

Wide Awake Flexor Pollicis Longus and Digital Nerve Repairs on a Patient in the Prone Position

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Abstract

Wide awake, local anesthesia, no tourniquet hand surgery is a growing field of hand surgery with many advantages described in the literature. This technique is safely performed with the patient in prone position and offer several advantages.

Keywords

prone, hand, surgery, thumb, walant, flexor

Introduction

Wide awake local anesthesia no tourniquet (WALANT) hand surgery has several advantages in flexor tendon repair.^{1,2} For an awake patient in supine position, the thumb tends to flex making exposure difficult. We describe our first experience using this technique with a wide awake patient positioned on his abdomen (prone) for improved exposure of the thumb structures.

Case report

We performed a primary repair of a laceration of flexor pollicis longus (FPL) and both palmar digital nerves at the level of the proximal phalanx. The patient was positioned in a prone position during the injection of local anesthesia and for surgery. We injected local anesthesia (20 mL of 1% lidocaine with 1:100,000 epinephrine:2 mL of bicarbonate 8.4%) using tumescent local anesthesia technique in order to reduce pain, provide adequate anesthesia, and provide adequate vasoconstriction without a tourniquet (Figure 1).³⁻⁵ Waiting at least 26 minutes after injection and before cutting is important to achieve maximal vasoconstriction.⁶ We waited 45 minutes in this case. There was no need for any additional local anesthesia injections during the procedure which took 70 minutes from incision to closure. No tourniquet was required, and visualization was excellent.



Figure 1. Tumescent local anesthesia with lidocaine and epinephrine in all possible areas of dissection.

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Figure 2. Intraoperative prone position for wide awake thumb surgery.

In the usual supine position with the patient on his back, the wrist is supinated and the thumb position causes the surgeon to tilt his head to accommodate. We found the prone position offered improved exposure of the palmar thumb because it tends to lay flat against the table. This was especially advantageous when we performed wide awake microsurgical digital nerve repair.

The prone position can also be helpful to decrease hand movement during local anesthetic needle insertion. Our patient was somewhat anxious in the beginning, so the prone position was helpful since it made it harder for him to look at his hand. He was easily distracted with a movie playing on a laptop computer easily positioned at his eye level (Figure 2). He was comfortable lying on his abdomen with a pillow for head support. After the repair, he was able to move the thumb without difficulty when we asked him to so, we could perform the intraoperative total active movement examination.¹

Discussion

With wide awake surgery, we were able to enjoy the advantages of prone position for thumb FPL and digital nerve microsurgery repair, while avoiding the risks associated with prone position in patients under general anesthesia. We were able to educate the patient with verbal postoperative instructions as we closed the skin and applied the splint.⁷

Prone positioning in patients who are unconscious, unprotected, and under general anesthesia has a list of potential risks and complications associated with it.^{8,9} These risks do not apply to fully awake patients. Awake patients who can tolerate lying on their abdomen while sleeping can tolerate the same position while undergoing WALANT. If the patient becomes uncomfortable in this position, they can tell the surgical team to switch them to a supine position for the remainder of the operation. Surgeons have been safely using prone positioning for awake patient for decades when excising skin lesions from the occiput, posterior neck, or back, under local anesthesia in the office.

The ideal patient positioning for wide awake hand surgery is where both the patient is fully comfortable, and the surgeon gains technical advantages and improved visualization from the positioning. We have already found the arm above the head position to be helpful in wide awake ulnar nerve transposition at the elbow.¹⁰ We suggest that surgeons consider the prone position for thumb surgery in the wide awake patient. We will continue to explore the advantageous of this position for other procedures in the upper extremity while using WALANT.

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being

included in the study. Additional informed consent was obtained from all patients for which identifying information is included in this article.

Statement of Informed Consent

Informed consent was obtained from all individual participants included in the study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

1. Higgins A, Lalonde D, Bell M, et al. Avoiding flexor tendon repair rupture with intraoperative total active movement examination. *Plast Reconstr Surg*. 2010; 126(3): 941-945.
2. Tang J. Wide-awake primary flexor tendon repair, tenolysis, and tendon transfer. *Clin Orthop Surg* 2015; 7: 275-281.
3. Lalonde D, Phillips A, McGrouther D. Chapter 4. Tumescence local anesthesia. In: Lalonde D, ed. *Wide Awake Hand Surgery*. Boca Raton, FL: Taylor and Francis Group; 2016:29-35.
4. Lalonde D, Bell M, Benoit P, et al. A multicenter prospective study of 3,110 consecutive cases of elective epinephrine use in the fingers and hand: the Dalhousie project clinical phase. *J Hand Surg Am*. 2005; 30(5): 1061-1067.
5. Lalonde D, Jagodzinski N, Phillips A. Chapter 5 How to inject local anesthetic with minimal pain. In: Lalonde D, ed. *Wide Awake Hand Surgery*. Boca Raton, FL: Taylor and Francis Group; 2016:37-47.
6. Mckee D, Lalonde D, Thoma A, et al. Optimal time delay between epinephrine injection and incision to minimize bleeding. *Plast Reconstr Surg*. 2013; 131(4): 811-814.
7. Lalonde D, MacGrouther D. Chapter 8. Talking with patients during surgery save time. In: Lalonde D, ed. *Wide Awake Hand Surgery*. Boca Raton, FL: Taylor and Francis Group; 2016: 59-63.
8. Edgcombe H, Carter K, Yarrow S. Anaesthesia in the prone position. *Br J Anaesth*. 2008;100(2):165-183.
9. Chui J, Craen RA. An update on the prone position: continuing professional development. *Can J Anaesth*. 2016; 63(6): 737-767.
10. Lalonde D, Phillips A. Chapter 19. Cubital tunnel decompression of the ulnar nerve. In: Lalonde D, ed. *Wide Awake Hand Surgery*. Boca Raton, FL: Taylor and Francis Group; 2016: 137-140.