POST-OP THR PATIENT UNWELL

MODULE: TRAUMA AND ORTHOPAEDICS

TARGET: CT1 – ST4

BACKGROUND:

Total Hip Replacement is currently the most commonly performed elective orthopaedic operation. Patients are frequently in their older years and as a result have multiple co-morbidities. Careful post-operative care is essential in order to minimise complications. Recently newer thromboprophylactic agents are being used in some Trusts including rivaroxiban. It is important that junior surgical trainees understand the risks associated with using these agents.

RELEVANT AREAS OF THE CURRICULUM

Module 5:

Post-operative monitoring
Cardiorespiratory physiology
Fluid balance and homeostasis
Pathophysiology of blood loss
Post-operative complications in general
Haemostasis and blood products
Clotting mechanism (Virchow Triad)
Effect of surgery and trauma on coagulation

INFORMATION FOR FACULTY

This simulation scenario is about managing uncertainty, this is not portrayed as a clear-cut case but rather mimics the grey areas encountered in clinical practice.

LEARNING OBJECTIVES

- Learners will experience and reflect upon clinical decision making – weighing up the risks
- Learners will receive feedback upon communication with senior colleagues – medical registrar and orthopaedic registrar
- Learners will receive feedback upon communication with an unwell post-op patient
- Learners will receive feedback upon their communication with a junior colleague
- Learners will discuss some of the difficulties with using some of the newer thrombo-prophylactic agents such as Rivaroxiban

SCENE SETTING

Location: Orthopaedic ward
Can use a dedicated SimSuite or portable DS 'igloo'

Expected duration of scenario: 20 mins

Expected duration of debriefing: 15 mins

EQUIPMENT AND CONSUMABLES

DS 'igloo'
Patient trolley / bed
Oxygen mask with reservoir bag
Sats probe
BP cuff
Torniquet
Venous cannulae plus cannula dressing
Blood bottles
Blood forms
Stethescope
ABG syringe
ABG print out
Either SimMan obs or IPAD with Cardiac parameter app plus IPOD controller eg. SimMonitor
Redivac drain full of fake blood (instant coffee plus red food colouring)
Opsite dressing
Computer with Xrays to visualise
ECG – with non specific changes
BNF available
Urinary catheter and urometer bag with 'urine'
Patient set of notes including drug chart and operation note

PERSONNEL-IN-SCENARIO

F1 Doctor
Patient (actor) The Harry Partnership £250
Nurse
Orthopaedic registrar
Medical registrar

PARTICIPANT BRIEFING

It is 20.30 hours and the F1 doctor has called you to the ward to help assess Derek Branning who is having some chest pains after his recent revisional hip surgery.

FACULTY BRIEFING

The surgeons have replaced the acetabular component (the pelvic side) but not the femoral component, it was a 3 hour operation performed the previous day.

ACTOR BRIEFING

Derek has had 2 previous hip replacements but they 'wore out' and this is the third one. These have been done for long-term arthritis. He has a dressing on his left hip and a drain still in situ.

Derek has been getting some chest discomfort since 5pm. The nurse put him on some oxygen, did an ECG and called the on-call house officer (junior doctor) to review the patient. This nurse has now gone on her break. The junior doctor sees Derek and is unsure about the cause of the chest pains and is not sure what to do so calls the on-call Core Trainee (next step up in seniority).

The drain coming out of the hip wound is full of blood. The drain was emptied yesterday and was full of blood then too, you can disclose this information if asked directly (*this is quite significant blood loss*). Derek is pale and a little sweaty, he is stoical and not complaining too much about the pain in his chest, but it is clear that it is causing significant discomfort.

The chest discomfort (*don't use the word pain*) is on the left side of the chest, it feels like a squeeze that gets more severe with a deep breath in to the point it makes Derek's eyes water. As a result Derek is taking very frequent shallow breaths. He doesn't actually feel short of breath and can talk in short sentences to the doctor. He has no pain in his calves. He feels nauseated with the pain but has not vomited. Derek feels faint particularly when he sits upright. (*This is not a classical history for angina chest pain or for a pulmonary embolus – this is on purpose, the learners are to deal with a grey area*). Derek has never had angina or a heart attack before. He is a smoker and has high blood pressure and high cholesterol for which he takes some tablets (they are lisinopril, atenolol and simvastatin, and you recognize these if the doctors says the names). You have taken all of these today. You also usually take aspirin but have not had it for the last 8 days – this is what the pre-op nurse instructed you before the surgery. Today at 6pm you were given a blood thinning injection under the skin of your tummy.

