Acute chest pain with suspected pneumothorax

Non-trauma patient

Can tolerate erect PA CXR

Erect inspiratory PA CXR

Pneumothorax confirmed

Urgent treatment

Cannot tolerate erect PA CXR

Cannot exclude pneumothorax

CT thorax

No pneumothorax

Further workup for acute chest pain

Trauma patient

Cannot tolerate erect PA CXR
CH 3  Acute chest pain with suspected pneumothorax

REMARKS

1  Plain radiograph
   1.1  Posterior-anterior (PA) erect chest X-ray (CXR) in inspiration is recommended for
        the initial evaluation of suspected pneumothorax. In uncertain cases, such as in the
        presence of bullous lung disease, CT is preferred.
   1.2  Lateral chest radiograph may provide additional information when a suspected
        pneumothorax is not confirmed on PA CXR but this is not routinely performed in
        everyday clinical practice.
   1.3  Expiratory CXR is not thought to confer additional benefit in the routine assessment
        of pneumothorax.
   1.4  Supine and lateral decubitus chest radiographs are mostly performed for trauma
        patients who cannot be safely positioned for erect PA view but these have been
        superseded by CT.

2  US
   2.1  US only plays a subsidiary role in diagnosing pneumothorax and its efficacy highly
        depends on operator experience. US thus should not be a routine investigation.

3  CT
   3.1  CT is the gold standard for detection of small pneumothoraces and for size estimation,
        and is recommended for uncertain or complex cases. It is also useful in detecting
        pneumothorax in the presence of bullous lung disease or surgical emphysema,
        and can also identify aberrant chest drain placement and other concomitant lung
        pathology.

REFERENCES

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