Replogle Tube Placement and Nursing Care in NICU

Procedure Responsibilities and Authorisation

Department Responsible for Procedure	NICU
Document Facilitator Name	Aira Javier
Document Facilitator Title	Associate Charge Nurse Manager
Document Owner Name	Diane Taylor
Document Owner Title	Charge Nurse Manager
Target Audience	Nurses
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Procedure Review History

Version	Updated by	Date Updated	Summary of Changes
1	Leanne Baker	Aug 2009	First version
2	Joyce Mok	Jan 2014	3 yearly update
3	Joyce Mok	Jan 2017	3 yearly update
4	Richard Pagdanganan	July 2020	3 yearly update
5	Aira Javier	December 2023	Updated procedure, photos, appendix & references

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1 Overview

1.1 Purpose

To outline the care of an infant with tracheo-eosophageal fistula/atresia by providing low grade suction to remove secretions with the use of a Replogle tube.

1.2 Staff group

Health NZ Waikato staff working in Neonatal Intensive Care Unit (NICU).

1.3 Patient / client group

Neonates and infants in NICU.

1.4 Definitions

EBM	Expressed breast milk
CNS	Clinical Nurse Specialist
NNP	Neonatal Nurse Practitioner
Oesophageal Atresia	A congenital anomaly in which the oesophagus ends in a blind upper pouch. Most neonates with OA also have an abnormal connection between the trachea and oesophagus; this is called a tracheo-oesophageal fistula (TOF).
Replogle Tube	A double lumen radio-opaque tube - the clear larger lumen is for drainage and the blue smaller lumen functions as lavage port. The replogle tube is mainly used to provide continuous suction and irrigation to facilitate adequate drainage of the upper oesophageal pouch. Continuous low pressure suction (-15cm to -35 cmH_20) is applied, thus allowing the pouch to be kept clear of saliva and secretions which can be aspirated into the lungs.
Tracheo-oesophageal fistula (TOF)	A fistula is present between proximal and/or distal oesophagus and the airway.

2 Clinical Management

2.1 Competency required

Registered nurses who have completed Level III orientation

2.2 Equipment

- Replogle tube 10 Fr
- A spare Replogle tube at bedside
- Gloves
- Suction Unit
- 30ml syringe
- Extension tubing (1.8ml tubing)
- Sodium chloride 0.9% (30-50mls)
- Suction Catheter
- Leukoplast ™ Brown Tapes
- Duoderm for base tape
- Mucous trap

NOTE: Consider use of Replogle tube 8Fr for infants < 32 weeks. See Appendix for alternative Replogle tube set-up

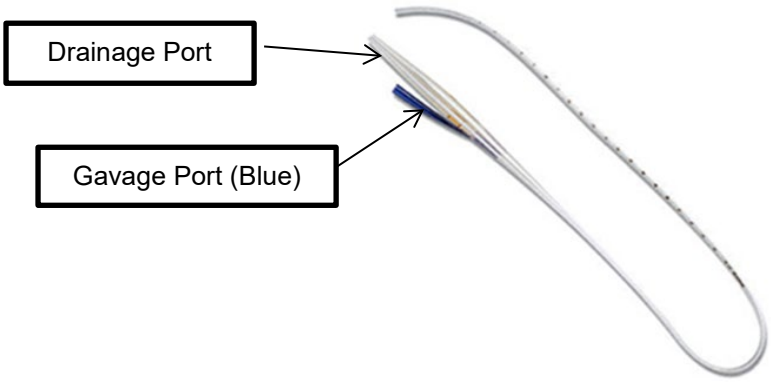

Figure 1. Example of a Replogle tube

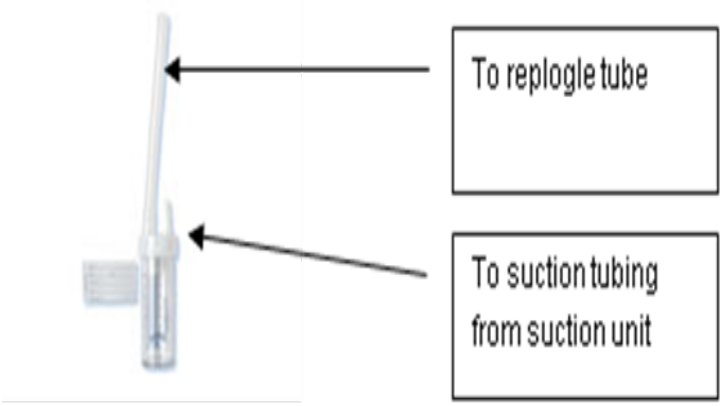

Figure 2. Mucous trap

2.3 Procedure

2.3.1 Insertion/placement of Replogle tube

Ensure that the parents/caregivers understand the rationale and expectations for the procedure, as well as potential complications.