The core trainees will want to assess you, (there will be a monitor showing the heart rate and blood pressure), they will want to listen to the chest with a stethoscope and will want to look at the hip wound (it will be best for the scenario if you are prepared to take your shirt and trousers off – we put you in a patient gown. Please wear decent underwear as they will want to look at the hip wound).

The cause of the chest pain could be either cardiac (angina) caused in part by low blood count due to bleeding after the hip operation, or a pulmonary embolus (blood clot to the lung). Both of these are treated with blood thinning medicines (heparin) however their anxiety will be about giving these to a patient who is potentially bleeding. They will likely want to phone the medical registrar for advice. They may want to inform the orthopaedic registrar about the blood from the hip.

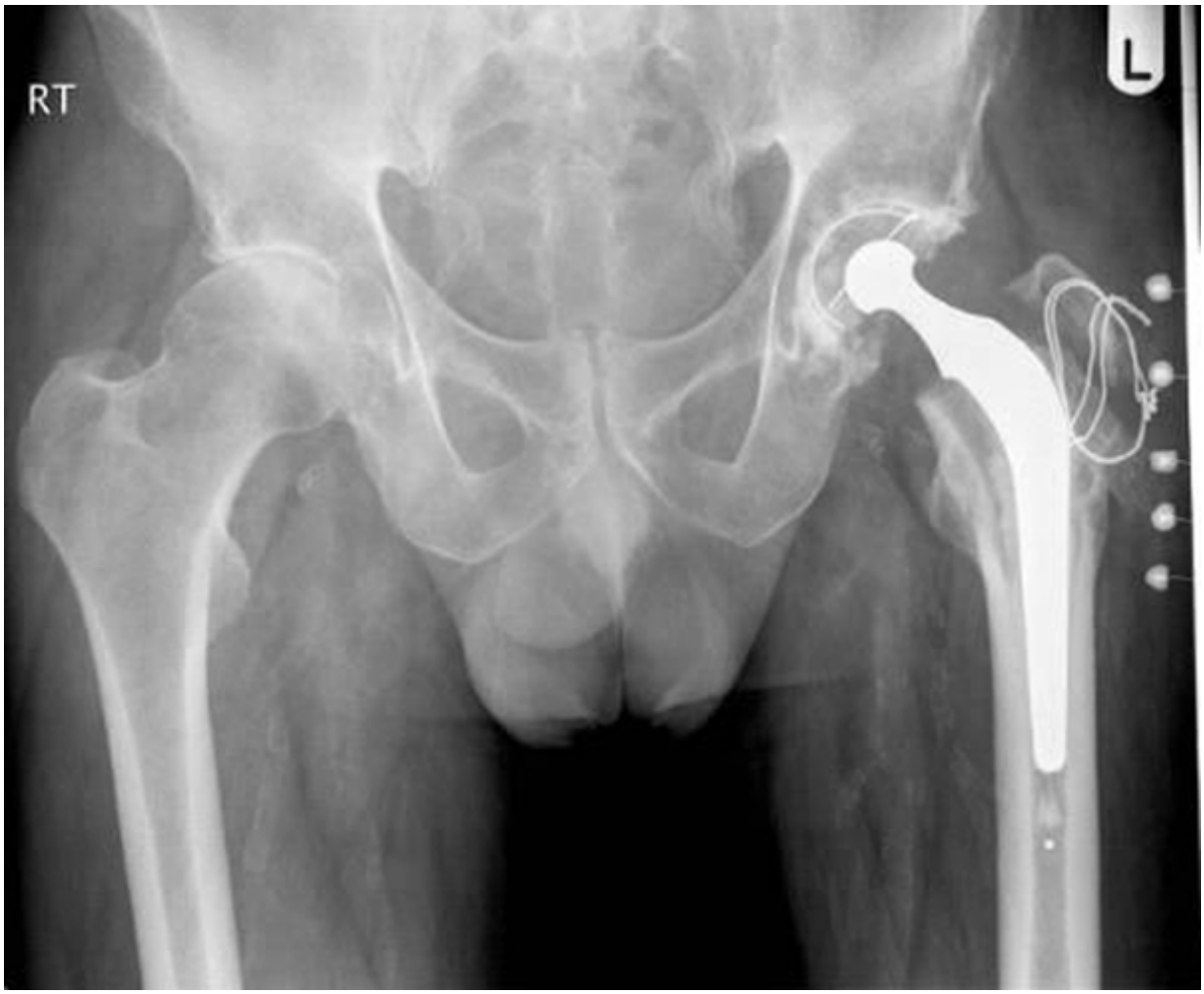
Feel free to ad lib about social things – wife or not, children, cats etc.
However, the exact wording about the chest pain is **very** important. If they ask you other questions which I have not covered here for example "Does the pain radiate anywhere?, have you had pain like this before?" the answer is no.

