



Sandra Schwab, MD
Recipient of the Ken Graff Young Investigator
Research Award
American Academy of Pediatrics
2005 National Conference & Exhibition

"Transthecal Metacarpal Block vs Traditional Block for Painful Finger Procedures in Children"

A study proposal

*For the American Academy of Pediatrics, Section on Emergency Medicine,
Ken Graff Young Investigator Grant Program*

ABSTRACT

Background: Finger injuries and infections are common presenting problems in the pediatric emergency department¹. A traditional digital block, requiring at least two injections of anesthetic, is the usual method of regional anesthesia for many finger procedures. Digital blocks can sometimes be difficult to administer and assess for effectiveness especially in children. A newer procedure, the transthecal metacarpal block, which utilizes a single injection, may be more effective.

Objective: To determine if the transthecal metacarpal block (MCB) provides superior digit anesthesia in children requiring painful finger procedures as compared to the traditional digital block (TDB).

Methods: A randomized clinical trial comparing the MCB to the TDB will be conducted in an urban, tertiary care pediatric emergency department. Children <18 years of age, presenting to the emergency department with a finger injury or infection, which requires regional anesthesia for repair will be screened for eligibility. Eligible patients, with appropriate consent will be randomized to receive either the MCB or TDB with 1% lidocaine. The primary outcome, success of the block will be assessed using pinprick testing after a standardized wait time. Secondary outcomes including pain of block administration and repair, repairing physician satisfaction, and short-term complications will also be assessed.

Implications: Finding successful methods of anesthesia and pain control are paramount in the pediatric emergency department. In addition, using a type of digital block which is successful, easy to administer, and requires only one injection would give physicians confidence to treat finger injuries in children with regional anesthesia and possibly avoid procedural sedation in some cases. To date, no studies have been published on the efficacy of digital blocks in children. This study will also serve to give baseline success rates for both types of digital blocks.