

**We report a case of vasopressor extravasation and threatened limb perfusion related to intraosseous access use and our management of the complication. We further report our subsequent systematic review of intraosseous access in the adult population” Greenstein et al (2016).**

Abstract:

OBJECTIVE: Current guidelines recommend the use of intraosseous access when IV access is not readily attainable. The pediatric literature reports an excellent safety profile, whereas only small prospective studies exist in the adult literature. We report a case of vasopressor extravasation and threatened limb perfusion related to intraosseous access use and our management of the complication. We further report our subsequent systematic review of intraosseous access in the adult population.

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DATA SOURCES: Ovid Medline was searched from 1946 to January 2015.

STUDY SELECTION: Articles pertaining to intraosseous access in the adult population (age greater than or equal to 14 years) were selected. Search terms were “infusion, intraosseous” (all subfields included), and intraosseous access” as key words.

DATA EXTRACTION: One author conducted the initial literature review. All authors assessed the methodological quality of the studies and consensus was used to ensure studies met inclusion criteria.

DATA SYNTHESIS: The case of vasopressor extravasation was successfully treated with pharmacologic interventions, which reversed the effects of the extravasated vasopressors: intraosseous phentolamine, topical nitroglycerin ointment, and intraarterial verapamil and nitroglycerin. Our systematic review of the adult literature found 2,332 instances of

intraosseous insertion. A total of 2,106 intraosseous insertion attempts were made into either the tibia or the humerus; 192 were unsuccessful, with an overall success rate of 91%. Five insertions were associated with serious complications. A total of 226 insertion attempts were made into the sternum; 54 were unsuccessful, with an overall success rate of 76%.

**CONCLUSIONS:** Intraosseous catheter insertion provides a means for rapid delivery of medications to the vascular compartment with a favorable safety profile. Our systematic literature review of adult intraosseous access demonstrates an excellent safety profile with serious complications occurring in 0.3% of attempts. We report an event of vasopressor extravasation that was potentially limb threatening. Therapy included local treatment and injection of intraarterial vasodilators. Intraosseous access complications should continue to be reported, so that the medical community will be better equipped to treat them as they arise.

Reference:

Greenstein, Y.Y., Koenig, S.J., Mayo, P.H. and Narasimhan, M. (2016) A Serious Adult Intraosseous Catheter Complication and Review of the Literature. Critical Care Medicine. April 7th. .

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