



Case: Postnatal PE

Candidate brief

You are an F2 in the ED.

Please take a focused history from Meredith Grey, a 26-year old female presenting with SOB. She is accompanied by her 9-day old baby.

15 mins	<ol style="list-style-type: none">1. Please take a full history (7 mins)2. Counsel her with an appropriate management plan (4 mins)3. Viva with the examiner afterwards (4 mins)
10 mins	<ol style="list-style-type: none">1. Please take a full history (7 mins)2. Viva with the examiner afterwards (3 mins)

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Patient Brief

(Do not volunteer information unless asked)

Name: Meredith Grey

DOB: 05/11/1994 (26 years old)

Job: Primary School Teacher

Opening statement: "I feel like a tonne of bricks has landed on my chest *gasping for breath* "

HPC:

- Went to lay down in bed whilst baby was asleep and felt a sudden attack of breathlessness 4 hours ago.
- She stayed at home for a while, but the situation got worse and her husband insisted she be taken to A and E.

Associated symptoms

- Left sided chest pain with no radiations.
- Started about 4 hours ago and is sharp and stabbing in nature.
- She really cannot catch her breath and deep breathing (on **inspiration** particularly) often makes the pain worse.
- Meredith has taken some paracetamol and ibuprofen, but it is not working, and her pain is around 6/10.
- Her **legs feel sore** especially her **left** one which has been hurting for the last week following the birth of her 9-day old son. Her left leg has been aching and she thinks it is swollen and is very warm.
- **Has not been particularly mobile** as has not had time or energy to leave the house.
- Feels very unwell - 'am I going to die doctor?'
- No other symptoms.

Obs Hx

- 3 pregnancies in the past, all delivered vaginally and at term with no further complications.
- She is 9 days post-partum after giving birth to her 4th child. This was an **elective C-section at term**.
- Currently breastfeeding

Gynae Hx

Period: Last menstrual period: 9 months ago.

- Generally, very regular, non-painful and been having them since the age of 12.

Smears: up to date and normal.

STIs: nil.

Contraception: Previous used of an IUD during her late teenage years and early 20s. Plans to have another one fitted in 3 weeks.

PMHx – nil.

DHx – **NKDA**. Had LMWH for a few days in hospital but not given any on discharge.



FHx – Father died from MI aged 65 years. Mother suffers from (vascular) dementia.

SHx – Lives at home with husband (Derek), new-born baby and 3 other children. Ex-smoker previously smoked 10 cigarettes a day for 10 years.

Other information:

- Lips are tinged blue and she is clammy to the touch.
- Tachypnoeic
- Other systems review – normal

Ideas: Thinks it could be a heart attack given father's history.

Concerns: Worried she might not see her children grow up.

Expectations: Is hoping to return home with her 9-day baby as soon as possible.



Investigations findings (Provide it after history talking or to enquire candidate about differential diagnosis)

INVESTIGATIONS:

BMI – 45kg/m²



Examiner Brief

Candidate Brief: You are an FY2 in the Emergency Department.

Please take a focused history from Meredith Grey, a 26-year old female presenting with SOB.

15 mins	<ol style="list-style-type: none"> 1. Please take a full history (7 mins) 2. Counsel her with an appropriate management plan (4 mins) 3. Viva with the examiner afterwards (4 mins)
10 mins	<ol style="list-style-type: none"> 1. Please take a full history (7 mins) 2. Viva with the examiner afterwards (3 mins)

- **Please do not** provide any verbal or non-verbal feedback for the candidate. This includes nodding to correct answers and shaking head to wrong answers - particularly during the viva.
- **Please provide positive and negative feedback** (both verbal and written) at the end of the session once the examination is complete.
- The questions below are provided as a guide for discussion only. For viva, please ask questions surrounding the case and challenge the candidate where appropriate

Examiners will grade the performance across four domains: **(15 minute station)**

1. Clinical skills

2. Formulation of clinical issues

3. Discussion of management

4. Professional behaviours and patient centred approach

Positive descriptors	Marks
History/Clinical skills (15)	
Appropriate introduction (full name and role), elicit patient details and gain consent and invite consultation	2
Establishes onset, duration and nature of presenting complaint	2
Assesses pain – with SOCRATES as appropriate	2
Menstrual history – age at time of menarche, LMP, regularity of periods and characteristics	2
Gynaecological history – contraception , menopause, STIs, cervical screening	2
Obstetric history – Gravity, Parity, outcome of pregnancies	2
Establishes PE risk factors - postnatal, raised BMI, elective LSCS, reduced mobility	2
Past medical (surgical) history; drug history, family history, social history	1
Formulation of clinical issue (5)	
Summary and interpretation of clinical findings accurately	2
Good range of differential diagnoses	1
Viva	2
Discussion of management (4)	
Build patient concerns into plan and Justify choice of investigations	2



