Worcestershire Acute Hospitals NHS Trust

Pneumothorax

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Key Documents Owner:	Dr Onyon/ Dr Watson | Consultant Paediatrician
Approved by:	Paediatric Quality Improvement meeting
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Key Amendments

Date	Amendment	Approved by
9th Feb 24	No changes to document	Paediatric Guideline Review

The following guidance is taken from the Partners In Paediatrics (PIP)

PNEUMOTHORAX

RECOGNITION AND ASSESSMENT

Symptoms and signs

Tension pneumothorax (very rare)

- Severe dyspnoea
- Circulatory compromise
- Trachea +/- apex beat displaced
- Hyperresonant percussion note
- Absent or decreased breath sounds on affected side

Treat immediately

- Give oxygen 15 L/min with mask with reservoir bag
- Insert a large bore cannula (14 or 16 G) ≥4.5 cm in length into 2nd anterior intercostal space, midclavicular line
- Insert chest drain mid axillary line 5th intercostal space
- Remove emergency cannula when bubbling in underwater seal system confirms intercostal tube system functioning

Spontaneous pneumothorax

Symptoms may be minimal
Sudden onset, occasionally at rest
Chest pain (unilateral)
Dyspnoea
Resonance on percussion, with reduced vocal fremitus and breath sounds (if moderate-large)

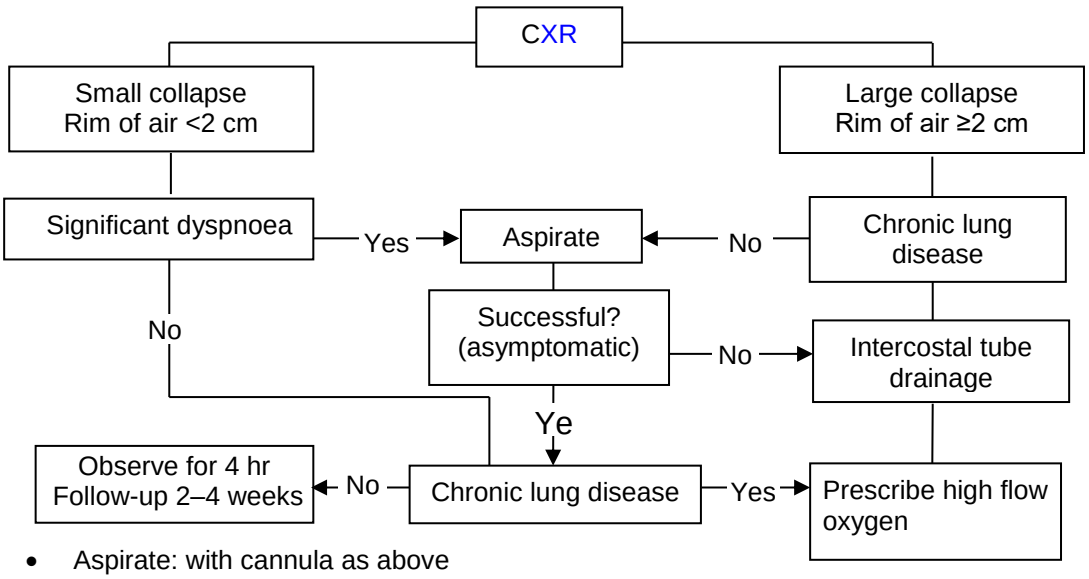
Investigations

PA CXR
If findings are unclear on PA, lateral (if possible, decubitus) film may help

- If findings obscured by surgical emphysema or complex bulla disease, CT scan may help

