



Department:	Pediatric Intensive Care Unit (PICU)		
Document:	Departmental Policy and Procedure		
Title:	Removal of Arterial Line		
Applies To:	All Pediatric Intensive Care Unit Staff		
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1. PURPOSE:

- 1.1 To provide safety removal of arterial line.
- 1.2 To prevent complication associated with arterial wire and sheath.
- 1.3 To ensure high quality and consistent care delivery following arterial line removal.

2. DEFINITIONS:

- 2.1 **Arterial Line** – is an arterial catheter inserted into an artery and connected to monitoring tubing to allow for continuous blood pressure monitoring. The pressure is sensed by a section of the tubing known as the transducer which converts the mechanical pressure into an electrical waveform via a cable connected to a cardiac monitor.

3. POLICY:

- 3.1 A written physician order is required to remove an arterial line catheter.
- 3.2 The procedure must be performed by the staff nurse only after completion of the skill competency on arterial line removal.
- 3.3 Coagulation profile must be obtained prior to the removal of an arterial line to exclude for bleeding.
- 3.4 The arterial line is to be removed after 72 hours or if any sign of complications noted such as pulseless and discoloration, occlusion on the distal site and infection or if no longer needed.
- 3.5 The distal extremity of the insertion site should be closely monitored for color, pulses and sensation.
- 3.6 Catheter tip must be sent for culture and sensitivity if ordered by the physician.
- 3.7 Any redness, swelling, tenderness and discoloration on the arterial punctured site must be notified to physician immediately for intervention.

4. PROCEDURE:

- 4.1 Verify physician written order for the procedure.
- 4.2 Identify patient correctly by using two identifiers (patient's 4 names for the Saudi/complete names for the Non – Saudi and Medical Record Number).
- 4.3 Check patient's coagulation profile prior to the removal of the catheter, if prolonged, notify physician. To determine risk for bleeding and if pressure will need to be held for longer time in order to achieve hemostasis.
 - 4.3.1 Patients with severe clotting disorders may require an infusion of depleted clotting factors, immediately prior to arterial cannula removal.
- 4.4 The arterial line should be removed when:
 - 4.4.1 Limb circulation is compromised.
 - 4.4.2 The cannula is misplaced/not functioning.
 - 4.4.3 It is no longer needed for monitoring and frequent blood sampling.
 - 4.4.4 There are signs of infection.
- 4.5 Explain procedure to patient.

- 4.6 Assemble all equipment needed.
- 4.7 Perform hand hygiene and don sterile gloves.
- 4.8 Obtain patient's systolic, diastolic and mean blood pressure to establish a new baseline.
- 4.9 Turn off the monitor alarm; turn off the flow clamp to the flushing solution.
- 4.10 Loosen all dressing cautiously.
- 4.11 Clean site with alcohol swab and Povidone – Iodine and remove the dressing and suture gently, and check all suture has been removed.
- 4.12 Withdraw the catheter slowly, gently with steady motion. Keep the catheter parallel to the artery during withdrawal to reduce the risk of traumatic injury to the tissue.
- 4.13 Inspect catheter for clots and ensure entire catheter has been removed. Surgical intervention may require.
- 4.14 Hold on direct pressure onto puncture site minimum of five minutes with sterile gauze. Remove distal pressure slowly, as a sudden release of pressure can cause undue pressure on the arterial wall and cause re-bleeding. Carefully check the site, if oozing of blood present compress another five minutes until bleeding stopped otherwise notify physician if bleeding does not stop.
- 4.15 Send catheter tip for culture and sensitivity within 30 minutes if ordered by the physician.
 - 4.15.1 Observe sterile technique.
 - 4.15.2 Do not allow the tip to touch any unsterile surface.
 - 4.15.3 Cut the tip with sterile scissors or blade.
 - 4.15.4 Place the tip in the sterile container.
 - 4.15.5 Label the container with the obtained catheter tip through system.
- 4.16 Observe the site for bleeding. Assess circulation in the extremity distal by evaluating color, pulses and sensation. Repeat assessment every 15 minutes for the first 1 hour.
- 4.17 Apply transparent dressing on the site to permit observation. Notify physician immediately if any abnormalities such as swelling, redness, reduce in sensation, poor tissue perfusion and hematomas for further intervention.
- 4.18 If required a pressure dressing can be applied over the sterile dressing to achieve haemostasis.
 - 4.18.1 Must not encircle the wrist or limb.
 - 4.18.2 Must not impede venous blood flow
 - 4.18.3 Peripheral circulation distal to the site should be recorded.
- 4.19 Elevate the affected limb (distal extremities) to permit/improve circulation.
- 4.20 Document removal of arterial line in patient file with date and time, condition of the extremities, color, perfusion, warmth and capillary refill.

5. MATERIALS AND EQUIPMENT:

- 5.1 Sterile Dressing Set
- 5.2 Sterile Scissor
- 5.3 Alcohol Swab
- 5.4 4 X 4 Sterile Gauze
- 5.5 Transparent Dressing
- 5.6 Sterile Glove
- 5.7 Povidone – Iodine Solution

6. RESPONSIBILITIES:

- 6.1 Physician
- 6.2 Nurses








7. APPENDICES:

N/A

8. REFERENCES:

- 8.1 Kingdom of Saudi Arabia, Ministry of Health Baish General Hospital, 2018.
8.2 ARTERIAL LINE MANAGEMENT IN PICU - CHW PRACTICE GUIDELINE, NSW GOVERNEMENT, CHILDREN HOSPITAL AT WESTMED, 2007 ACCSED AT
<https://resources.schn.health.nsw.gov.au/policies/policies/pdf/2007-0071.pdf>

9. APPROVALS:

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