Demonstrate MDT approach – who to escalate to and when.		1
Viva (Management)		1
Professionalism and patient centred approach (5)		
Able to elicit patient ideas, concerns, expectations		1
Use empathic behaviour and language Explain accurately, uses everyday language and check for understanding		1
Professional communication to examiner as colleague		1
Simulated patient score [2 - very good, 1 - good, 0 - poor]		2

Viva Questions: (Please ask questions surrounding the case and challenge the candidate where appropriate); **The questions below are provided as a guide for discussion only.**

Resource: RCOG Thromboembolic Disease in Pregnancy and the Puerperium: Acute Management, Green-top Guideline No. 37b

1. Differential diagnosis	MI Sepsis (endometritis, mastitis) Pregnancy related cardiomyopathy
2. What are the risk factors for PE?	See table on page 8 (below) taken from: RCOG, Reducing the risk of VTE during Pregnancy and the Puerperium, Green-top guide No 37a.
3. What investigations are needed for the diagnosis of an acute PE?	Women presenting with an acute PE should have an ECG and CXR. A duplex ultrasound may be useful in women who also have signs of DVT. When CXR is abnormal and there is a suspicion of PE, a CTPA should be performed. Anticoagulant treatment should be initiated and continued until a PE has been excluded.
4. How would you manage a patient with PE?	Maternal resuscitation should be performed following the ABC principles. All cases should be escalated to obstetric and medical teams as well as appropriate analgesia provided. In stable patients treat with a LMWH (such as enoxaparin) whilst awaiting a CTPA. In unstable patients, ask for senior help early. An urgent portable echocardiogram or CTPA should be arranged within 1 hour of presentation. IV unfractionated heparin is preferred in acute cases wherein there is also cardiovascular compromise and in immediate cases, thrombolysis should be considered, this may be through the use of streptokinase, urokinase or alteplase.



5. What are the diagnostic criteria for PE?

Wells Score (taken from NICE guideline NG158)

Table 2 Two-level PE Wells score

Clinical feature	Points
Clinical signs and symptoms of DVT (swelling of leg, swelling and pain with palpation of the deep veins)	3
An alternative diagnosis is less likely than PE	3
Heart rate more than 100 beats per minute	1.5
Immobilisation for more than 3 days or surgery in the previous 4 weeks	1.5
Previous DVT/PE	1.5
Haemoptysis	1
Malignancy (on treatment, treated in the last 6 months, or palliative)	1
Clinical probability simplified score	Points
PE likely	More than 4 points
PE unlikely	4 points or less

In this case score = 4.5



Table 1. Risk factors for venous thromboembolism in pregnancy and the puerperium

See also Appendix I and Appendix II		
Pre-existing	Previous VTE	
	Thrombophilia	<i>Heritable</i> Antithrombin deficiency Protein C deficiency Protein S deficiency Factor V Leiden Prothrombin gene mutation <i>Acquired</i> Antiphospholipid antibodies Persistent lupus anticoagulant and/or persistent moderate/high titre anticardiolipin antibodies and/or β_2 -glycoprotein 1 antibodies
	Medical comorbidities e.g. cancer; heart failure; active SLE, inflammatory polyarthropathy or IBD; nephrotic syndrome; type I diabetes mellitus with nephropathy; sickle cell disease; ⁴⁹ current intravenous drug user	
	Age > 35 years	
	Obesity (BMI \geq 30 kg/m ²) either prepregnancy or in early pregnancy	
	Parity \geq 3 (a woman becomes para 3 after her third delivery)	
	Smoking	
	Gross varicose veins (symptomatic or above knee or with associated phlebitis, oedema/skin changes)	
	Paraplegia	
	Obstetric risk factors	Multiple pregnancy Current pre-eclampsia
Caesarean section Prolonged labour (> 24 hours) Mid-cavity or rotational operative delivery Stillbirth Preterm birth Postpartum haemorrhage (> 1 litre/requiring transfusion)		
New onset/transient <i>These risk factors are potentially reversible and may develop at later stages in gestation than the initial risk assessment or may resolve and therefore what is important is an ongoing individual risk assessment</i>	Any surgical procedure in pregnancy or puerperium except immediate repair of the perineum, e.g. appendicectomy, postpartum sterilisation Bone fracture	
	Hyperemesis, dehydration	
	Ovarian hyperstimulation syndrome (first trimester only)	Assisted reproductive technology (ART), in vitro fertilisation (IVF)
	Admission or immobility (\geq 3 days' bed rest)	e.g. pelvic girdle pain restricting mobility
	Current systemic infection (requiring intravenous antibiotics or admission to hospital)	e.g. pneumonia, pyelonephritis, postpartum wound infection
	Long-distance travel (> 4 hours)	