

# Tips, Tricks, and Pearls for a Superior Patient and Surgeon Experience for Wide-awake Dupuytren Surgery

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**Summary:** Fasciectomy for Dupuytren disease is a common procedure traditionally performed with a tourniquet under general or regional anesthesia. Since the year 2001, the wide-awake local anesthesia no tourniquet (WALANT) approach has been applied successfully to Dupuytren surgery, with current excellent surgeon and patient satisfaction. However, using WALANT for Dupuytren surgery may be intimidating for hand surgeons who want to begin using this method. The purpose of this article is to offer a series of tips and tricks the authors have learned after having performed hundreds of WALANT fasciectomies, to make this technique easier for surgeons and a more pleasurable experience for patients. (*Plast Reconstr Surg Glob Open* 2024; 12:e5570; doi: 10.1097/GOX.0000000000005570; Published online 2 February 2024.)

## INTRODUCTION

Dupuytren surgery has traditionally been performed on an outpatient basis under general anesthesia, brachial plexus block, and intravenous Bier block, all of which require an arm or forearm tourniquet and the patient to discontinue certain medications, fast for 6–12 hours and submit to systemic sedation and preoperative testing such as an electrocardiogram or bloodwork.

Wide-awake local anesthesia no tourniquet (WALANT) is a surgical technique that relies on lidocaine and epinephrine to provide conditions which eliminate the need for the tourniquet and sedation. Data on complications and outcomes with WALANT Dupuytren surgery have previously been published by Denkler in 2005<sup>1</sup> and Lalonde.<sup>2–4</sup>

The benefits of wide-awake surgery include increased efficiency and productivity, decreased costs, and the avoidance of some of the risks associated with systemic sedation with tourniquets, including pain, tourniquet letdown bleeding, nausea and vomiting, pulmonary embolism, malignant hyperthermia, and aspiration pneumonia.

The two main concerns that patients have with awake surgery are the fear of pain during local anesthesia injection and pain during surgery. The operating room

environment can also be intimidating for many. The two senior authors have performed a total of at least 850 cases of WALANT fasciectomies since 2001. Although two cases required additional local anesthesia during the surgery in the very beginning, none of the rest of the cases have had any intraoperative pain. Almost all patients now only feel the initial poke of a 30 gauge needle in the palm as the only pain during the injection. We have also made great progress in eliminating the scary environment of the operating room. The purpose of this article is to share with other surgeons the best tips and tricks we have learned in making Dupuytren WALANT surgery a superior experience for both the patient and the surgeon.

## CONTRAINDICATIONS TO WALANT SURGERY

Contraindications to WALANT procedures are rare and include uncooperative patients, patients with extreme anxiety, or patients with peripheral vascular disease causing a compromise of peripheral circulation, such as scleroderma, vasculitis, or sickle cell disease.

## TIPS FOR A GREAT PATIENT EXPERIENCE WITH SURGERY

### Preoperative Phase on Surgery Day

- Fasting is unnecessary and even detrimental because it can cause dizziness and increase the risk of fainting.

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WALANT allows patients to eat breakfast and drink normally on the day of surgery.

- Forego the traditional preoperative workup (electrocardiogram and blood work) and avoid last-minute cancellations by the anesthesia team due to missing test results while minimizing operative risks.
- Have patients arrive approximately 1 hour before their scheduled time to give the anesthesia 45–60 minutes to work well but avoid excessive wait times to decrease anticipation anxiety.
- Surgery day is the day patients will be the most stressed and vulnerable. Greet your patient with a smile and warm and confident energy. The worst way to meet your patient that day is on the operating room table. Patients will feel better after meeting and talking with you before entering the operating room.<sup>5</sup>

### COMMUNICATING AND PRE-FRAMING THE EXPERIENCE

Patients are understandably anxious at the idea of being awake during surgery and are afraid of pain. Ask them, “are you nervous or excited?” or “what specifically are you scared of?” Allow them to open up; use empathetic and simple language to explain to the patient what is going to happen and assure them they will not be feeling pain. Tell them your goal is to give them a smooth and pleasant surgical experience. Let them know you care. Promise them that you will give them minimal pain with the local anesthesia injection, and then follow up on your promise by injecting like a magician, not like a torturer.<sup>7</sup> [See Video 1 (online), which displays how to inject minimal pain tumescent local anesthesia for WALANT Dupuytren surgery.]

