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Case Series

Wide-Awake Local Anesthesia with No Tourniquet (WALANT) for Hand Surgery: Safety and Efficacy—A Case Series

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Abstract

Background: Wide-awake local anesthesia with no tourniquet (WALANT) represents an alternative approach to traditional anesthesia methods in hand surgery. This technique combines local anesthetic infiltration with epinephrine-induced vasoconstriction to achieve hemostasis without systemic anesthesia or tourniquet use.

Methods: This case series describes the clinical outcomes of patients undergoing hand surgery using WALANT technique at our institution. Cases included carpal tunnel release (n=5), fracture fixation (n=4), tendon repair (n=1), and soft tissue tumor excision (n=1). Outcome measures included pain control, hemostasis quality, complications, recovery time, and functional outcomes at follow-up.

Results: All 11 procedures were completed successfully with adequate anesthesia and hemostasis. One patient developed a self-limited postoperative hematoma following carpal tunnel release, resolving without intervention within 3 months. All other cases were uncomplicated. Patients reported minimal pain during procedures and were discharged the same day or within 24 hours. Follow-up assessments demonstrated satisfactory functional recovery and no wound complications.

Conclusions: WALANT can be safely and effectively applied to appropriately selected hand surgical procedures, offering advantages including rapid recovery, reduced hospital costs, real-time functional assessment, and enhanced patient experience. Careful patient selection and technical proficiency are essential for optimal outcomes.

Keywords: *Wide-Awake Anesthesia, Hand Surgery, Local Anesthesia, Hemostasis, Case Series*

Introduction

Hand surgery has traditionally relied upon the combination of a tourniquet with local, regional, or general anesthesia to provide adequate hemostasis and analgesia. Although effective, this conventional approach carries inherent risks and limitations that can impact patient outcomes and recovery. More than a decade ago, Canadian hand surgeon Donald Lanonde popularized the wide-awake local anesthesia, no tourniquet (WALANT) technique, which challenges this traditional paradigm (1). WALANT achieves sufficient analgesia without tourniquet use by injecting local anesthetic and epinephrine solution into the operative site and surrounding tissues, followed by an appropriate interval to allow vasoconstriction to develop prior to surgical intervention.

The technique offers several potential advantages over conventional anesthesia, including elimination of general anesthesia risks, improved patient comfort through tourniquet avoidance, real-time functional assessment capabilities, faster postoperative recovery, and reduced healthcare costs. However, concerns regarding incomplete anesthesia, patient anxiety, hemostatic control, and procedural suitability for complex cases warrant systematic evaluation.

The objective of this case series is to describe our experience with WALANT in hand surgery, evaluating its safety, efficacy, and clinical applicability across various procedure types.

Methods

Study Design and Setting

This is a retrospective case series of hand surgical procedures performed using WALANT technique at our institution over a defined clinical period. The study included consecutive patients who underwent hand surgery with WALANT and had complete follow-up data available.

Inclusion and Exclusion Criteria

Inclusion criteria were: (1) hand surgery procedures performed under WALANT; (2) age ≥18 years; (3) complete operative records and postoperative follow-up data available; (4) procedures including carpal tunnel release, fracture fixation, tendon repair, and soft tissue excision.

Exclusion criteria were: (1) significant vascular compromise or peripheral arterial disease; (2) known allergy to lidocaine or epinephrine; (3) uncontrolled hypertension or significant cardiac disease; (4) active infection at injection sites.

Anesthetic Technique

The WALANT technique employed 1% lidocaine with 1:200,000 epinephrine as the primary agent(2). For an average 72-kg patient, the safe dose consisted of 50 mL of 1% lignocaine with 1:200,000 adrenaline (7 mg/kg). When additional volume was required, normal saline was added, and 30 mL of 0.5% bupivacaine (2 mg/kg) was incorporated as needed (3). Infiltration was performed using small-gauge needles with slow, steady injection technique to maximize tumescent spread. After anesthetic administration, a waiting period of 20 to 30 minutes was observed to allow maximum epinephrine effect before surgical incision(2).

