Sham feeding for infants with unrepaired long-gap oesophageal atresia

Aim
To enable babies with unrepaired long-gap oesophageal atresia to learn to feed orally

Definition of terms
Oesophageal atresia (OA): 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).

Long-gap oesophageal atresia: those infants with pure OA or those with OA with a proximal TOF, or those with other variants of OA with a large gap where an oesophageal anastomosis is unable to be performed immediately. Neonates with long-gap OA are often managed with a delayed oesophageal repair or oesophageal replacement surgery.

Replogle tube: a tube which is placed into the oesophageal pouch to which is applied continuous low pressure suction (-15 to -35 cmH2O), thus allowing the pouch to be kept clear of saliva and secretions which can spill into the lungs.

Sham feed: a feed given to a baby with unrepaired long-gap oesophageal atresia with a Replogle Tube connected to suction draining the milk from the upper oesophageal pouch to prevent aspiration. Sham feeding is used to enable the baby to learn to feed orally either by breast or bottle prior to repair of the oesophageal atresia. After the feed is removed from the oesophageal pouch by suction it is then re-fed to the baby via the gastrostomy tube to enable oral feeding to be associated with milk entering the stomach at the same time.

Indications for sham feeding
• Infants with long-gap OA awaiting a delayed repair by oesophageal anastomosis or oesophageal replacement surgery
• Infants should be tolerating >100 ml/kg/day of bolus enteral feeds via gastrostomy prior to commencing sham feeds

Assessment
Assessment of suitability of infant for sham feeding
• Infants should be >35/40 corrected age, stable, requiring no respiratory support and able to coordinate sucking, swallowing and breathing
• Infants should be stable on continuous low pressure Replogle tube suction of the upper oesophageal pouch
• Sham feeding should only be commenced with consent from the infant’s Surgeon and Neonatologist
Initial Assessment
1. The patient requires:
   • continuous cardio-respiratory and oxygen saturation monitoring
   • assessment of cardio-respiratory status, with SpO2, heart rate & respiratory rate within normal limits
2. Ensure patency of Replogle tube prior to commencing sham feed, by flushing the Replogle tube with 3mls N/saline & ensuring the 3ml N/saline is removed from the pouch.

Ongoing Assessment
Ongoing assessment of cardio-respiratory status during & post sham feed with observation for respiratory compromise including:
   • Respiratory distress
   • Apnoea
   • Desaturation with SpO2<90%
   • Bradycardia
   • Stridor
   • Use of accessory respiratory muscles

Assessment of feeding including:
   • co-ordination of sucking, swallowing & breathing.
   • management of feed volume with no coughing, choking or aspiration episodes

If the infant has any signs of respiratory distress/compromise or difficulty with the sham feed the sham feed should be ceased immediately.

Equipment
• New specimen trap (40ml) for each sham feed
• 30-50 ml syringe

Technique
a. Sham feeds may commence when the infant is stable postoperatively following insertion of a gastrostomy tube. Infant should be tolerating >100ml/kg/day of bolus enteral feeds via gastrostomy prior to commencing sham feeds.

b. Sham feeding may be by breast or bottle.

c. Ensure SpO2 probe & ECG/respiratory monitor on with limits set (HR 100-200b/min & SpO2 90-100%).

d. Disconnect Replogle tube from Atrium UWSD Unit. Ensure Replogle tube is in correct position and patent. Flush with 3 ml N/saline and aspirate this back, to clear tube and ensure patency.

e. Attach new specimen trap to Replogle tube & suction tubing. This is to collect the milk feeds.
f. When ready to commence feed, ensure wall suction set to -80 to -90 mmHg.

**Breastfeed:**
- Lactation consultant, PMU midwife, TOF/OA Nurse, NNU Speech Pathologist, NNU educator, or AUM to be present for initial breastfeeding attempts in the first 1-2 weeks of sham feeding.
- Breastfeeding may start when suck/swallow/breathe is well coordinated.
- During breastfeeding baby should be positioned head up with baby’s trunk at least 45 degrees upright.
- Mother to offer breastfeed. Initial breastfeeds to be offered after mother has expressed. Initially to offer only 1 breast. If breastfeeding well & volumes tolerated over first 2 days, mother can then offer breastfeed without expressing first; increasing as tolerated to offering both breasts at each feed (when infant on 150ml/kg/day bolus gastrostomy feeds).

**Bottle feed:**
- TOF/OA Nurse, NNU Speech Pathologist, NNU educator, or AUM to be present for initial bottle feeding attempts in the first 1-2 weeks of sham feeding.
- Offer bottle feed only if mother planning to bottle feed with EBM/formula and does not wish to breastfeed.
- Warm entire volume of feed to be given, pouring amount for sham feed into the bottle (ideally Medela Mini Special Needs Feeder or Medela Special Needs Feeder) & offer sham feed on slow flow setting with teat for first 2 days.
- Increase bottle feed by 5 ml every 12 hours as tolerated up to total feed volume.
- While holding baby in a comfortable UPRIGHT position – place a few drops of EBM/formula on lips to initiate feed. Pace bottle feed as required by baby.

g. When an appropriate volume is taken or the baby is no longer interested in feeding or the specimen trap is nearly full, empty the specimen trap of EBM/formula into an appropriately sized syringe attached to gastrostomy tube (this prevents waste of enzymes).

h. Ideally give gastrostomy feed at the same time as the sham feed; this gives the baby the sensation of the stomach filling with feed whilst orally feeding.

i. Burp baby as well, as this gets the baby used to burping (which will be necessary post repair of oesophageal atresia).

j. Following completion of the sham feed & re-feeding via gastrostomy tube, disconnect and discard the specimen trap. Flush the Replogle tube with 3ml normal saline, and aspirate this back, to clear tube & reconnect to Atrium UWSD Unit (suction set between -15 to -35 cm H2O, as set prior to sham feed). Return wall suction to -80 mmHg.
k. Record sham feed on Fluid Balance Chart in column labelled sham feeding to provide a reference for how sham feeding is progressing.

I. Once tolerating sham feeds well, aim to sham feed baby 4 times per day.

**Family Centred Care**
It is the responsibility of the clinician caring for the infant receiving sham feeding to ensure that the parents understand the rationale for the intervention, as well as potential complications.

**Companion Documents**
- *Sham feeding in oesophageal atresia at Victoria General Hospital, Vancouver— DVD*
- *Replogle tube management guideline*

**Links**
- [www.tofs.org.uk](http://www.tofs.org.uk)

**References:**


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