Section	9	Clinical Policies	08/05/10 -Originated
Subject	9.13	General Procedures	-Reviewed w/ changes -Reviewed w/o changes
Policy	**9.13.33**	**Intraosseous Catheters for Resuscitation**	Resuscitation Committee-Author

Intraosseous Catheters for Resuscitation

Definitions

The basic principle of intraosseous infusion is the vascularity of the bone. An intraosseous (IO) catheter provides access to a noncollapsible marrow venous plexus, which serves as a route for the administration of medications, fluids, and blood during resuscitation.

Policy

Based upon American Heart Association standards, indications for the insertion of an intraosseous catheter include short-term treatment when intravascular access cannot be achieved and the patient's condition is considered life-threatening.

Only trained physicians who have completed the required intraosseous catheter training may insert an IO under the direction of a credentialed faculty member.

Nurses who have completed required training will assume primary responsibility for the following:

a. Administration of medications via the intraosseous catheter
b. Monitoring of the IO site for signs of complications
c. Notification of the ordering provider if any complications develop

Aseptic technique and standard precautions shall be utilized for insertion

Patients with an intraosseous catheter shall receive continued care and monitoring in a critical care setting

Discontinuation of the Catheter

1. The intraosseous catheter must be removed within 24 hours of insertion
2. Only physicians who have completed the required training will discontinue the intraosseous catheter
3. If the patient deteriorates and IO access is required again, bone that has been accessed within the previous 24 hours cannot be accessed again for a time period of 24 hours.

Contraindications for the insertion of an intraosseous catheter include:

a. Placement in a fractured bone or in a limb with vascular injury
b. Compartment syndrome
c. Cellulitis or burns at the site
e. Underlying bone disease, such as osteoporosis

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f. Previous orthopedic procedures, such as prosthetic limb or joint
g. Soft tissue infection
h. Excessive tissue and/or absence of adequate anatomical landmarks
i. Once a bone has been punctured by an IO attempt it cannot be used again for a time period of 24 hours.

Procedure

Detailed instructions and guidelines regarding the Intraosseous Catheter used at UTMB may be found by clicking this link.

Standards

Recommendations for Pain Management for conscious/awake adults and pediatric patients are delineated at this link.

Examples of confirmation of placement can be found at this link.

Blood Sampling
Intraosseous access is safe and effective for fluid resuscitation, medication administration, blood product administration, and blood sampling for laboratory evaluation. The results of laboratory tests may be slightly different from venous samples because of low flow and stasis in the bone marrow. Be sure to label blood samples IO.

Documentation should include:

- Indications and absence of contraindications (physician procedure note)
- IO site, use of anesthetic, adult or pediatric IO
- Patient tolerance of procedure, # of attempts (if more than one)
- Date and time of insertion
- Date and time of discontinuation
- Assessment of site for signs of infection and/or extravasation
- Patient and/or family teaching

References

American Heart Association (2005). Part 7.2: Management of Cardiac Arrest. *Circulation*, 112, IV-58 – IV-66.

Blumberg, S., Gorn, M., & Crain, E. (2008). Intraosseous Infusion. A review of Methods and Novel Devices. *Pediatric Emergency Care*, 24(1), 50-59.

Buck, M, Wiggins, B., & Sesler, J. (2007). Intraosseous Drug Administration in Children and Adults During Cardiopulmonary Resuscitation. *The Annals of Pharmacotherapy*, 41, 1679-1686.

The complete list of references is available at this link.