - Sweats / fevers - Nocturnal pain - Infection: - Fevers / sweats, malaise - Gradually increasing pain - Immunosuppression, diabetes, renal failure - IVDU - Takes a medication and allergy history - Takes a social history	- Takes a history of back pain including at least 5 key features - Asks about symptoms indicating spinal cord compression / CES - Asks about back pain red flags including: - Malignancy – at least 2 red flags - Infection – at least 1 of Fever / Gradually increasing pain / Immunosuppression / IVDU	
		Feedback Statements – Did the candidate adequately:	
		- Take a relevant history of back pain - Ask appropriate questions regarding symptoms of serious spinal conditions - Assess history for indications of a serious cause	

P&DM: Prioritising Differential Diagnoses (30%)	Differential Diagnoses: • Malignancy / pathological fracture (high on list and most concerning): ◦ Distant history of malignancy, weight loss, poor appetite and sweats, low grade fever, nocturnal pain insidious onset worse after minor trauma • Infection (discitis, septic arthritis, osteomyelitis, abscess): ◦ Less likely as insidious onset that is worse after minor trauma, still a concern with severe back pain and fever ◦ Negatives: no risk factors (instrumentation, immunosuppression, IVDU) • Spinal cord compression / cauda equina syndrome: ◦ Less likely as no neurological features of this ◦ Pain is bilateral buttock. • Insufficiency compression fracture: ◦ Fits with minor mechanism and severe pain ◦ Negatives: no risk factors for osteoporosis • Muscular back pain: ◦ Fits with increasing pain since minor mech ◦ NB – must be diagnosis of exclusion ◦ Negatives: doesn't explain preceding weight loss / poor appetite / sweats / fever. • AAA: ◦ Concern = pain increasing ◦ Negative: vitals – no HD compromise or other examination findings. Hx atypical. • Transverse myelitis: ◦ Supporting: severe increasing pain with numbness ◦ Negatives: following trauma, no weakness, no sphincter disturbance. • Arthritis (Osteo/Rheumatoid/ Sero negatives): ◦ Supporting: morning pain ◦ Negatives: very acute onset	Minimally Competent Criteria: • Generates an appropriate differential diagnosis list including: ◦ Malignancy / pathological fracture ◦ Infective cause • Provides appropriate rationalisation for inclusion of differential diagnoses • Prioritises differential diagnoses appropriately Feedback Statements – Did the candidate adequately: • Provide a list of key differential diagnoses • Provide a rationale for the differential diagnoses • Prioritise serious differential diagnoses for back pain	
PDM: Justifying Investigations (20%)	Candidate must justify imaging: • CT lumbar spine: ◦ Good sensitivity for fracture (compression or pathological) ◦ Will identify unstable fracture and degree of effacement of spinal cord or nerve root foramen ◦ Readily available, fast to perform ◦ Low sensitivity for infective pathology, SCI or primary cord pathology • MRI lumbar spine: ◦ High sensitivity for infective or malignant pathology but not smaller fractures ◦ High sensitivity for spinal cord or nerve root compression or injury ◦ Availability limited • Bone scan: ◦ Useful for confirming active bone turnover in infection/malignancy/# ◦ Not specific for differentiating these ◦ Availability dependent on radionuclide availability – likely a next day • X-ray lumbar spine: ◦ May identify bony metastasis or fracture Any findings will require further imaging (CT or MRI) to define	Minimally Competent Criteria: • Must list: ◦ CT ◦ MRI • Prioritises imaging to evaluate for time critical diagnoses • Provides adequate rationale for each investigation Feedback Statements – Did the candidate adequately: • List appropriate imaging modalities relevant to this patient • Prioritise imaging relevant to critical diagnoses • Provide rationale for selection of imaging modalities	