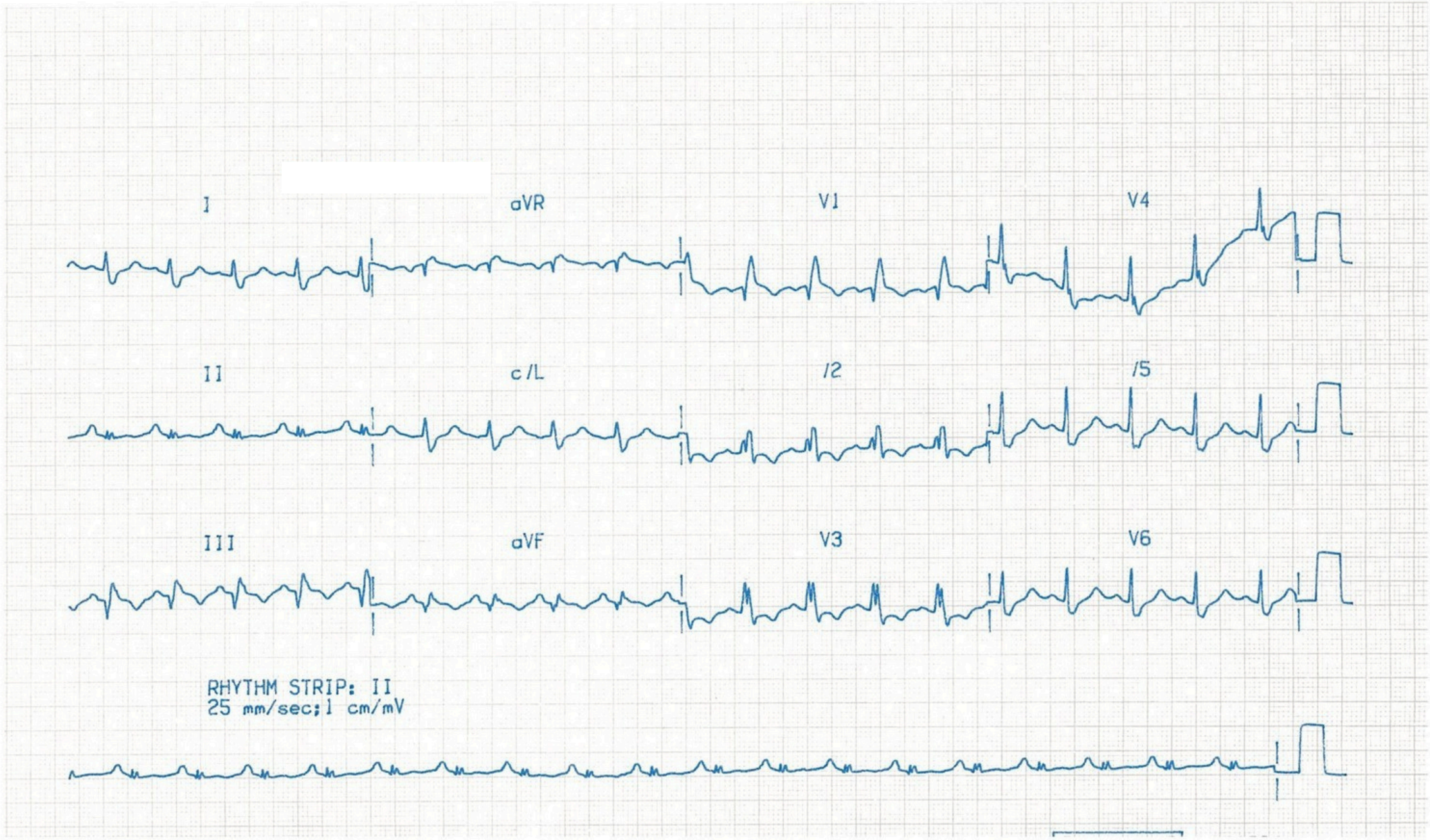
TRAUMA CASE OF THE WEEK

Case Seven

A patient on STU has been admitted following a pedestrian vs car event, with pelvic fractures and a tib/fib # on one leg. She is 71, and normally in pretty good health. She undergoes ORIF, and commences prophylactic Clexane at 48 hours. She is sitting on a commode on day 3 and straining, when she suddenly collapses and has a brief syncope. When she comes to, she complains of chest discomfort and marked shortness of breath. She is tachycardic at 110 (76 pre-collapse) and is hypotense 80/60.Her sats on RA are 91%, and her chest is clear.

- Interpret her ECG in the clinical context
- What therapies might we consider?


I
aVR
V1
V4
II
c/L
/2
/5
III
aVF
V3
V6
RHYTHM STRIP: II
25 mm/sec; 1 cm/mV

The ECG shows a sinus tachycardia at a rate of 108bpm with a right bundle branch block pattern and T wave inversion in leads V1 –V3, III & aVF. Lead 1 has a large S wave, and in lead III there is a deep Q wave and the already noted T wave inversion. Taken together these ECG changes all strongly suggest acute right heart strain. In the clinical context of brief collapse and persistent shortness of breath the most likely diagnosis is a pulmonary embolus, and this lady is certainly at high risk because of her lower limb fractures. Prophylactic Clexane reduces the risk of DVT/PE, but not completely!

Although most patients with a PE will have some sort of ECG abnormality, most of the ECG changes are neither sensitive or specific. Perhaps the most sensitive and specific ECG change (which this patient has) is the simultaneous presence of an inverted T waves in both anterior and inferior leads. This pattern is very unlikely in myocardial ischaemia which is probably the most important differential here. S1Q3T3 is only likely to be seen in moribund patients. Although the diagnosis would likely be made here with a CTPA, the next issue is the haemodynamic significance of the PE. Evidence of right heart strain would argue for more aggressive treatment strategies such as thrombolysis (tricky in a trauma case!) or thrombectomy, rather than just simple anticoagulation. An echocardiogram would provide objective evidence of right heart strain. Elevated troponin or BNP are also markers of this.