

Guideline

Stabilisation and transfer of an infant with gastroschisis

1 Scope

For use within the Paediatric and Neonatal Decision Support and Retrieval service for the East of England.

2 Purpose

To provide guidance for initial stabilisation and transfer of infants with gastroschisis.

3 Definitions

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| ANTS | Acute Neonatal Transfer Service |
| BP | blood pressure |
| CPAP | continuous positive airways pressure |
| HR | heart rate |
| IV | intravenous |
| NBM | nil by mouth |
| NGT | nasogastric tube |

4 Introduction

Gastroschisis is a congenital defect of the anterior abdominal wall through which the abdominal contents herniate. It is usually located to the right of the umbilicus and the abdominal contents are not covered by a protective sac. The intestines and sometimes part of the liver and spleen protrude through the defect.

- Associated anomalies such as intestinal atresia are reported in up to 10-20% of cases
- Risk factors include young maternal age
- Prematurity and growth retardation are common
- Occurs in around 1 in 3000 births
- Survival rates are generally reported to be over 90%

5 Stabilisation and initial management

5.1 Airway and breathing

- Initiate resuscitation as per neonatal life support guideline.
- Infants with gastroschisis rarely need intubation, but if respiratory support is required, the infant should be intubated promptly as prolonged mask ventilation and CPAP are not recommended due to the potential to cause significant dilatation of the gut (making surgery more difficult).
- The stomach is usually distended with a significant volume of bile-stained fluid, which can very easily reflux and be aspirated. It is therefore important to pass a large bore (8-10F) naso/orogastric tube and empty the stomach immediately after delivery. The tube should be left on free-drainage and aspirated every 15 minutes. The NG tube is often visible in the correct position through the gastric wall.

5.2 Management of prolapsed gut

- Lay baby on top of a long, pre-cut length of cling film and wrap right around the abdomen with gut lying well supported.
- The exposed bowel is then covered with cling film to prevent loss of moisture and heat and also to allow regular assessment of bowel colour and perfusion.
- Avoid letting the gut flop to one side if the baby is lying in a supine position as this can kink the vascular supply and impair perfusion to the gut or adversely affect venous return.
- Try to ensure that the bowel is not stretched or under tension.
- Positioning of rolled up towels or nappies against both sides of the torso may help to stabilize the gut and keep it central.
- Regular inspection and documentation of gut perfusion is essential – dusky/purple appearance of the bowel requires immediate attention and consideration of re-positioning +/- a fluid bolus.
- An alternative position is to lie the infant in a left lateral position so that the gut can lie supported straight in front of the infant.

5.3 Volume replacement

- Fluid losses can be enormous and easily underestimated. Losses from the lumen of the bowel will be seen via the NG tube but there will be ongoing additional fluid losses into the distal bowel and peritoneum as well as evaporative losses from the exposed bowel. An early bolus of 20ml/kg of 0.9% Sodium Chloride or 4.5% Human Albumin Solution is advised over 15 – 20 minutes, to compensate for protein ooze and fluid losses from the gut.



- Maintain a low threshold for further fluid boluses, paying close attention to markers of circulatory status – heart rate, perfusion, blood pressure, lactate and urine output.
- Consider inotropic support if evidence of hypotension and/or hypoperfusion which has not responded to volume replacement.
- Give maintenance fluids of 60-90ml/kg/day 10% Dextrose in addition to the above and monitor blood glucose levels.
- Replace NG losses ml/ml with 0.9% Sodium Chloride with Potassium Chloride (10 mmol/500ml).
- Monitor temperature carefully – may be large evaporative heat losses.
- Keep NBM and give IV antibiotics.
- Transfer to a surgical unit as soon as possible.

5.4 Pain assessment

Consider IV paracetamol and/ or morphine infusion to ease discomfort.

6 During transfer

- Avoid hypothermia.
- Nurse baby in the position which maximizes perfusion to the gut. During transfer a supine position is recommended as in the left lateral position the baby would be facing the back wall of the transport incubator, so regular inspection of the gut would not be possible.
- Continually assess circulatory status (HR, perfusion, BP) and closely observe the gut – consider further fluid boluses and/or re-positioning of the baby if concerns regarding gut perfusion during transfer.
- Consider supplementary oxygen if any evidence of gut compromise.

7 Monitoring compliance with and the effectiveness of this document

The PaNDR team will monitor compliance with this document by undertaking regular audits which will be reported back to the consultants and lead nurse.

The effectiveness of the document will be monitored by review of any reported incidents via the lead nurse for risk. These incidents will be shared with the team and consideration given to adjusting the guideline if concerns are identified.

8 References

Newborn Surgery 3E (2nd edition) CRC Press 2003, edited by Professor Prem Puri

Surgical newborns - Embrace transfer guidelines:

http://www.sheffieldchildrens.nhs.uk/downloads/embrace/Embrace_NeonatalSurgicalTransfers.pdf

Seattle Children's Hospital Gastroschisis guideline:

<http://www.seattlechildrens.org/healthcare-professionals/gateway/pathways/>

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