

Bone Marrow Infusion in Adults.

Journal of Trauma-Injury Infection & Critical Care. 42(2):288-293, February 1997.

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Abstract:

Objective: To assess the feasibility and success rate of vascular access through intraosseous infusions in adults, in elective and emergency situations using a novel, automatic device, the bone injection gun.

Design: A prospective, nonrandomized trial.

Materials and Methods: Two groups of patients were prospectively selected over an 11-month period. Group 1: Adult patients with recent closed long bone fractures, who underwent orthopedic surgery to upper and lower limbs and needed regional anesthesia. Group 2: Adult patients who required emergency or semiemergency vascular access, in whom intravenous central or peripheral cannulation could not be established within a reasonable period of time.

Main Results: Fifty adult patients, aged 27 through 78 years, underwent the procedure, which was universally successful. In group 1, n = 31 patients; in group 2 (n = 19), 12 patients had multiple injuries, and seven underwent emergency resuscitation. In 76% of the cases, the needle was inserted into the area of the tibial tuberosity; in the remainder of the cases, the needle was inserted at the distal end of the radial bone and into the lateral or the medial malleolus. The success rate for an adequate insertion was 100% in this group of patients. No complications from the procedure were observed in this series.

Conclusions: This study emphasizes the importance and feasibility of the intraosseous route for infusion of fluids and medications in emergency situations in adults. The use of an impact, high speed automatic needle insertion device provides a higher success rate of vascular access via the intraosseal route in adult patients.