Vascular Access

> **THIS POLICY APPLIES TO:** Any patient where intravenous (IV) or intraosseous (IO) access is indicated, such as significant trauma, emergent or potentially emergent medical conditions. Recommended for all critical care patients.

RECOGNIZE:

- IV access indicated in cases of significant trauma or emergent medical conditions.
- Access of an existing venous catheter for medication or fluid administration.
- Central venous access in critical patients.
- Patients requiring rapid IV access with:
  - Multisystem trauma with severe hypovolemia
  - Severe dehydration with vascular collapse and/or loss of consciousness
  - Respiratory failure/arrest

EVALUATE:

- Conduct primary and secondary survey.

Administer Treatment

Vascular Access – Peripheral Extremity

- Don appropriate PPE.
- Use intraosseous (IO) access if life-threatening conditions exist prior to IV catheter placement attempt.
- Select the largest catheter bore based on patient condition and vein size.
- Inspect IV solution for expiration date, cloudiness, discoloration, leaks, or particles.
- Connect IV tubing in a sterile manner; fill drip chamber and flush tubing to remove air bubbles.
- Place tourniquet, select vein, and choose appropriate gauge catheter.
- Prep skin with antiseptic solution, insert needle with bevel up, and advance catheter into vein.
- Remove tourniquet, connect IV tubing or saline lock, and ensure free fluid flow.
- Secure site with sterile dressing and document procedure.

Vascular Access – External Jugular

- Don appropriate PPE.
- Place patient supine with head turned to opposite side (if no cervical injury risk).
- Prep site with antiseptic, align catheter with vein toward same-side shoulder.
- Puncture vein between jaw angle and clavicle; attach IV and secure without circumferential dressing.
- Document procedure, time, and outcome.

Vascular Access – Intraosseous

- Don appropriate PPE.
- Identify insertion site (humeral head, proximal tibia, distal tibia, or distal femur based on patient age and size).
- Prep site with antiseptic solution.
- Insert IO needle at a 60-90 degree angle using manual or EZ-IO device until loss of resistance is felt.
- Remove stylet, aspirate bone marrow if using manual device, and flush with 5 ml NS to confirm placement.
- Administer 0.5 mg/kg Lidocaine (max 40 mg) for pain relief if patient > 3 kg, and flush with 10 ml NS.
- Stabilize and secure needle, adjust flow rate, and document procedure.

Vascular Access – Existing Catheters

- Don appropriate PPE and clean catheter port with alcohol wipe.
- Withdraw 5-10 ml of blood and discard; flush port gently with 5 ml NS.
- Ensure no resistance, infiltration, or patient discomfort before proceeding with medication or fluid administration.
- Document procedure, any complications, and fluids/medications administered.

Vascular Access – Port-A-Cath

- Don appropriate PPE and clean access site with antiseptic.
- Stabilize port chamber and insert Huber needle using sterile technique.
- Withdraw 10 ml for waste, then flush with 10 ml NS.
- If no resistance or infiltration, proceed with administration; otherwise, stop and reassess.
- Secure Huber needle and document procedure.

CONTRAINDICATIONS:

- **Peripheral Access:** Avoid foot access in diabetics and access on the same side as a dialysis shunt.
- **External Jugular Access:** Contraindicated in patients ≤ 8 years of age.
- **Intraosseous Access:** Fracture at proposed site, Osteogenesis Imperfecta, infection at site, prior IO insertion or joint replacement at site.
- **Existing Catheter Access:** None specific, but assess for clots or dislodgement.

Transport Considerations

None

Information

> **External Jugular Vein Cannulation:** Indicated for critically ill patients > 8 years needing IV access when peripheral or IO access is not feasible. Can be attempted first in life-threatening events where other access is not obtainable.

Other Populations

- EZ-IO contraindicated for patients < 3 kg; use manual IO for these patients.

Revision #2
Created 15 November 2024 00:30:34 by James Anderson
Updated 15 November 2024 00:34:50 by James Anderson