

GUIDELINE FOR THE PROCEDURE OF PLEURODESIS WITH TALC SLURRY

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and/or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION

Pleurodesis aims to provoke a rapid, widespread inflammatory reaction of the pleura, which heals by fibrosis. The resulting adhesion of the pleural membranes with abolition of the space between them prevents re-accumulation of fluid or air.¹

The procedure requires preparation of the talc slurry on the ward, intrapleural instillation, and post-procedural monitoring of the patient. The main side effect is pain and adequate local anaesthesia and analgesia are therefore essential and included within the scope of this guideline.

The patients covered by this guideline are patients with a diagnosis of one of the following:

- Recurrent pneumothorax
- Malignant pleural effusion

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS :

Medical elements of this procedure to be carried out by medical doctor who has been assessed as competent in the procedure, Registrar or Heather Lloyd (Respiratory Nurse Practitioner).

Nursing elements of the procedure to be carried out by a registered nurse.

Lead Clinician(s)

Dr C. Hooper

Consultant Physician
(Respiratory Medicine – WRH)

Guideline approved for republication by
Accountable Director:

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14th January 2021

This is the most current document and is to be used until a revised version is available

Key amendments to this guideline

Date	Amendment	By:
06/01/2004	Guideline approved by	CEC
02/11/2005	Guideline approved by	MSC
July 2008	Document reviewed	Clinical Lead
May 2013	Document reviewed and amended	Heather Lloyd Dr C. Hooper
August 2015	Document extended for 12 months as per TMC paper approved on 22 nd July 2015	TMC
December 2016	Document extended for 12 months as per TMC paper approved on 22 nd July 2015	TMC
November 2017	Document extended whilst under review	TLG
December 2017	Sentence added in at the request of the Coroner	
March 2018	Document extended for 3 months as approved by TLG	TLG
June 2018	Document extended for 3 months as approved by TLG	TLG
14 th January 2018	Document reviewed and amended. Named member of staff changed to nurse practitioner	Dr C Hooper

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Introduction

Pleurodesis aims to provoke a rapid, widespread inflammatory reaction of the pleura, which heals by fibrosis. The resulting adhesion of the pleural membranes with abolition of the space between them prevents re-accumulation of fluid or air. ¹

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Procedure

Medication to be prescribed on Stat Section of In-Patient Chart

- Sterile Talc ("Steritalc") 4g
- Lignocaine 1% (3mg/kg-maximum dose 250mg/25mls)
- Morphine sulphate 5-10mg IV or orally

Equipment Required

- 3 x 50ml luer lock syringes
- Sterile gloves
- 7 x 10ml 0.9% sodium chloride ampoules/100ml bag of 0.9% sodium chloride

Pre-Talc Instillation

- Contact the pharmacy department to arrange the supply of sterile talc.
- Drain the effusion with a chest tube & confirm drainage is complete and the lung fully expanded by X-Ray and thoracic ultrasound (pleurodesis is unlikely to succeed if the lung does not fully expand after drainage, and other approaches such as a pleural catheter may then be more appropriate). The pleura should be drained to dryness (less than 150ml/24 hours) before pleurodesis.

PROCEDURE	RATIONALE	WHO
Inform patient about the procedure and provide reassurance. Confirm no known allergic reaction to lidocaine.	To gain patient's consent and co-operation.	Doctor or nurse practitioner with documented competence in the procedure
Prescribe pre-meds and talc as listed above on the "stat" section on front of drug chart.		Doctor or nurse practitioner with documented competence in the procedure
Ensure patient is in bed (sitting up or lying down).	To achieve the most comfortable position.	Staff Nurse
Record baseline observations: Temperature, Pulse, Blood pressure, Respiration rate, Oxygen saturation.	To enable assessment for change in patient's condition during and after the procedure.	Staff Nurse
Give morphine sulphate orally 30-60 minutes prior to procedure & intrapleural Lidocaine 5 minutes prior to instillation of talc slurry.	To aid pain relief and/or relaxation, and locally anaesthetise the pleura.	Doctor or nurse practitioner with documented competence in the procedure
Clamp chest drain via 3 way tap	To retain anaesthetic.	Doctor or nurse practitioner with documented competence in the procedure

Preparation of Talc Slurry

Preparation of talc slurry: **must be immediately before administration**

- Using a white needle draw up 50ml of 0.9% sodium chloride into a 50ml syringe (luer lock) and inject 20ml of this into the talc bottle, through the bung in the top of the bottle.
- Shake the talc bottle vigorously to encourage dispersal of the talc into the 0.9% sodium chloride.
- Draw the talc/sodium chloride mixture from the talc bottle into the syringe still containing the remaining 30mls 0.9% sodium chloride.
- A talc slurry will not yet have been achieved. To ensure complete formation of a slurry, repeat the injection of 20ml of the talc mixture from the syringe back into the

talc bottle, shake vigorously. Then draw back the contents of the bottle into the syringe and continue to repeat until a talc slurry is produced.

5. Ensure that the syringe containing the talc slurry is continually agitated to avoid sedimentation.
6. Instil the talc slurry according to the procedure below:

Preparation of post-dose flush:

- Draw up 20ml 0.9% sodium chloride into a 50ml luer lock syringe.

