Safe Securing for Transfer of Umbilical Arterial and Venous Lines

Document Control Information

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<tbody>
<tr>
<td>Document Owner</td>
<td>Lutman/CATS Team</td>
<td>Document Owner Position</td>
<td>Speciality Lead</td>
</tr>
<tr>
<td>Document Version</td>
<td>Version 1</td>
<td>Replaces Version</td>
<td></td>
</tr>
<tr>
<td>First Introduced</td>
<td>September 2014</td>
<td>Review Schedule</td>
<td>3 yearly as required</td>
</tr>
<tr>
<td>Active Date</td>
<td>September 2014</td>
<td>Next Review</td>
<td>July 2017</td>
</tr>
<tr>
<td>CATS Document Number</td>
<td>01092014</td>
<td></td>
<td></td>
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<tr>
<td>Applicable to</td>
<td>All CATS employees</td>
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Safe Securing for Transfer of Umbilical Arterial and Venous Lines

Umbilical Vessels are relatively accessible in the newborn infant. In most cases, the lines will already have been sited by the neonatal team at the referring hospital.

Umbilical catheterisation is not a procedure that should be undertaken by a member of the CATS team without a clear rationale and without discussion with the CATS consultant.

When transferring a baby with umbilical lines in situ, it is important that the following information is taken from handover:

1) Catheter size
2) Number of lumens
3) Length of insertion
4) Position on x-ray
5) Infusions recently or currently running through.

Following this the catheters should be inspected to:

1) Confirm the length;
2) Confirm catheter position on x-ray;
3) Distinguish UVC from UAC and ensure that they are properly labelled;
4) Ensure that they are adequately secured;
5) **Ensure that distal perfusion is not compromised.**

Confirming Length
The length should be recorded at the stump
If the length that is seen is different to that which was communicated in handover, a repeat x-ray should be undertaken to confirm catheter position.

Though a line may be withdrawn, under no circumstances should an incorrectly placed line be advanced.

Confirming Catheter Position on X-Ray

Umbilical Arterial Catheter

There are 2 potential positions for the UAC:

- **“High”: T6-9.** Preferred position above the diaphragm. This position avoids the coeliac axis, the superior mesenteric artery and the renal arteries.
- **“Low”: L3-4.** Adequate position above the aortic bifurcation.
**Umbilical Venous Catheter Position**

The UVC should ideally lie at the junction of the inferior vena cava (IVC) with the right atrium (RA). If lies within the liver, it should be withdrawn until it lies in the umbilical vein. It can be used in this position for the purpose of transfer, but the receiving team should be made aware of this.

The UVC should lie to the patient’s right (on the left side of the x-ray as it is viewed).

The UAC should loop caudally as it enters the iliac artery and should lie to the patient’s left (on the right hand side of the x-ray).

**Distinguishing Umbilical Arterial Catheter from Umbilical Venous Catheter**

Catheters should be adequately labelled externally. If the artery is being transduced it will be easy to identify which catheter is the UAC. If this is not the case, other indicators may be present:

- The UAC should be inserted considerably further than the UVC, as indicated by length at the stump.
- The UAC should be single lumen only; the UVC will often have more than one lumen.
- Some neonatal units will use red bungs to distinguish artery from vein.
- Please identify your lines and label accordingly

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Children’s Acute Transport Service provides paediatric intensive care retrieval for Great Ormond Street, The Royal Brompton and St Mary’s NHS Trusts. Funded and accountable to the North Thames Paediatric Intensive Care Commissioning Group through Great Ormond Street NHS Trust.
Ensuring Adequate Fixation for Transfer

A number of possible methods of fixation are utilised, varying between units. Babies who are being moved for transport must have more robust fixation to guard against catheter dislodgement. This should be achieved as follows:

1) Place a piece of duoderm on either side of the umbilicus (this or equivalent should be available on all neonatal units)

![Image of fixation method](image1)

2) Construct a vertical ‘pillar’ on either side of the umbilicus using transpore.

![Image of fixation method](image2)
3) Join the pillars with a long piece of transpore. The catheters should be looped individually and the transpore folded over the top of them.

Ensuring distal perfusion is not compromised
As with any central line it is important to check both peripheral perfusion and specifically for any discoloration of the buttocks, with respect to umbilical arterial placement. The peripheries should be observed for any pallor on flushing of the line.

***REMEMBER IF IN DOUBT TAKE IT OUT***