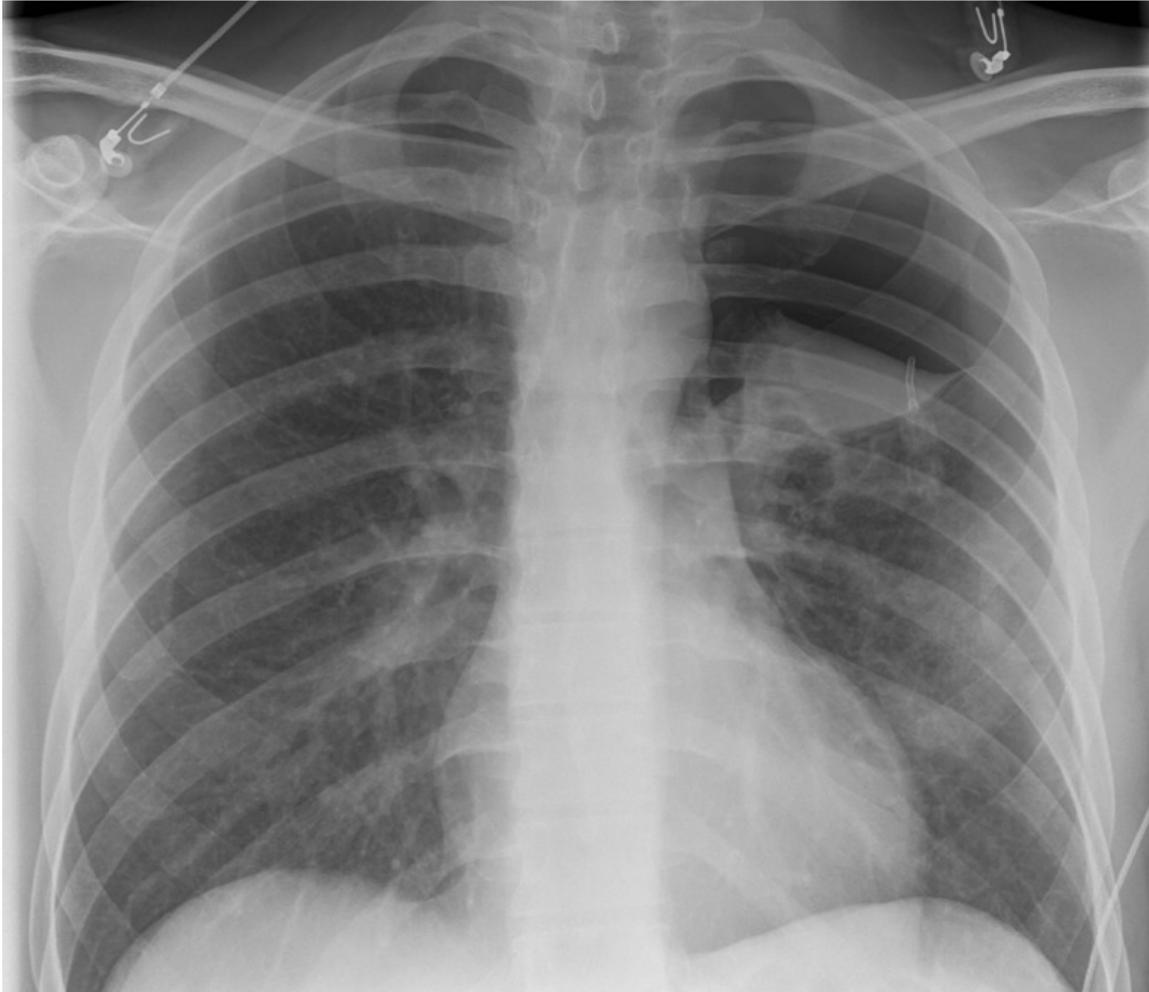


## VAQ 2009.1.2 (XR)

A previously well 23 year old man is brought to your Emergency Department acutely short of breath after developing left sided chest pain at work.

On arrival, he appeared pale and sweaty and was hypotensive.

A CXR was taken immediately after a procedure was performed to stabilise his condition. His vital signs are now normal.



- Describe and interpret his Chest X-ray (30%)
- Outline your treatment options (70%)

This chest radiograph demonstrates a left needle thoracostomy with some residual pneumothorax, which in the clinical context suggests a treated tension pneumothorax. This is an immediately life threatening condition, rare as a spontaneous event as suggested in this case, and he will require an intercostal drain and hospital admission.

More conservative approaches for spontaneous pneumothorax are not appropriate after tension.

### CXR

not labelled – looks erect PA

#### Equipment

ECG dots and lead visible

IV cannula in 2nd ICS, in midclavicular line

#### Lung fields

left apical pneumothorax seen

adjacent area of opacity, roughly triangular

density implies soft tissue (completely collapsed area of lung) or fluid (no horizontal meniscus seen)

- nonspecific opacification left midzone
  - post-expansion pulmonary oedema
  - consolidation
  - area of abnormal lung contributing to pneumothorax
- remainder of lung fields unremarkable

#### Heart

- unremarkable
- normal size

#### Mediastinum

- unremarkable
- in midline

#### Pleurae

- unremarkable, costophrenic angles not visible however

#### Bones

- unremarkable

#### Extrathoracic

- unremarkable

#### Overall

- Needle decompression of tension pneumothorax
- Area of complete collapse
- Degree of post-expansion pulmonary oedema or underlying consolidation

#### **Treatment options**

For simple pneumothorax a range of options exist

- conservative approach
- aspiration
- formal drainage

These depend on pneumothorax size (large v small), symptoms, and whether primary or secondary

In this context (tension pneumothorax)

- Conservative treatment inappropriate
- Requires chest drain

- Small bore for patient comfort (consider single-lumen central line, various commercial options)

- Insertion at 5th ICS, anterior to midaxillary line in 'triangle of safety'

Admission with underwater seal drain under respiratory medicine

Followup ?pleurodesis if not first spontaneous pneumothorax