Insertion/placement of a Replogle tube is a two-person procedure—the registered nurse will perform the procedure and the second person (staff or caregiver) will provide comfort measures to the infant. Consider giving EBM or sucrose 25% for procedural analgesia.

- Perform hand hygiene
- Assemble equipment on sterile guard.
- Open Replogle tube on sterile guard
- Perform hand hygiene and put on sterile gloves.
- Position of infant with head of bed elevated 30-45 degrees
- Suction infant in preparation for the tube insertion to ensure airways and oropharynx are clear.
- Consider oral placement of Replogle tube if baby is <1000g or has choanal atresia.
- Insert gently (approximately 10-12 cm at the lips for term infants) until resistance is felt then withdraw tube by around 0.5cm to ensure that the tube is not causing pressure to the pouch mucosa.
- Apply Duoderm as a base tape and secure the tube with a Leukoplast brown tape.
- Note and document the length of insertion in the clinical notes.
- Write the date and length of insertion on an adhesive label and attach to the tube.
- Attach to low suction
- Attach mucous trap to suction tubing unit on low suction to provide clear view of patency of Replogle tube and allow measurement of drainage.

  Set suction at -25--30 mmHg to aid in reducing secretion build up and reduce risk of mucosal damage from the suction pressure.

NB: If unable to maintain appropriate accurate suction pressure directly from suction unit, an atrium chest drain unit may be used to control the suction pressure.

Sodium chloride 0.9% flush/infusion
Sodium chloride 0.9% is used to maintain patency and prevent Replogle tube obstructing.

The gavage tube is used for either intermittent flushes at 0.5ml per 15 minutes or continuous infusion of sodium chloride 0.9% at 1-2ml/hr. If used for intermittent flushes, the gavage port/tube must be closed or sealed when not in use.

Flush solution and mode (i.e. intermittent or continuous) must be charted by medical staff (NNP/CNS/Registrar)

Position infant upright, lateral or prone due to risk for aspiration.

Provide developmental care support.

NB: Observe for decrease in salivation or dribbling. This is an indication that the tube is in correct place and effective.

2.3.2 Replogle Tube care and maintenance

Change every 4 days or PRN if secretions are very thick.

The tube function diminishes when there are excessive or thick secretions in the lumen.

If nasal placement, use alternate nostrils for insertion to prevent damaged nostrils.

2.3.3 Observations and recording

Vigilant monitoring and assessment is required while Replogle tube is in situ to recognise possible blockage or dislodgement of tube.

The following requires hourly monitoring and recording:

- Insertion site -- monitor the skin around the nose, watch for signs of excoriation and damage to nasal mucosa.
- Placement of the Replogle tube/correct insertion depth.
- Sodium chloride 0.9% infusion in the Fluid Balance section of the Observation Sheet.
- Monitor and record the suction pressure every hour.

Measure the drainage 4-hourly and PRN as needed to assess the amount and characteristics of the fluid.

Continuous monitoring and record HR, RR, and SpO2.

Suction
Ensure functioning alternative suction equipment is available at the bedside as it may be necessary if tube becomes blocked and waiting for replacement.

If the pressure on the suction starts to increase this may be a sign that the Replogle tube is blocked or it is adhered to the oesophageal/pouch wall.

If the suction pressure is too high, this can cause tissue damage.

2.3.4 Troubleshooting

If Replogle tube is not draining:

- Check if suction is functioning correctly.
- Check the placement of the Replogle tube in the nose/lips to ensure that the depth is still correct.
- Move tube gently in the nostril/orally because tube may be occluded due to its position in the pouch.
- Instil 1-2 mls of sodium chloride 0.9% for injection into the blue lumen of the Replogle tube and observe what happens. Normally, sodium chloride 0.9% should be seen moving down the main lumen of the tubing during the instillation
- If there is still no movement of the secretion seen through the tube, or no return of
- sodium chloride 0.9%, remove the Replogle tube, flush to ensure that it is patent and re-insert.
- If above steps still do not work, tube may need to be replaced.
- Call for assistance for re-insertion.
- Inform medical team.

NB: If at any point that the infant becomes respiratory compromised do not trouble shoot using the above test, inform the nurse coordinator or ACNM and the medical team-immediate action is required.

2.4 After care

- Clear away equipment and dispose as per Infection Prevention and Control policy (Ref. 6307)
- Perform hand hygiene.
- Document procedure and infant's tolerance of the procedure in clinical notes

3 Audit

3.1 Indicators

- There is documented evidence that observations are taken as per 2.3.2
- Suction for Replogle Tube is set at 25-30 mmHg as per guideline
- Replogle Tube insertion length is written on sticky label attached to tube and is documented in Clinical notes.

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Appendix A – Alternative set-up for Replogle tube.