Online Appendix 12 Intrapleural treatment guides

Contents

A. Intra-pleural blood patch pleurodesis[1-6]

Ensure the following:

- There has been a persistent air leak for more than 5 days
- The patient is not fit for surgical intervention
- Informed consent is completed, including the risk of intrapleural infection (up to 9%) and the potential for blockage of the drain
- The chest drain is patent and flushes easily
- Ensure a further drain is ready for insertion if required (blockage)

- If not already present, attach a three-way tap to the drain tubing if possible

- Aspirate 50-100ml of venous blood from the patient [(1-6)]

- Using aseptic technique, inject the blood via the three-way tap into the pleural space, immediately followed by a 0.9% saline flush

- Raise the chest drain tubing above the level of the patient to prevent the blood draining out, or temporarily clamp the drain with the three way tap, if it is clinically safe to do so and the patient is supervised

- After 30 minutes, ensure the three-way tap is opened and continue with free drainage

- Observations should be completed immediately post-procedure and again at 30 minutes. The patient should be supervised to make sure there are no symptoms or signs of worsening pneumothorax or blockage of the chest drain

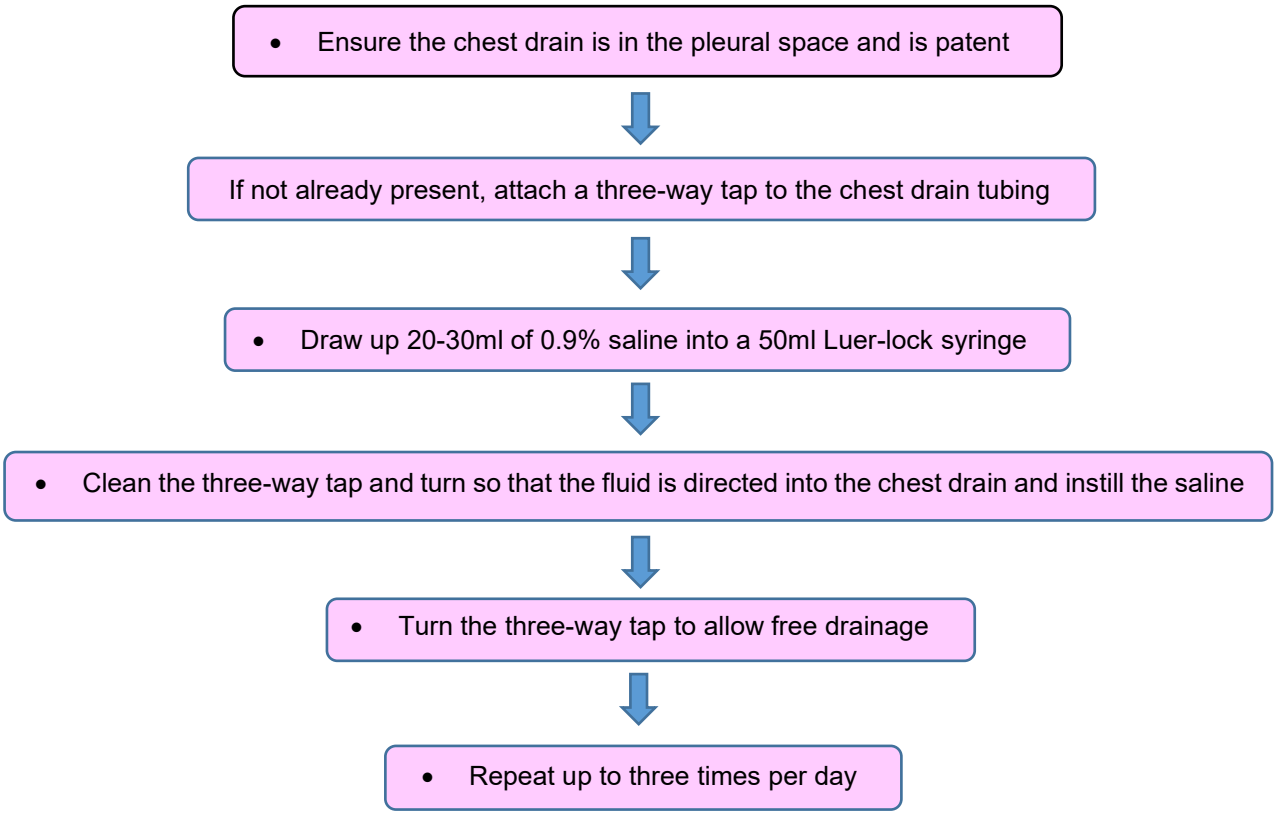
Equipment list

Cleaning wipe

1-2 50 ml Luer lock syringes

0.9% saline 50ml for flush

B. Intra-pleural saline chest drain flush



Equipment list for each flush

Sterile gloves

Cleaning wipe

50 ml Luer lock syringe

30 ml 0.9% saline

C. Intra-pleural fibrinolytics[7-10]

Ensure the following:

- Clinical evidence of pleural infection
- No sensitivity to fibrinolytics
- No evidence of stroke, major haemorrhage or major trauma
- No major surgery within 5 days
- The chest drain is in the pleural space and is patent

- If not already present attach a three-way tap to the chest drain tubing

- Mix 10 mg alteplase[1,2,4] (tissue Plasminogen Activator) with 30ml 0.9% saline
- Mix 5 mg DNase [1,2,4] with 30 ml 0.9% saline
- Instill the alteplase followed by the DNase and then a saline flush
- Clamp the drain for 1 hour after each instillation

- Reopen the three way tap and leave on free drainage

- Repeat this process twice daily for a total of 3 days