- Sit down next to the patient’s bed or stretcher. Avoid talking down to your patient while standing. Touch them in a comforting and respectful manner.

### Takeaways

**Question:** How can surgeons more easily perform WALANT Dupuytren surgery and provide a better patient experience on surgery day?

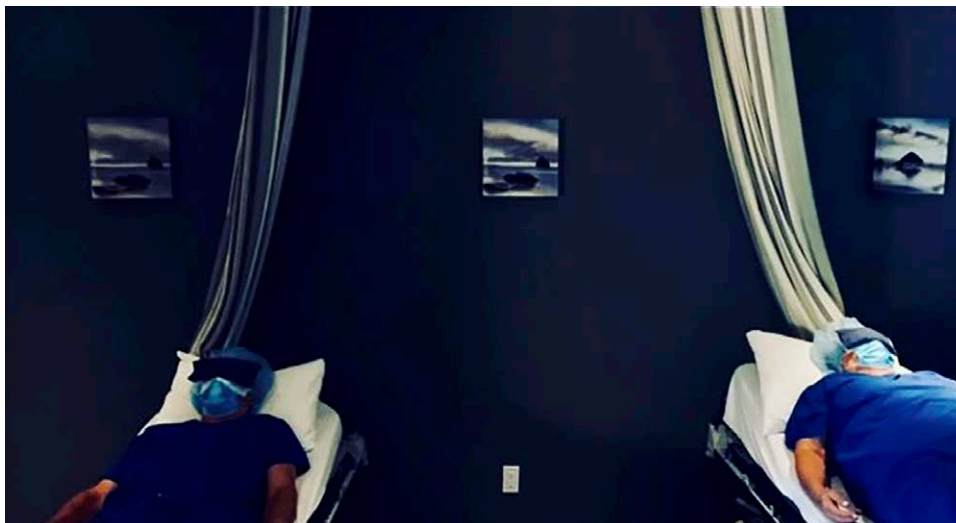
**Findings:** We provide several tips learned from many years of experience to make the surgery easier for the surgeon and turn the surgery day into a great experience for patients.

**Meaning:** This article will enable many surgeons to add Dupuytren into their WALANT menu of operations, as well as helping some start to focus on providing a great patient experience with WALANT surgery.

- Avoid medical jargon, as it can be stressful and challenging to understand. Reassure them with a quiet, soothing “late night FM DJ” voice and manner.
- Like at the dentist, WALANT patients do not need blood pressure or vital sign monitoring since no sedation will be administered. The absence of sedation keeps the patient clear-minded and in control, which often helps reduce anxiety. Beeping sounds and a cuff that inflates regularly are stressful and bring no benefit for wide-awake patients. Avoid using an intravenous line. Antibiotics can be taken orally when rarely required. “Demedicalize” the procedure as much as possible.
- Further decrease patient anxiety in the holding area using relaxing music, pleasant scents (diffuser, lavender scented face mask), or a stress ball (Fig. 1).
- Virtual reality goggles can also be used in the holding area, the surgical procedure room, or both.<sup>7</sup>

### PREOPERATIVE MARKINGS

- Sit next to them to make your preoperative markings in the holding area outside of the operating room before



**Fig. 1.** A photograph of relaxed patients in the lounge (holding area) with a lavender scented face mask after the WALANT injection.

administering the WALANT local anesthesia. Use this quality time to explain to the patient the plan. Educated patients are empowered patients. Drawing a smiley face on the patient's arm and telling them, "our goal for you today is for you to walk out of the clinic with a big smile on your face. Please tell me later if we succeeded" can help set the expectations and make your patient understand that you care about their experience, not just the outcome of the procedure<sup>5</sup> (Fig. 2).