Instillation of The Talc Slurry

Patient position: lateral with affected side uppermost

PROCEDURE	RATIONALE	WHO
Ensure chest drain 3 way tap is closed to its external port before attaching talc slurry-filled syringe.	To prevent air leakage.	Doctor or nurse practitioner with documented competence in the procedure
Attach the talc slurry-filled syringe to the 3 way tap, then open to the patient (closed to chest drain bottle)	To allow the talc to be introduced into the chest drain.	
Instil the talc slurry intrapleurally via the chest drain RAPIDLY.	To avoid sedimentation.	
Close 3 way tap to chest drain and external port and change talc syringe to sodium chloride-filled syringe.	To enable chest tube to be flushed.	
Open 3 way tap to the patient and flush with 20ml saline.	To ensure residual talc is delivered intrapleurally.	
Close 3 way tap to the underwater seal drain bottle. Leave closed for 1 hour.	To retain the talc in the pleural space and allow the inflammatory reaction to occur.	

Post-Instillation Monitoring

PROCEDURE	RATIONALE	WHO
<p>Monitoring:</p> <ul style="list-style-type: none"> ▪ Oxygen sats ▪ Respiratory rate ▪ Blood pressure ▪ Temperature ▪ Pulse ▪ Pain score (consider additional morphine doses if necessary) <p>Record all the observations every 30 minutes during the procedure and for the 2 hours post-procedure. Contact doctor immediately if any profound change in observations.</p>	<p>To assess for change in patient's condition during the procedure and alleviate pain where necessary.</p>	<p>Staff Nurse</p>
<p>Ensure patient can reach nurse call bell at all times.</p>	<p>To enable patient to request pain relief when necessary.</p>	<p>Staff Nurse</p>
<p>After 1 hour, unclamp the chest drain and accurately record drainage over the next 24-48 hours. Leave the drain in situ until drainage slows to less than 150ml during 24 hours.</p>	<p>To allow further drainage from the intrapleural space and allow more pleural adhesions to form. The drainage over the next 24 to 48 hours should be minimal if the procedure has been successful.</p>	<p>Staff Nurse</p>

Outcome

Success of the procedure is determined by the absence of re-occurrence of the effusion/pneumothorax, as assessed by clinical examination or chest radiograph.

APPENDIX 1: GUIDELINE FOR THE PROCEDURE OF PLEURODESIS WITH TALC SLURRY: DOCTOR'S SUMMARY

PRE-TALC INSTILLATION

- Arrange supply of talc from pharmacy.
- Drain effusion to dryness (confirm by X-Ray).
- Inform patient & gain consent.
- Prescribe pre-meds and talc.
- Administer morphine 30-60 minutes before and lidocaine 5 minutes before instillation of talc slurry.
- Close chest drain via 3 way tap.



MAKE TALC SLURRY & PREPARE SALINE FLUSH IMMEDIATELY PRIOR TO INSTILLATION

1. Using a white needle draw up 50ml of 0.9% sodium chloride into a 50ml syringe (luer lock) and inject 20ml of this into the talc bottle, through the bung in the top of the bottle.
2. Shake the talc bottle vigorously to encourage dispersal of the talc into the 0.9% sodium chloride.
3. Draw the talc/sodium chloride mixture from the talc bottle into the syringe still containing the remaining 30ml 0.9% sodium chloride.
4. A talc slurry will not yet have been achieved. To ensure complete formation of a slurry, repeat the injection of 20ml of the talc mixture from the syringe back into the talc bottle, shake vigorously. Then draw back the contents of the bottle into the syringe and continue to repeat until a talc slurry is produced.
5. Ensure that the syringe containing the talc slurry is continually agitated to avoid sedimentation.



INSTILLATION OF THE TALC SLURRY

- Ensure chest drain closed, then attach talc slurry-filled syringe.
- Instil talc slurry intrapleurally **RAPIDLY**.
- Close 3 way tap to chest drain.
- Change talc syringe to saline-filled syringe.
- Open 3 way tap to patient & flush with saline.
- Close 3 way tap to chest drain bottle and leave closed for 1 hour.
- Inform SN to open 3 way tap to the chest drain bottle in an hour.



POST-INSTILLATION

Remove chest drain when drainage less than 150ml during 24 hours (make decision whether to order chest X-Ray).

APPENDIX 2: GUIDELINE FOR THE PROCEDURE OF PLEURODESIS WITH TALC SLURRY: NURSE'S SUMMARY

PRE-TALC INSTILLATION

- Contact ward pharmacist to arrange supply of talc.
- Ensure patient is in bed (sitting or lying).
- Record baseline observations: Temperature, Pulse, Blood pressure, Respiratory rate, Oxygen saturation.



POST-INSTILLATION

- Record observations every 30 minutes during the procedure and for the 2 hours post-procedure.
- Contact doctor immediately if any profound change in observations.
- Ensure patient can reach nurse call bell at all times.
- After 1 hour, open the 3 way tap to the chest drain and record accurate drainage over the next 24-48 hours.
- Leave the drain in situ until drainage slows to less than 150ml during 24 hours.

References

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