

"The study goals were to determine if intraosseous (IO) catheters can be placed with greater success into the humerus, femur, or tibia of cadaver rabbits, and to evaluate the accuracy of perceived success (PS) and objective clinical success (OCS) criteria against true intramedullary catheterization confirmed by fluoroscopy" Kennedy et al (2020).



Abstract:

The study goals were to determine if intraosseous (IO) catheters can be placed with greater success into the humerus, femur, or tibia of cadaver rabbits, and to evaluate the accuracy of perceived success (PS) and objective clinical success (OCS) criteria against true intramedullary catheterization confirmed by fluoroscopy. This was a prospective study utilizing 12 rabbit cadavers. Twenty-two participants attempted IO catheter placement at 3 sites. Perceived success, OCS, and fluoroscopic true success (FTS) were recorded. A Fisher's exact test was used to compare PS, OCS, and FTS, and FTS rates between sites ($P < 0.05$). A Wilcoxon test was used to compare speed of placement ($P < 0.05$). Overall, of 66 attempts, PS was reported in 86.4%, OCS was documented in 62.1%, FTS was confirmed in 43.9%. Perceived success and OCS overestimated FTS ($P \leq 0.01$ and $P = 0.027$, respectively). Confirmation of FTS occurred in 10/22 (45.5%) humeral, 5/22 (22.7%) femoral, and 14/22 (63.6%) tibial ($P = 0.03$) attempts. Median time until placement for the humerus was 37.5 seconds (range: 15 to 125 seconds); the femur 135 seconds (range: 91 to 148 seconds); the tibia 49 seconds (range: 19 to 150 seconds). The humerus and tibia were faster to catheterize than the femur ($P = 0.01$ and 0.03 , respectively). Participant PS and OCS criteria overestimated FTS. The humerus or tibia may be more successful and are faster to catheterize.

Prothrombin complex concentrate administration via intraosseous access

Intraosseous access devices in small children

Intraarticular extravasation following intraosseous needle intravenous access

Reference:

Kennedy, C.R., Gladden, J.N. and Rozanski, E.A. (2020) Comparison of 3 intraosseous catheter sites and methods of determining placement success in cadaver rabbits. *Canadian Journal of Veterinary Research*. 84(1), p.33-36.

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