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SUBJECT OBTAINING BLOOD SAMPLES FROM UMBILICAL CATHETERS (UAC, UVC AND PERIPERAL ARTERICAL CATHETERS

APPROVAL

I. PURPOSE

To ensure and effective collection of blood samples from indwelling umbilical catheters (arterial or venous).

II. PERSONNEL

A. RN'S
B. Physicians
C. APN
D. Respiratory Therapists

III. IMPLEMENTATION

A. UAC/UVC Catheters
1. Verify type of samples per physician/NNP order.
2. Attach empty sterile 3-mL syringe to stopcock port.
3. Turn stopcock 90 degrees so that the stopcock is OFF to IV fluids (VIF) but OPEN to infant.
4. Aspirate gently and slowly withdraw 1.5 – 2.0-mL blood from line.
5. Turn stopcock approximately 45 degrees to a halfway point between IVF and syringe. This "close" the system in all directions.
6. Removes syringe containing aspirated blood. Save and keep syringe tip sterile.
7. Place a new syringe into stopcock port:
   a. 1-mL syringe
   b. Tuberculin or 3-mL syringe for lab work
   ** Choose size appropriate for amount of sample needed.
8. Turn stopcock back 45 degrees so that stopcock is once again off to IVF but open to infant.
   ** Turn stopcock 45 degree – to halfway point between IVF and syringe when changing syringes.

9. Aspirate and withdraw desired amount of blood needed for sampling.
   ** Record TCM and/or pulse oximetry reading(s) at this time if obtaining sample for blood gas analysis.
10. Turn stopcock to close the system.
11. Remove syringe containing blood sample and replace with initial 3-mL syringe containing aspirated blood.
12. Turn stopcock OFF to IVF.
13. Carefully aspirate to displace any air into the syringe. Gently tap syringe to allow air to "float" to top of syringe.
14. Slowly and gently push (replace) blood into the line. Rate should NOT exceed 0.5-mL per 5 seconds.
    ** Closely observe line for air bubbles. If air is visualized, repeat step #13 before continuing.
15. Again turn stopcock 45 degrees to close the system.
16. Remove emptied syringe and replace with sterile syringe containing specified flush solution.
17. Allow infusing fluids to flush catheter.
18. If concerned with line clotting you may gently flush line with 0.5 to 0.8 -mL of solution after aspirating and displacing any air that may be present. (See #13 and #14).
19. Leave flush syringe in place.
20. Turn stopcock OFF to syringe. System is now OPEN (to infant and to IVF).
21. Dispense blood samples appropriately.
22. Document on flow sheet and heparin infusion monitor:
    a. time sample(s) collected
    b. amount of blood
    c. amount – type of flush solution instilled
    d. infant status/response

23 Before leaving bedside check to see:
   a. the stopcock is in correct position
   b. IVF's are infusing at appropriate rate
   c. That alarms are on

** If using system that has two stopcocks, always use stopcock proximal to infant.

*** All umbilical catheters are to be infused with Alaris pumps.

B. Peripheral Arterial Catheters

** Note that the procedure for obtaining blood samples from peripheral arterial lines is the a same as outlined for UAV/UVC lines with the following exceptions:

1. The preferred method for obtaining blood samples from peripheral arterial catheters (drip method).

a. Clamp T-connector with slide clamp.
b. Wipe re-sealable hub of T-connector with alcohol
c. Gently insert a 23-gauge one-inch sterile needle into hub.
d. Allow hub to fill with blood 3-4 drops of blood to drip out through the needle hub. This clears the catheter and T- connector of IV solution. Remove this needle.
e. Insert 2nd needle while occluding the hub with your gloved thumb. Advance carefully until resistance is met.
f. Collect blood sample using a capillary (Natelson) tube blood for blood gases and appropriate collection tubes for other samples.
g. Remove needle from T – connector hub.
h. Unclamp T-connector.
i. May flush catheter through stopcock at a rate not to exceed 0.5-mL per 10 seconds or may allow infusing IVF's to flush T- connector and catheter.
j. Carefully place used needle in appropriate container. Do NOT recap needle.