ADDITIONAL INFORMATION

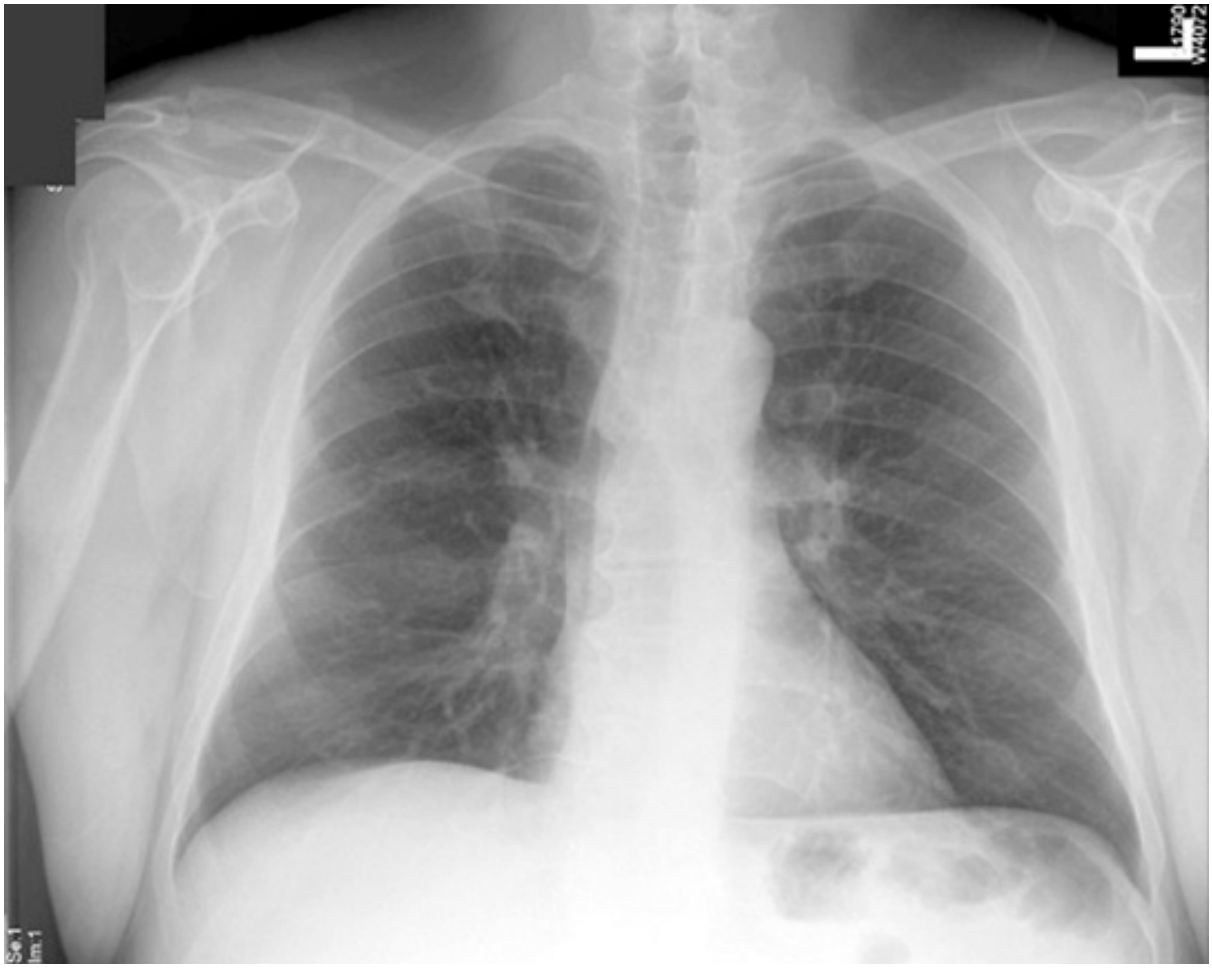
1. Drug History (prescribed on the drug chart):

