



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Pediatrics		
Document:	Multidisciplinary Policy and Procedure		
Title:	Insertion of Intraosseous Infusion in Pediatric Patient		
Applies To:	All Pediatric Staffs		
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1. PURPOSE:

- 1.1 Performed for infant/children in cases of emergency such as cardio – pulmonary arrest or circulatory collapse, hypokalemia for traumatic injury or dehydration, burns and overwhelming sepsis if no other access is available.
- 1.2 Intraosseous infusion allows delivery of fluids, medication or while blood into the bone marrow when rapid infusion is difficult or impossible.

Contraindications for Intraosseous line insertion include:

- Burns
- Cellulitis
- Osteomyelitis
- Coagulopathies
- Previous IO access
- Ipsilateral fractures
- Osteoporosis (relative)
- Local vascular injuries
- Compartment syndrome
- Osteogenesis imperfecta
- Fracture of the target bone
- Infection at the puncture area
- Attempted IO access in target bone within 48 hours
- Prosthesis or recent orthopedic procedure near the insertion site

2. DEFINITIONS:

- 2.1 **Intraosseous Infusion** – is an immediate vascular access in an urgent situation when a peripheral route is unattainable. It is done in pediatric emergencies for infusion of blood, medications or fluids into the bone marrow.

3. POLICY:

- 3.1 Intraosseous access is inserted by a pediatrician in an emergency situation if no other access is available.
- 3.2 Consent must be signed by parents.
- 3.3 Strict aseptic technique should be practiced.
- 3.4 The site is assessed and maintained as a peripheral intravenous site.
- 3.5 Intraosseous access is used in children less than 6 years of age, not used in neonates.
- 3.6 Intraosseous access is used as a short term measure, should be discontinued as soon as conventional vascular access is established (within 2 – 4 hours, if possible). It must be removed within 24 hours to minimize the risk of complications.
- 3.7 Potential sites for IO access include the distal tibia, proximal tibia, and proximal humerus. The preferred site is the anterior medial portion of the tibia, as it is flat and free from major blood vessels.

- 3.8 The flow rate may need to be adjusted to the bone marrow density and cavity size.
- 3.9 The procedure is very painful and must be performed with sedation.

4. PROCEDURE:

- 4.1 Wash hands.
- 4.2 Assemble all equipment.
- 4.3 Explain the procedure to the parents and to patient if conscious.
- 4.4 Provide analgesic and sedation as ordered.
- 4.5 Position patient as indicated by the insertion site selected.
- 4.6 Using sterile technique, clean the puncture site with a Povidone – Iodine. Allowing to dry and cover with sterile drape.
- 4.7 Assist the physician with the procedure.
 - 4.7.1 Using the sterile technique, hand the physician 3 – 5ml syringe with 1% Lidocaine.
 - 4.7.2 Select The right size of IO cannula depends on weight, accounting for site anatomy and tissue depth (25mm 15-G for patients weighing 3 kg or more, 15mm 15-G for 3 to 39 kg, and 45mm 15-G for above 40 kg or those with excessive tissue depth).
 - 4.7.3 The physician inserts the cannula and obturator into the bone till the needle punctuates the marrow cavity, removes the obturator and replaces with 5ml of Saline.
- 4.8 Connect IV tubing to T – piece and a pressure infusion pump device.
- 4.9 Cleanse the surrounding area, secure the site then apply sterile dressing.
- 4.10 Administer the emergency fluids and medications needed as ordered.
- 4.11 Document the date, time and site or insertion the name of the physician who inserted and the patient's tolerance of the procedure.

5. MATERIALS AND EQUIPMENT:

- 5.1 Skin Topical Disinfectant
- 5.2 Sterile Towels
- 5.3 Tuberculin Syringe
- 5.4 Lidocaine (1%)
- 5.5 IV Cannula
- 5.6 Gloves
- 5.7 Infusion Pump

6. RESPONSIBILITIES:

- 6.1 Physician
- 6.2 Nurses

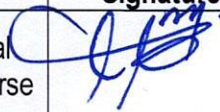

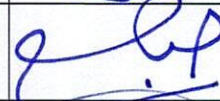
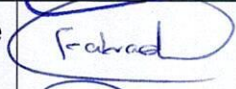


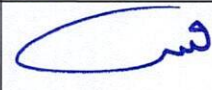
7. APPENDICES:

- 7.1 Nurses Progress Notes
- 7.2 Medication Order Sheet

8. REFERENCES:

- 8.1 Kingdom of Saudi Arabia, Ministry of Health Baish General Hospital, 2018.
- 8.2 <https://hospitalprocedures.org/intraosseous-line-insertion-in-emergency-healthcare-a-guide/>

9. APPROVALS:

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