

Practical Procedures: Pleurodesis

The Role of pleurodesis:

- Chemical pleurodesis with “talc slurry” to obliterate the pleural space is recommended when a patient is not suitable for VATS pleurodesis (video-assisted thoroscopic surgery)
- It should only be performed under the supervision of a respiratory team
- Pleurodesis is used to prevent the re-accumulation of pleural effusions
- It is mainly used in patients who have proven recurrent malignant effusions but is sometimes used in renal failure and heart failure
- It is used to prevent the need for recurrent drainage of re-accumulating effusions and thus improve the quality of a patient’s life

Equipment required for pleurodesis:

- Presence of a patent intercostal drain (ICD) with a three way tap attached
- 25ml of 1% lignocaine
- Sterile Talc 4g
- 40ml sterile saline
- 10ml sterile saline
- Analgesia
 - Give as a pre medication (e.g. paracetamol and oramorph – avoid NSAIDS)
- Aseptic field and sterile gloves

Contraindications to pleurodesis:

- Lack of consent
- Greater than 150ml drainage per day ongoing through chest drain or chest x-ray that shows a large residual fluid volume.
- Suspicion of pleural infection

The procedure:

- Consent the patient for:
 - Generic risks
 - Bleeding, infection, pain, damage to surrounding structures
 - Failure. Even in optimal conditions chemical pleurodesis is only successful in 80% of cases and rarely are “optimal conditions” achieved
 - Specific risks
 - Fever
 - Acute respiratory distress syndrome (ARDS) – risk less than 1%
- Ensure the chest drain (already in place) is correctly positioned with a 3-way tap on the end
- Don sterile gloves, place sterile dressing under ICD 3-way tap, remove cap to 3-way tap and clean.
- Insert local anaesthetic syringe into 3-way tap and only rotate tap to “open” when syringe is in place
 - Opening the tap with the bung removed and no syringe in its place can lead to the introduction of air into the chest cavity
- Instil lignocaine into chest drain and turn 3-way tap off
 - Remember maximum dose of lignocaine is 3mg/kg. Patients with malignant effusions are often cachetic so be careful not to exceed the maximum dose
- Mix 40ml of Normal saline with 4g of talc. Agitate the solution. It is very difficult to dissolve the talc and once the slurry is made so do not stop moving the syringe or the talc will precipitate out.

- Instil the talc slurry into the pleural cavity via the ICD 3 way tap and flush immediately with 10ml of saline
- Close the drain and leave closed for 1 hour

Post- pleurodesis:

- Further analgesia may be required but do not use NSAIDS as these can inhibit the inflammatory response within the pleural cavity which is needed for successful pleurodesis
- Open the drain after one hour
- Chest X-ray at 12-72 hours to ensure no pneumothorax or fluid accumulation
- If chest X-ray is ok and drain has not drained any further pleural fluid then remove the drain
- Follow up is required in chest clinic at 4-6 weeks
- If the pleural effusion was secondary to mesothelioma, oncology must be contacted to discuss whether local radiotherapy is required after drain removal to prevent seeding

In the event of failure of talc pleurodesis:

- Seek senior help and consult the respiratory team
- Repeat chest X-ray
- Note that drain may be blocked or need to be re-sited
- Refer patient for VATs if medically fit