Management of Spontaneous Pneumothorax
Respiratory

1 Purpose
To outline the management of patients in PAH ED with the diagnosis of spontaneous pneumothorax.

2 Procedures
Step 1 – Determine size of pneumothorax
Measure the size of the pneumothorax on CXR. This is done by taking a measurement from the outer lung to the inner chest wall at the site of the maximum size of the pneumothorax.

Step 2 – Determine if a primary or secondary spontaneous pneumothorax
Determine whether the spontaneous pneumothorax is primary or secondary. A secondary pneumothorax is one that occurs in a patient with an underlying lung disease.

A primary pneumothorax is more likely if any of the following is present:

- Age < 50 yo
- No smoking history
- No past history of SOB or effort intolerance
- No known respiratory disease
- Only minor SOB with the pneumothorax

A secondary pneumothorax is more likely if any of the following is present:

- Age >50 yo
- Smoking history
- Past history of SOB or effort intolerance
- Past history of respiratory disease
- SOB on minor exertion with the pneumothorax
- Respiratory rate > 22 / minute
Step 3 – Management

For Primary Spontaneous Pneumothorax:

If pneumothorax LESS THAN 2cm:

- Observe in ED (SSW)
- Provide analgesia
- High flow oxygen
- Repeat CXR in 4-6 hours
- If no increase in size and patient’s symptoms have settled – discharge home, advising patient to return to PAH ED if any increase in symptoms
- Refer back to GP for review and repeat CXR within 2 weeks
- Refer to Respiratory OPD with a new case appointment for ongoing follow-up
- Advise no strenuous activity, no flying or scuba diving

If pneumothorax GREATER THAN 2cm:

The degree of clinical compromise / symptoms is of more importance than the size of the pneumothorax in determining a management strategy. Consider the extent of the patient’s symptoms (i.e. respiratory dysfunction/SOB) in deciding whether to insert a pneumothorax drainage catheter, especially if only just greater than 2cm.

If unsure discuss with the ED Consultant and / or the Respiratory Unit.

(a) If > 2cm AND a previous history of spontaneous pneumothorax on the same side:

Admit under the Respiratory Unit for consideration of a delayed VATS procedure. Discuss with the Respiratory Consultant regarding this plan and the need for a pneumothorax drainage catheter in the meantime.

(b) Otherwise:

Use a Wayne Pneumothorax Set (14.0Fr catheter)

Insert the catheter using a Seldinger technique (ensure aseptic technique, use of local anaesthetic and if appropriate procedural analgesia / sedation) & aspirate through catheter

- If > 2.5 L aspirated - attach to an underwater drainage system and admit under Respiratory Unit
• If < 2.5 L aspirated – cap the catheter and leave in situ
  ▪ Observe for 6 hours and then repeat the CXR.
  ▪ If recurrence of pneumothorax – attach the catheter to an underwater drainage system and admit under Respiratory Unit
  ▪ If no recurrence of pneumothorax:
    • Remove catheter
    • Discharge home & advise to return to PAH ED if an increase in any symptoms
    • Refer back to GP for review and repeat CXR within 2 weeks
    • Refer to Respiratory OPD with a new case appointment for ongoing follow-up
    • Advise no strenuous activity, no flying or scuba diving

For Secondary Spontaneous Pneumothorax:

All patients with secondary spontaneous pneumothorax require admission under the Respiratory Unit for observation.

• If minimal symptoms (i.e. no or minimal SOB) and size < 2cm – observe only

• If symptomatic (i.e. SOB) & size is > 2 cm – insert a Wayne Pneumothorax Set or a small bore ICC (20 Fr)

If in doubt regarding the size or symptomatology and whether to insert an ICC discuss with the ED Consultant and / or Respiratory Unit.

3 Additional Reading