Transfer guidelines for surgical infants

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The North West Neonatal Network (NWNODN) consists of 3 locality neonatal networks, Cheshire and Merseyside (CM) Lancashire and South Cumbria (LSC) and Greater Manchester (GM). This document has agreed by locality Clinical Effective Groups (CEG) and can be adapted for local use.

Please acknowledge source if this document is adapted for local use.
Transfer guidelines for surgical infants

Many infants with antenatally diagnosed surgical conditions will be electively delivered at St. Mary’s in order to promptly access the required surgical services. This does not account for those with undiagnosed conditions, conditions acquired postnatally and those cases where the mother presents at, or is taken to, a delivery Unit other than SMH.

This guideline aims to detail those interventions required in specific surgical cases, and should be used in addition to the general stabilization, ongoing management and transfer guidelines already in place.

Oesophageal Atresia/ Tracheo-oesophageal fistula

Secretions/suction
- Use size 10FG NG tube or Replogle tube (if available)
- Tip of catheter in pouch
- Leave on free-drainage, AND aspirate every 5-10 minutes
  - To keep upper pouch empty & prevent overflow into trachea
- Needs flushing to maintain patency as secretions may be thick
  - Use 0.5-1.0mls of 0.9% Saline half-hourly down the narrow (flushing) bore, (more frequent saline & suction if required)
- Suction mouth with standard suction as required
- NB: Transport suction unit battery life only 15-20 minutes if left on continuous suction.

Ventilation
- Transfer as soon as possible to avoid prolonged ventilation prior to surgery
- Avoid ventilation and CPAP if possible: inspired gases take the path of least resistance (i.e. through a fistula) and may cause abdominal distension (or perforation in the worst case)
- If ventilation needed: urgent discussion with Consultant Neonatologist/Surgeon/Aesthetician on-call

Commence IV antibiotics –usually Augmentin, but check with Surgeons

During transfer
- Try to keep infant contented (crying may promote gastric distension which could lead to reflux/vomiting)
- Nurse infant prone, with head-up tilt as far as feasible
- Regular, intermittent suction to catheter in pouch

Abdominal Wall Defects
Gastroschisis/Exomphalos/Bladder Exstrophy

Exposed viscera
- Cover with clean plastic (does not need to be sterile) – wrap around whole of abdomen but not tightly AND defect, or place bottom half of baby in plastic bag
Use of cotton-wool or saline soaks is contra-indicated as adheres to tissues and cools infant.
Exomphalos with intact sac should be handled with care to prevent rupture.
Also avoid pressure, kinking, torsion & contamination with stool.

Fluids - as per general guidelines, plus:
- Nil By Mouth
- Large bore (minimum 8FG) NG/OG tube, on free-drainage – the purpose is as a surgical drain not as a feeding tube
- Ensure adequate IV fluids + fluid boluses to be given as 0.9% NaCl
- Regular blood sugars (exomphalos associated with Beckwith-Wiedemann syndrome = potential hypoglycaemia)

Commence IV antibiotics – Benzylpenicillin, Gentamicin & Metronidazole

During transfer
- Nurse baby on the RIGHT side with umbilical stump uppermost, in order to relieve tension on the mesentery
- Visualisation of the viscera – if circulation appears to be compromised, reposition viscera (check base of viscera mass for twisting/tension)
- Consider giving fluid boluses

**Abdominal Distension/Suspected Bowel Obstruction**
(atresias, ano-rectal malformations, Hirschsprung’s, meconium ileus, sepsis)

Infants with gross abdominal distension can rapidly decompensate and may require elective ventilation prior to transfer.

Size 8-10FG NG/OG tube
- Nil by mouth
- NB the purpose is as a surgical drain not as a feeding tube
- On free-drainage + regular intermittent aspiration
- Record amount & type of fluid aspirated
- If aspirates >10ml in total, then replace ml/ml with 0.9%NaCl +10mmol KCl/500ml

Fluid management
- Correction of shock
- IV fluids
- Spare cannula for boluses

Commence IV antibiotics
- Benzylpenicillin, gentamycin & metronidazole

X-rays
- AP and lateral decubitus (right side uppermost)
Examination

- Do not instrument the anus (probe, washouts) as this can obscure GI contrast appearances of Hirschsprung’s

During transfer

- Nurse in supine or lateral position
- If significant abdominal distension, observe closely for hypoxia (due to splinting of diaphragm)

**Congenital Diaphragmatic Hernia**

These are often very complex infants and will normally require a registrar or consultant escort.

Intubate as soon as diagnosis made **without using bag & mask ventilation** then using adequate sedation & paralysis (atracurium)

- Gentle ventilation to avoid barotrauma/pneumothorax where possible – however, higher pressures may be needed if there is significant pulmonary hypoplasia.

Size 10FG NG tube – passed and aspirated as soon as possible (to prevent gaseous distension of bowel

- On continuous drainage
- Aspirate frequently to keep stomach decompressed

Surfactant not routinely indicated, unless ≤32 weeks. In cases with severe respiratory failure >32/40, discuss surfactant usage with consultant anaesthetist.

During transfer

- Keep baby sedated and paralysed
- Observe for signs of pneumothorax (unaffected side)

**Necrotising Entero - Colitis**

These are often babies who deteriorate rapidly and an experienced team should accompany the infant.

- NG/OG tube on free drainage, as large as tolerated
  - NB this is a surgical drain, not a feeding tube
- NBM
- IV fluids
- Check clotting, consider FFP/further dose of vitamin K
- IV antibiotics – Benzylpenicillin, Gentamycin & Metronidazole
- If umbilical lines insitu, discuss with surgeon regarding removal/leaving in.
• X-rays – AP & shoot through (left lateral = liver side up)
• Ventilate at an early stage especially if hypotensive or acidotic

**Upper/external airway problems**

**Choanal atresia**

• If bilateral, infant will be unable to breathe through nose, so oro-pharyngeal airway (appropriately sized Guedel) must be used, and well secured

**Pierre Robin/Micrognathia**

• If significant respiratory distress, use Guedel airway, or consider naso-pharyngeal airway
• Nurse & transfer in prone position, this usually helps airway patency
• If ET intubation is considered, this must be discussed with referring/receiving consultant, as these are often difficult. Ask for an experienced neonatal SpR or Consultant to attend.

**Neural Tube Defects**

**Meningocele, encephalocele, myelomeningocele**

• If sac is ruptured, cover with sterile, non-adherent dressing
• Nurse infant prone, to prevent pressure on lesion
• Cover lesion with Geliperm (if available), or use whatever is advised as alternative by Neurosurgeons Ward 77 RMCH.
• Prevent stool contamination.
• Commence IV antibiotics – benzylpenicillin & gentamycin