Rivaroxiban 10mg OD
Lisinopril 5mg OD
Atenolol 50mg OD
Simvastatin 20mg ON
Tinzaparin 4,500 units ON

2. AP Pelvis XR



3. PA Chest XR



CONDUCT OF SCENARIO

Patient is alert and orientated

Observations do not change significantly during the course of the scenario:

INITIAL SETTINGS

A: Patent, self-ventilating in air
B: RR 22, SpO2 99%
C: HR 10, BP 95/65
D: GCS 15, pupils equal and reactive

ABG Results:

RADIOMETER ABL 9000 SERIES

ABL900 ED		00:00:00	08-12-2010
PATIENT REPORT	Syringe S195uL	Sample#	90.....

Patient ID	376232
Patient First Name	Derek
Patient Last Name	Branning
Date of Birth	?
Sample type	Arterial
Fi O_2	Air
Department	ED
Operator	

Blood Gas Values

pH	7.35	[7.340 - 7.450]
pCO2	6.1	[4.70 - 6.00]
pO2	11.4	[10.0 - 13.3]

Oximetry Values

ctHb	7.6 g/dL	[12.0 - 16.0]
sO_2	99%	[95.0 - 98.0]
FO_2Hb	93%	[94.0 - 99.0]
FCOHb		[-]
FHHb	%	[-]
FmetHb	%	[0.02 - 0.06]
Hctc	0.27%	

Electrolyte Values

cK+	5.6	[3.0 - 5.0]
cNa+	138	[136 - 146]
cCa^{2+}	1.24	[1.15 - 1.29]
cCl-	103	[98 - 106]

Metabolite Values

cGlu	9.2	[3.5 - 10.0]
cLac	1.9	[0.5 - 1.6]

Acid Base Status

cBase(Ecf)c	mmol/L
$cHCO^3$-(P,st)c	mmol/L

Notes
↑ Value (s) above reference range
↓ Value (s) below reference range

DEBRIEFING

Debriefing to be led by external observer - surgeon faculty

Use the actor to give feedback on communication skills

Medical registrar may also be useful to give feedback upon clinical management

POINTS FOR FURTHER DISCUSSION

- Use of rivaroxiban in surgical patients
- Any potential methods of reversing its action
- Greatest risks to patient
- Easily correctable factors
- Who else may be of help?
- What should you explain to the patient?

DEBRIEFING RESOURCES

British Orthopaedics Society Guidelines on Primary Total Hip Replacement

Primary **total hip replacement**
www.spitjudms.ro/_files/.../proteza%20**total**a%20de%20sold.pdf

SURGERY > IMMERSIVE SCENARIO 6 > POST-OP PATIENT

INFORMATION FOR PARTICIPANTS

KEY POINTS

- ABCDE approach
- Start important treatments immediately even when diagnosis is not yet clear
- Timely liaison with blood bank
- Identification of possible bleeding
- Clear communication with patient and explanation of treatment plan

PARTICIPANT REFLECTION

What have you learned from this experience? (Please try and list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?

PARTICIPANT FEEDBACK

Date of training session:.....

Learner grade:.....

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

How could this scenario be improved for future participants? This is especially important if you have ticked anything in the disagree/strongly disagree box.

FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?