NHS FORTH VALLEY
CAPILLARY BLOOD SAMPLING

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NHS Forth Valley

Consultation and Change Record

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Introduction

A capillary sample is a blood sample collected by pricking the skin. Capillaries are tiny blood vessels which are near the skin surface.

In the neonate it is generally performed by heel puncture. This is a minimally invasive and easily accessible method of obtaining capillary blood samples for a variety of tests. Heel puncture can also help preserve venous access for future intravenous lines.

Capillary sampling can be used to monitor:

- Blood glucose levels
- Blood gases
- Full blood counts
- Drug levels
- Urea and electrolytes
- Bilirubin levels
- Newborn Bloodspot Screening Tests

Main problems associated with the procedure include:

- Increased pain (McIntosh et al. 1993)
- Local trauma (Wallymahmed 2000)
- Infection (Moxley 1989)
- Damage to nerves, blood vessels and bones (Blumenfeld 1979; Wallymahmed 2007)

The use of good technique when obtaining capillary samples may prevent many of these problems.

Preparation

Ensure a safe environment.

Equipment Required

- Gloves/disposable apron
- Sterile cotton wool/gauze
- Capillary tube and or blood bottles
- Tenderfoot lancets
- Disposable tray
- Sharps box
- Chloraprep

A clinical handwash should be performed prior to starting the procedure.
Select an appropriate site for blood sampling (see Appendix 2)

The site chosen for sampling should continually be rotated and be free from previous injury.

If soft paraffin is applied to the skin each baby should have their own supply in order to reduce the risk of cross infection. Only a thin smear should be applied to prevent potential alteration of blood results.

**Procedure**

Standard universal precautions should be used throughout the procedure.

Confirm patient identification and place equipment in a convenient position

Ensure adequate analgesia has been administered as required and baby is appropriately positioned/contained/swaddled.

Whenever possible, involve the mother in the procedure, using skin to skin contact or breastfeeding. When this is not possible consider sucrose and non-nutritive sucking.

To obtain the blood sample:

- Ensure the baby is lying in a safe and secure position
- Hold the baby’s heel with the non-dominant hand
- Hold the ankle with index and middle finger
- Use other fingers to steady the baby’s leg.
- Partly encircle the baby’s heel with thumb
- Clean the proposed puncture site with chloraprep and allow to dry for 30 seconds
- Gently compress the heel and hold the skin under tension
- Puncture the skin in a steady and intentional manner
- Relax tension and wipe away initial blood flow with cotton wool or gauze
- Whilst maintaining grip hold the heel so that blood is allowed to hang
- Gently but firmly compress the baby’s heel to form a large droplet of blood
- Do not squeeze the heel
- Hold the capillary tube or blood bottle to the blood droplet and touch
- Momentarily release pressure to collect subsequent blood then reapply pressure, allowing the blood to flow
- Continue until sufficient blood has been obtained
- If blood flow stops, clean site of old blood, allow for capillary refill, reposition hand and reapply pressure. If blood does not flow choose another site and repeat procedure.
Completing the Procedure

Once the sample has been obtained:

- Apply pressure to the site with sterile cotton wool/gauze
- Maintain pressure until bleeding has stopped

The baby should be left comfortable

Equipment should be disposed off according to Hospital Waste Policy

The person performing the skin puncture should wash their hands

The sample should be sent for analysis as soon as possible

Document procedure
Appendix 2: Recommended sites for neonatal and infant capillary blood sampling
References


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