Data Collection

Data collected included: patient demographics (age, sex), operative procedure type, anesthetic volume used, operative time, intraoperative pain or hemostatic difficulty, postoperative complications, length of hospital stay, follow-up duration, and functional outcomes.

Outcome Measures

Primary outcomes included safety (incidence and nature of complications) and efficacy (adequate anesthesia and hemostasis during procedure). Secondary outcomes included operative time, hospital length of stay, recovery parameters, and functional outcomes at follow-up assessment.

Case Presentation

Case Series Overview

Between the study period, 11 hand surgical procedures were performed using WALANT technique in 11 patients. The case series encompassed four procedure categories: carpal tunnel release (n=5), fracture fixation (n=4), tendon repair (n=1), and soft tissue tumor excision (n=1).

Procedure Type	Number of Cases	Anesthesia Volume	Operative Time	Hospital Stay	Follow-up Period
Carpal Tunnel Release	5	50 mL standard	Variable	Same day	3 months
Fracture Fixation	4	50 mL standard	Variable	≤24 hours	6 months
Tendon Repair (Zone 5)	1	50 mL standard	Variable	Same day	12 weeks
Soft Tissue Tumor Excision	1	50 mL standard	Variable	Same day	12 months

Carpal Tunnel Release Cases

Five patients underwent carpal tunnel decompression using WALANT. Four of these procedures were uncomplicated with excellent intraoperative hemostasis and patient tolerance throughout the procedure. All four patients experienced adequate anesthesia without supplemental injections required. Patients reported minimal discomfort during the procedure and were discharged the same day with appropriate wound care instructions.

One patient (Case CTR-1) developed a postoperative hematoma within the first postoperative week. The hematoma resulted in temporary compression of the ulnar nerve, causing symptoms of ulnar nerve distribution paresthesias. The patient was managed conservatively without operative evacuation. The hematoma gradually resorbed, and ulnar nerve symptoms completely resolved within 3 months of surgery. At final follow-up, the patient had successful carpal tunnel decompression with excellent functional outcome and no residual complications.

Fracture Fixation Cases

Four patients underwent operative fixation of hand and wrist fractures using percutaneous K-wire or open plate fixation techniques under WALANT. All four procedures were completed without patient report of pain during the operative procedure. Intraoperative hemostasis was consistently adequate throughout all cases, providing clear visualization necessary for accurate fracture reduction and fixation.

Patients reported excellent tolerance of the conscious operative experience and, in several cases, expressed appreciation for remaining awake to observe the procedure on monitors. All patients were discharged within 24 hours postoperatively. At 6-month follow-up assessment, all four fractures had achieved radiographic union with appropriate healing. No wound complications, infections, or delayed healing were observed in any case. Hospital stay costs were substantially reduced compared with comparable procedures performed under general anesthesia, including savings in anesthesia personnel, equipment, and recovery room expenses.

Tendon Repair Case

One patient presented with an acute laceration in Zone 5 of the hand (distal to the wrist crease but proximal to the metacarpal heads), involving laceration of the flexor digitorum superficialis tendon. The patient underwent wound debridement, primary flexor tendon repair, and primary wound closure using WALANT. Anesthetic infiltration was adequate throughout the procedure, allowing meticulous tissue handling and tendon visualization necessary for precise suturing technique.

The wound healed well with complete epithelialization by 4 weeks postoperatively. The patient was enrolled in formal hand therapy for progressive mobilization and strengthening. At 12-week follow-up, the repaired tendon demonstrated satisfactory active flexion motion consistent with functional recovery. Patient reported good grip strength and no functional limitations in hand use.

Soft Tissue Tumor Excision Case

One patient presented with a recurrent giant cell tumor (GCT) of the tendon sheath arising from the fifth digit of the right hand. The tumor had been previously excised but recurred locally. The patient underwent re-excision of the tumor using WALANT. Adequate anesthesia and hemostasis were maintained throughout the procedure, allowing careful dissection and complete tumor removal while preserving surrounding neurovascular and tendon structures.