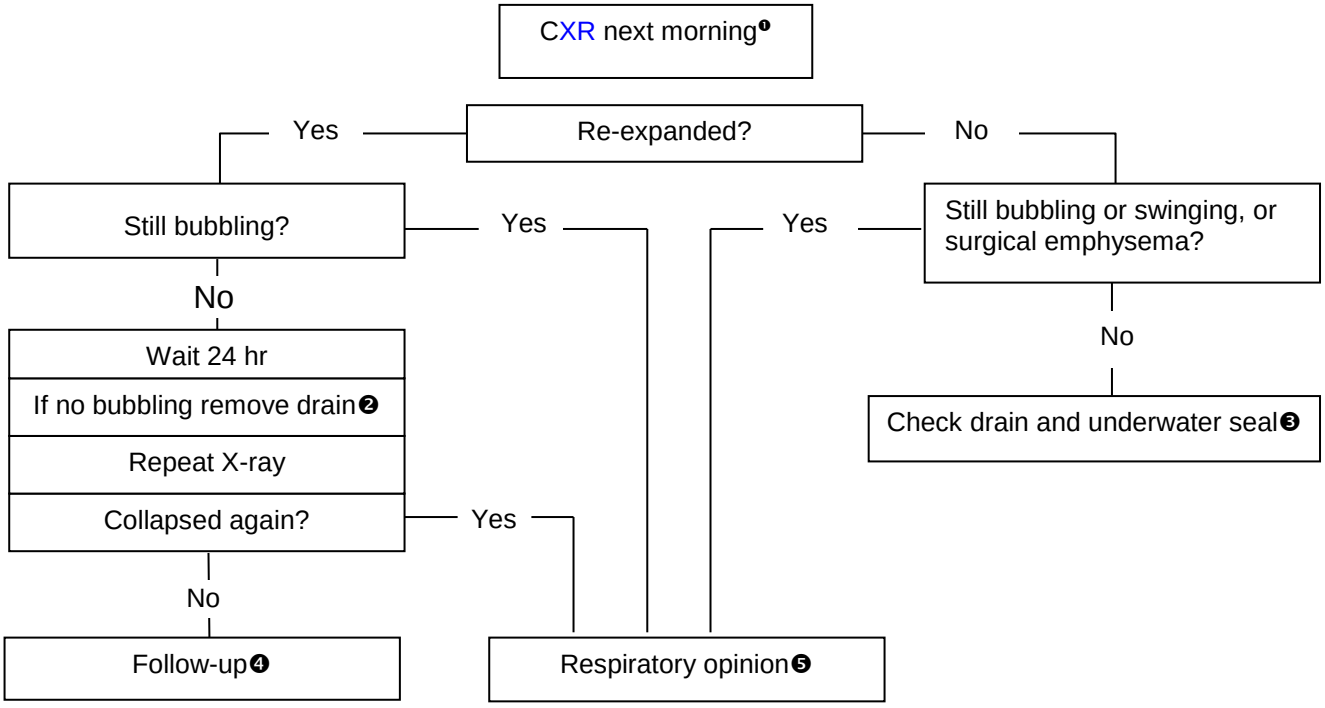
BEWARE: suspected basal pneumothorax usually implies a bulla. CT scan will differentiate bullae from pneumothorax

IMMEDIATE TREATMENT



- Aspirate: with cannula as above
- Suction not routinely required for chest drain
- Discuss all with respiratory paediatrician within 24 hr

Management of intercostal drains



Do not clamp chest tube unless advised by respiratory paediatrician or thoracic surgeon. If clamped and chest pain or breathless unclamp immediately

- **1: CXR**
- keep underwater seal below level of chest at all times

2: Removal of chest drain:
bubbling stopped for at least 24 hr
cut drain-securing suture
withdraw tube while patient holds breath in expiration
close wound with Steri-Strips™
3: Check drain:
if lung not re-inflated and no bubbling in underwater bottle: Try to remove **block** or **kink**
if unsuccessful, remove drain. Insert new drain through clean incision
4: Follow-up:
in 7–10 days then with respiratory paediatrician
patient given discharge letter and written advice to return immediately if deteriorates
no air travel until CXR changes resolved
5: Respiratory paediatrician's opinion:
if no re-expansion consider air leak, displaced/blocked tube, bronchopleural fistula, underlying pulmonary disease
use high volume/low pressure suction, 1–2 kPa/Barr, (8–16 mmHg; 8–20 cm H_2O)

- if Altitude™ chest drainage system used, set wall suction to 160 mmHg/22 kPa and set dial on drainage system to 20

early thoracic surgery. Refer when pneumothorax fails to resolve after 5 days of above management or after 3 days if patient has chronic lung disease