### PREPARING AND INJECTING THE WALANT MIX LOCAL ANESTHETIC SOLUTION

- Prepare and label the WALANT mix syringes at the beginning of the day for better efficiency.
- We suggest using 1:100,000 epinephrine for better vasoconstriction than allowed by the 1:200,000, which is widely available in Europe. Simply add 0.1 mL of 1:1000 epinephrine to each 10 mL of 1:200,000 epinephrine to increase the concentration to 1:100,000.
- Decrease the pain of injection by buffering each 10 mL of 1% lidocaine (1:100,000 epinephrine) with 1 mL of 8.4% sodium bicarbonate and by following all the other rules for minimal pain injection of local anesthesia.<sup>6</sup>
- Before injecting the WALANT mix, position patients lying down to decrease the risk of vasovagal syncope (fainting). Use pillows under the head or knees to alleviate neck or back pain.



**Fig. 2.** A photograph of preoperative markings with a smiley face.

- You can use sensory noise (eg, a vibration device, pinching of the skin),<sup>8</sup> ice,<sup>9</sup> or ethyl chloride spray,<sup>10</sup> or a deep inspiration to minimize the discomfort of the first needle poke.
- Start the 1% lidocaine with 1:100,000 epinephrine injection with a half-inch 30G needle on a 3 mL syringe injected slowly under the dermis 2 cm proximal to the most proximal dissection. Inject the first 3 mL very slowly into the subcutaneous tissue without moving the needle at all and observe the skin blanching.
- Introduce the 30G needle perpendicular to the skin and stabilize the syringe with both hands. Keep the needle as still as possible, and avoid wobbling as you inject.
- Only reinsert injection needles in areas already clearly white and swollen with local anesthesia to eliminate needle reinsertion pain. The goal is that the patient only feels the first needle poke and then no more pain during the rest of the local anesthesia injection and the surgery.
- Switch to a larger needle (25G) and inject into the already blanched area. Inject very slowly (repeat "blow slow before you go" in your mind<sup>2</sup>).
- We usually use 15–20 mL in the palm for one cord and 20–40 mL for two or more cords. The proximal and middle phalanges get 2 mL on the palmar side and 2 mL on the dorsal side. Distal phalanges do not usually require more than 0.5 mL on the palmar side if the middle phalanx is injected.
- Make sure to inject on both sides of a cord, as it can act as a barrier to the diffusion of the anesthetic.
- Repeat more distally in two more distal palm injection sites per ray. The second and third pokes will be painless as you inject through the numbed skin at the base of the finger and into the volar aspect of the finger. Finally, inject 2 mL per each proximal and middle phalanx on the palmar side, as well as on the dorsal side if web dissection is required. [See Video 1 (online) for how to inject minimal pain local anesthesia for Dupuytren contracture.]
- Give the epinephrine at least 45 minutes to work to decrease the bleeding.<sup>11,12</sup> This also helps ensure the elimination of pain at the time of surgery.
- When performing surgery on multiple digits, inject the palm widely first, followed by the fingers one after the other, using the same technique.
- As you inject, explain to your patient that the most common side effect of WALANT is the adrenaline rush or jitters associated with epinephrine injection. These can be experienced by at least 3% of patients<sup>13</sup> and are not dissimilar to having had too much coffee or feeling a little shaky. Reassure them that they are not allergic to the local anesthesia and that this is a normal reaction to the adrenaline in the local anesthesia. The adrenaline rush usually goes away by 15–20 minutes after injection.
- Allow 30 minutes or more for deeper anesthesia and vasoconstriction before cutting the skin. Make a note of the time when you finished injecting, let the nurse know, and plan for incision time. We call incision time

or cutting time “tee time” to avoid scaring the patient when communicating in front of them.