Equipment list for each instillation

10 mg alteplase	Dressing pack
5 mg DNase	Sterile gloves
100 ml 0.9% saline	Cleaning wipe
3x 50 ml Luer lock syringes	Drawing up needle

D. Intra-pleural saline irrigation[11]

Ensure:

- Clinical evidence of pleural infection
- The chest drain is in the pleural space and is patent

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- If not already present, attach a three-way tap to the chest drain tubing

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- Attach a giving set to a 250 mL bag of 0.9% saline and suspend from a drip stand. Attach the giving set to the three way tap and administer the saline into the pleural space by gravity.
- After one hour, disconnect the giving set and turn the three-way tap to allow free drainage

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- Apply thoracic suction following the irrigation (up to -20 cmH_2O)

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- Repeat this process three times per day for a total of nine irrigations

Equipment list for each irrigation

Sterile gloves

Cleaning wipe

250 ml bag of 0.9% saline

Thoracic suction

E. Intra-pleural talc slurry pleurodesis[12]

Ensure the following:

- Full or >50% lung re-expansion confirmed on CXR, and less than 250 ml / hr drainage over 24 hours
- The chest drain is in the pleural space and flushes easily
- A three-way tap is fitted to the chest drain tubing
- Informed consent is completed, including pain, failure to achieve pleurodesis and any risk of pneumonitis

- Consider premedication 15 minutes before the pleurodesis where clinically appropriate e.g. 5-10mg of oral morphine sulphate solution

- Use 50ml 0.9% saline to mix up 4-5g graded sterile talc into a slurry (1)

- Instill lignocaine solution via the three way tap into the pleural space (3 mg/kg, maximum 250 mg e.g. 20 ml 1% solution for a 60 kg person) immediately followed by the talc slurry

- Clamp the tube with the three-way tap for 1-2 hour and then reopen the tap and leave on free drainage

- Remove the intercostal tube within 24-48 hours in the absence of excessive fluid drainage (>150 ml/day)

Equipment list

4-5 g Sterile dry powder medical talc

50 ml Luer lock syringe

Dressing pack

Sterile gloves

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