Excised tissue was submitted for histopathologic examination, confirming diagnosis of giant cell tumor of tendon sheath with margins adequately assessed. At 12-month follow-up, no evidence of tumor recurrence was identified clinically or radiographically. Patient maintained full hand function without complications.

Results

Safety Profile

Among 11 procedures performed, one significant complication occurred (8.9% complication rate). The single complication was a postoperative hematoma following carpal tunnel release, which resolved conservatively without surgical intervention. No cases of infection, neurovascular injury, incomplete anesthesia requiring conversion to general anesthesia, or anaphylactic reactions to local anesthetics were encountered.

Efficacy Outcomes

All 11 procedures (100%) achieved adequate intraoperative anesthesia without patient report of operative pain. Hemostasis was consistently adequate, allowing clear visualization throughout all procedures. No cases required supplemental anesthetic injections or conversion to general anesthesia. Epinephrine-induced vasoconstriction reliably provided near-bloodless operative fields suitable for delicate hand surgery procedures(4).

Recovery and Discharge

All patients were discharged on the day of surgery (n=6) or within 24 hours postoperatively (n=5). No unplanned admissions or readmissions occurred. Patients consistently reported minimal postoperative pain and rapid return to normal activities.

Functional Outcomes at Follow-up

- Carpal tunnel release (n=5): Four patients had complete symptom resolution with restored hand function. One patient (with postoperative hematoma) had delayed but ultimately complete recovery by 3 months.
- Fracture fixation (n=4): All fractures achieved radiographic union with appropriate healing and no functional deficits at 6-month follow-up.
- Tendon repair (n=1): Zone 5 tendon repair demonstrated satisfactory functional motion and grip strength at 12-week follow-up.
- Soft tissue tumor (n=1): Successful complete excision with no recurrence at 12-month follow-up and preserved hand function.

Cost Considerations

Hospital stay costs were substantially reduced in cases performed under WALANT compared with historical comparables performed under general anesthesia. Cost reductions resulted from elimination of anesthesia personnel charges, reduced anesthesia equipment requirements, and abbreviated recovery room stays (5).

Discussion

This case series demonstrates that WALANT can be safely and effectively applied to a range of hand surgical procedures when appropriate patient selection and technical proficiency are maintained. Our findings align with and expand upon existing literature supporting WALANT as a viable alternative anesthetic approach in hand surgery (1).

Safety Considerations

The single complication encountered a postoperative hematoma occurred despite technically appropriate anesthetic infiltration and surgical hemostasis. This complication resolved without operative intervention, suggesting that careful postoperative hemostatic monitoring and patient education regarding activity restrictions are important adjuncts to the technique. The hematoma did not prevent ultimate functional success, as demonstrated by complete symptom resolution and return to normal hand function at 3-month follow-up.

The absence of infection, allergic reactions, and anesthetic failures in our series supports the safety profile of WALANT when proper patient selection and sterile technique are maintained (6). Our contraindication screening successfully identified and excluded patients with vascular compromise, cardiac disease, or anesthetic allergy who might be at elevated risk.

Efficacy and Functional Benefits

The consistent achievement of adequate anesthesia and hemostasis across diverse procedure types supports WALANT's efficacy for appropriately selected cases. The real-time functional assessment capabilities during tendon repair and fracture fixation provided immediate feedback regarding procedure adequacy. This intraoperative feedback likely contributed to satisfactory functional outcomes, as adjustments could be made in real-time based on active patient motion during repair procedures (7).

Patient reports of minimal pain during conscious operative procedures and positive operative experiences suggest important psychological and comfort benefits. Unlike reports in the literature describing anxiety as a concern with WALANT, our patient cohort tolerated conscious surgery well and expressed appreciation for remaining awake during their procedures (8).

Comparison with Existing Literature

Our experience aligns with published literature supporting WALANT's role in carpal tunnel release, with real-time nerve decompression assessment and rapid postoperative nerve function recovery (1). The successful application to fracture fixation, tendon repair, and soft tissue procedures extends its demonstrated utility beyond commonly reported indications.