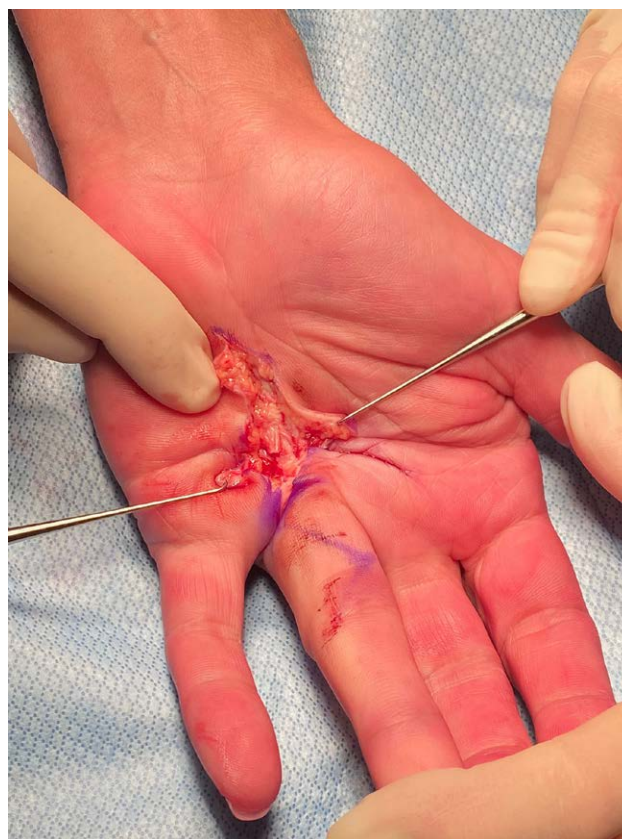
- Encourage patients to play on their phones, watch a movie, or nap.

## OPERATIVE PHASE: PERFORMING SURGERY UNDER WALANT

- Wide-awake patients can walk into the procedure room and do not need to be rolled in. It keeps them in control.
- The senior surgeon (DL) operates on patients in their street clothes in a procedure room in the hospital
- Let patients choose their favorite familiar music to create a pleasant operating or procedure room atmosphere. Have the music play before they walk in.
- After prepping and draping (full or field-only sterility<sup>14</sup>), dim the ceiling lights in the operating room to create a cozy atmosphere. Focus the surgical lamps on the surgical site or use a headlight only.
- A virtual reality device, tablet, or phone with a movie can be entertaining or educational for patients undergoing surgery. Laser shows on the walls and ceiling can also create an immersive and entertaining experience for the wide-awake patient. [See Video 2 (online), which displays laser shows and music in the operating room, creating a unique and memorable immersive experience for the wide-awake patient.]
- Let patients turn on their side if they have a sore shoulder and are more comfortable on their side. Your visibility will still be excellent.

### SURGICAL TIPS FOR SUCCESS

- Dupuytren surgery under WALANT can be more challenging than traditional surgery because the field will not be perfectly bloodless as it would under a tourniquet. Digital arteries still pump when bathed with 1:100,000 epinephrine, and small vascular branches coming off the main digital arteries will bleed when avulsed by surgical dissection of the cords before they go into spasm. Be patient and trust that point bleeding from the skin edges or subcutaneous fat will always stop after the first few minutes of surgery and with gentle, sustained pressure (Fig. 3).
- A cautery is usually not required. There will be no time limitation as the tourniquet is not inflated, and the limb is not ischemic during the procedure.
- If one surgical site is bleeding a little, move to another area to dissect so the bleeding area has time to clot. You can come back to the previously bleeding site later when it is quiet.
- We suggest that operating surgeons should have enough experience that they are comfortable with Dupuytren surgery before using the WALANT approach. Dissecting the cords away from the vessels and nerves can be challenging with a tourniquet. WALANT Dupuytren surgery is not as bloodless as tourniquet surgery.
- It would be wise for surgeons to be comfortable with other easier WALANT procedures before moving on to wide-awake Dupuytren surgery.
- Further caution is required for surgery for recurrences, as the dissection will be more difficult due to previous



