

Discussion: Do Not Use Epinephrine in Digital Blocks: Myth or Truth? Part II. A Retrospective Review of 1111 Cases

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The senior author of this article (B.J.W.) published a classic article in *Plastic and Reconstructive Surgery* in 2001¹ entitled “Do Not Use Epinephrine in Digital Blocks: Myth or Truth?” This was a high-level-evidence, prospective, randomized, controlled trial in which trauma patients received finger blocks with lidocaine randomized to be with or without epinephrine. There was no finger necrosis in the 31 patients who received the epinephrine. This article was one of the important bullets that killed the myth of epinephrine danger in the finger. Since then, the myth has been clearly disproven by a number of other articles,²⁻⁴ and the source of the myth, procaine, has been revealed.⁵ The phentolamine antidote to adrenaline vasoconstriction in the finger is readily available in all hospitals.⁶

The purpose of this current follow-up (Part II) article is the clinical use of digital blocks with lidocaine with and without epinephrine over the first 7 years of the senior author’s practice. He clearly documents the use of finger blocks with lidocaine with epinephrine in 611 cases and lidocaine without epinephrine in 500 patients from 6 months to 93 years of age without a single case of epinephrine-induced finger loss, and without one instance of the need for phentolamine rescue.

This writer started carefully, documenting his own cases of lidocaine with epinephrine in the finger since 2002, and has not had one case of finger loss or one instance of need for phentolamine rescue in 979 cases at the time of this writing. The only skin loss in any of those cases was a 1.5 × 1-cm area of volar skin on the volar middle phalanx after a Dupuytren contracture release. This was attributable to the dissection of the thin Dupuytren skin flaps as opposed to the epinephrine, and was not unlike what the author has seen with similar cases in the days when

he used to perform them under general anesthesia with a tourniquet.

The authors did not use epinephrine in patients with injuries that caused vascular compromise or in those with peripheral vascular disease affecting the upper extremity and digits. This writer is not as concerned as he used to be about patients with vasospastic disorders and those with peripheral vascular disease. It has been this author’s experience that if the finger is nice and pink with good refill to start with, regardless of the vascular history of the patient, it will “pink up” again after the epinephrine wears off, which is usually in approximately 5 hours. In contrast, this writer would not inject epinephrine in a finger with a preinjection slow capillary refill such as is seen sometimes in the end-stage renal disease patient who presents with infarcted fingers, or in the pale foot of a vasculopathic patient with black or blue toes.

The authors use exclusively transthecal blocks and dorsal injection blocks. This writer prefers the single subcutaneous injection in the middle of the proximal phalanx with lidocaine and epinephrine. The single subcutaneous injection in the middle of the proximal phalanx with lidocaine and epinephrine block was preferred by volunteers to the two-dorsal-injection-block technique in a prospective, randomized, controlled trial.⁷ Hill et al.⁸ compared the single-injection transthecal block with the two-injection dorsal block and found that the mean pain score for the transthecal block was slightly higher in their series of 162 blocks on 31 volunteer subjects. This author has personally been injected with over 30 finger blocks associated with various research projects, and the transthecal block was the most tender of all.

The clinical significance of the authors’ 2001 article and the subsequent death of the epineph-

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rine finger danger myth is that the tourniquet and cautery are no longer required for most hand operations. Adrenaline generates enough temporary vasoconstriction that bleeding is no longer an issue. This means that sedation and general anesthesia are no longer necessary for most hand operations as well. The wide-awake approach is used in 95 percent of this writer's hand operations, and it is practiced widely in Canada. The benefits of watching comfortable patients actively move their repaired flexor tendons⁹ before closing the skin have been a major step forward in decreasing flexor tendon rupture¹⁰ and getting the tension right in tendon transfers.¹¹ The cost saving of wide-awake carpal tunnel repair is enormous¹² and has reduced the inconvenience to the carpal tunnel and most other hand surgery patients to the level of a visit to the dentist.¹³

The clinical significance of this 2010 article is that the validation of the safety of epinephrine in fingers is yet again demonstrated. The power of the silly little medical school nursery rhyme "never in the fingers, nose, ears, and toes" is vanishing.

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