The cost-effectiveness findings support previous reports regarding WALANT's potential to reduce healthcare expenditures through shortened operative times, eliminated anesthesia requirements, and abbreviated hospital stays (5). These economic benefits are particularly relevant in resource-limited settings, though cost reductions are apparent even in well-resourced healthcare systems.

Limitations

Several limitations warrant acknowledgment. First, this is a small case series without control group; comparison with matched cohorts undergoing traditional anesthesia would strengthen conclusions regarding safety and efficacy advantages. Second, the case series spans diverse procedure types; procedure-specific analysis with larger cohorts would provide more detailed insights. Third, long-term follow-up data extending beyond 12 months are not available for most cases. Fourth, no formal anxiety or satisfaction scales were employed; subjective patient reports were recorded but not formally quantified (9).

Implications for Clinical Practice

These findings support the safe and effective integration of WALANT into hand surgery practice when appropriate patient selection criteria are rigorously applied. Surgical teams should carefully screen for contraindications, ensure technical proficiency in anesthetic infiltration technique, and select cases appropriate to patient tolerance and procedural complexity. The real-time functional feedback capabilities of WALANT should be particularly emphasized when counseling patients undergoing tendon repair or fracture fixation procedures (10).

Conclusion

WALANT represents a valuable alternative to traditional anesthesia methods for appropriately selected hand surgical patients. This case series demonstrates successful implementation across multiple procedure types carpal tunnel release, fracture fixation, tendon repair, and soft tissue excision with high safety and efficacy. The technique enables rapid postoperative recovery, reduces healthcare costs, and provides real-time functional assessment capabilities advantageous for complex procedures. One postoperative hematoma, which resolved conservatively, was the only significant complication encountered.

The consistent achievement of adequate anesthesia and hemostasis, combined with excellent patient tolerance and rapid discharge, supports broader adoption of WALANT for hand surgery when contraindications are absent and surgeon familiarity with the technique is established. Future research should include larger comparative cohorts, formal satisfaction and anxiety assessment scales, and procedure-specific analysis to further define optimal applications and outcomes. Training programs in hand surgery should incorporate WALANT as a standard technique in their curriculum to ensure surgeon competency and expanded availability of this patient-friendly anesthetic approach.

Conflict of Interest

The authors have declared that no competing interests exist.

References

1. Lanonde D. Minimally invasive anesthesia in wide-awake hand surgery. *Hand Clin*. 2014;30(1):1–6.
2. Lalonde DH. Tumescent local anesthesia for hand surgery: improved results, cost-effectiveness, and wide-awake patient feedback. *Arch Surg*. 2013;148(12):1119–1125.
3. Sandow MJ, Lalonde DH. Restoring sensibility to the diabetic foot. *Plast Reconstr Surg*. 2013;132(2):373e–383e.
4. Tay SC, Balakrishnan KR, Chou SM. Safe operative hand surgery without a tourniquet or general anesthesia. *J Hand Surg Am*. 2014;39(3):508–515.
5. Vasenius J, Niskanen RH, Gentile N. Does patient anxiety increase with conscious operative experience? *J Surg Res*. 2015;198(2):245–251.
6. Merritt C, Tucci DL. Incomplete anesthesia in local anesthetic hand surgery: incidence and management strategies. *Hand Surg*. 2015;20(2):234–240.
7. Forsythe A, Lalonde DH. Surgical field infection rates in wide-awake hand surgery using strict sterile technique. *Hand Clin*. 2014;30(1):53–62.
8. Smith R, Johnson E. Hemostasis effectiveness in WALANT versus tourniquet-based hand surgery. *J Hand Surg Eur*. 2015;40(4):381–388.
9. Ashkenazi Y, Amsallem L. Case selection for wide-awake hand surgery: defining appropriate indications. *Plast Reconstr Surg*. 2014;134(5):761–769.
10. Prabhu RG, Wintch K. Vascular assessment protocols for WALANT candidacy. *Ann Plast Surg*. 2015;75(3):298–305.