**Fig. 3.** A photograph of fasciectomy being performed under WALANT. As can be observed, the field has minimal blood.

scarring. Nevertheless, once the hand surgeon is comfortable with Dupuytren surgery under WALANT, recurring contractures will easily and safely be corrected under WALANT as well.

- Use power magnification such as 3.5× or 4× surgical loupes for precision dissection. Magnification will facilitate the safe dissection of the blood vessels and nerves, which are often entwined in spiral cords.
- Use stitches to retract your skin flaps to free your assistant’s hand from retractors. They can now use their hands to dab the blood. This will help clear the visibility of the dissection site.
- Avoid using scary-sounding words during wide-awake surgery. Use hand gestures to communicate with your staff about surgical instruments and ask for a “number 15” rather than a knife or a blade.
- Performing the surgery standing rather than sitting may facilitate dissection. Being able to walk around the table can allow for a better and easier dissection from the other side.
- Intraoperative patient coaching and education by the surgeon is a unique opportunity to engage with a comfortable, pain-free, and unsedated patient. Speaking with the patient during the procedure deepens the physician-patient relationship, guides them through their rehabilitation, and explains the reason behind the postoperative instructions, which results in greater compliance and better outcomes.

- Use the surgery time to educate the patient about the disease, the fact that we do not cure it, that surgery buys movement in exchange for scarring and recovery time, and how important hand elevation and immobilization are for the first few days, followed by pain guided healing.
- Demonstrating the active and passive range of motion achieved with surgery will help manage expectations and optimize results. Tourniquet-induced paralysis can occur after 7 minutes<sup>15</sup> and is completely eliminated when a tourniquet is not used or inflated.
- In addition, time well spent in the wide-awake operating room can decrease the time spent in the office on patient education while compliance is improved. Patients love talking with their surgeon and team during the surgery when they realize they are comfortable and without pain.
- Close the wound with absorbable stitches to save the patient the discomfort of removing them.
- WALANT allows for avoiding letdown bleeding that can occur after a tourniquet is released. In our experience, using drains is unnecessary. We have not yet had a hematoma because the field is dry when we close, and the awake patients leave well educated in hand elevation and immobilization for the first couple of days.
- Apply dressings on the wounds in a manner that maximizes finger and hand mobility.

### ENDING THE SURGERY WITH STYLE

- Patients do not need to be wheeled out of the operating room. They can simply get up and go home, as they do not need observation in the recovery room because they received no opioids or sedation.
- Patients can drive themselves home,<sup>16</sup> but for legal reasons, should be cautioned about doing so in case they are in an accident. It would be hard for them to prove in a court of law that they were not “impaired” right after a hand operation.
- Patients do not need a responsible adult to stay with them overnight after surgery, unlike following outpatient procedures with general or regional anesthesia.
- Encourage patients to take down their dressing and wash their wounds with tap water under the shower every day, starting on day two or three. Fresh wounds love running water and will look and feel better after cleansing. Instruct them to pat the wound area dry with a clean towel and to apply a new bandage.
- Before they leave, ask them how their experience went and what you could do to improve it. It is an excellent opportunity to get feedback to elevate your game for next time. They will feel you genuinely care, because you do. Try to continuously commit to elevating your patient and surgeon experience.

### CONCLUSIONS

Performing Dupuytren surgery under WALANT can be a pleasurable experience for both surgeons and patients alike. Using the tips and pearls learned over years

of experience will surely transform the experience for the surgeon reader and their wide-awake patients.

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### DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article.*

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