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**Patient satisfaction after distal upper limb surgery under WALANT versus axillary block:
a propensity-matched comparative cohort study**

**Satisfaction des patients opérés de la partie distale du membre supérieur sous WALANT
ou bloc axillaire : analyse comparative d'une cohorte avec score de propension**

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In accordance with the current French law and Declaration of Helsinki, this study was approved by Ethic review board (IRB, Centre Hospital Universitaire, Nimes, Place du Professeur Debré, Number 2019-A0112-03, Date : 3/December/2019) and was registered on ClinicalTrials.gov prior to beginning (ClinicalTrials.gov: NCT04855149). Written informed consent was obtained from all participants before inclusion.

Consent to publish:

Not applicable.

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France” but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission.

Authors' contributions:

All authors have read and approved the manuscript. YG: study design and statistical analysis; VM: data acquisition and inclusion; OM and NS: inclusion and data collection and analysis ; PK : data management and collection; PC: principal investigator, study design and writing the manuscript.

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1

2 **Abstract**

3 Distal upper limb surgery is performed under WALANT (Wide Awake Local Anesthesia No
4 Tourniquet) in many outpatient centers because the benefits are numerous: simple, low-cost
5 technique, with fast turnover and short length of stay. In view of a paucity of data concerning
6 patient satisfaction, this non-randomized cohort study was designed to compare EVAN-LR
7 anesthesia satisfaction questionnaire results (information, pain, expectation, attention,
8 discomfort: 0-100 points) between patients receiving WALANT or axillary nerve block (AxB).
9 After IRB approval, patients (>18 years, stable ASA 1-3) scheduled for outpatient distal upper
10 limb surgery were prospectively enrolled in the two groups. At discharge, patients in both
11 groups received standard information on postoperative recovery and care, with a multimodal
12 analgesic regime (acetaminophen and ketoprofen for 5 days). The primary endpoint was EVAN-
13 LR score before discharge. Secondary endpoints were pain relief and side-effects over a 7-day
14 period. Results were recorded as median and 25-75% interquartile range. Propensity-score-
15 matched analysis was performed. Over the study period, from October 2019 to November 2020,
16 183 patients were included; 48 WALANT patients were propensity-score matched to 48 AxB
17 patients. Pre-procedural APAIS anxiety score was lower in the WALANT than the AxB group: 9
18 (IQR, 6-12) vs 12 (IQR, 8-14) (p=0.01). EVAN-LR scores were similar between the WALANT
19 (78 [72-82]) and the AxB group (73[67-80]. Incidences of paresthesia and of pain (NRS pain
20 score, opioid rescue) were similar. WALANT patients had shorter length of stay: 135 (110-175)
21 min vs 170 (110-250) min (p=0.01). The present study demonstrated that WALANT was
22 associated with a high level of patient satisfaction. For clinical relevance and quality of care,
23 WALANT should be proposed in first line for distal limb surgery.

24

25 **Résumé**

26 La chirurgie distale du membre supérieur sous WALANT s'est développée dans de nombreux
27 centres ambulatoires en raison de nombreux avantages : simplicité technique, faible coût,
28 rotation rapide, courte durée de séjour. Peu d'études rapportent la satisfaction des patients
29 opérés sous WALANT. Cette étude de cohorte non randomisée a été conçue pour comparer les

30 questionnaires EVAN-LR (information, douleur, attente, attention, inconfort : 0-100 points) des
31 patients opérés sous WALANT ou sous bloc nerveux axillaire (BAx). Après accord de l'IRB, les
32 patients (>18 ans, ASA 1-3) prévus en ambulatoire pour une chirurgie distale du membre
33 supérieur ont été prospectivement inscrits dans deux groupes: WALANT ou BAx. A leur sortie,
34 les patients ont reçu les mêmes informations concernant leur rétablissement et des soins
35 postopératoires dont leur analgésie orale multimodale (acétaminophène, kétoprofène pendant 5
36 jours). Le critère d'évaluation principal était le score EVAN-LR réalisé avant la sortie. Les
37 critères d'évaluation secondaires étaient le soulagement de la douleur et les effets secondaires
38 sur une période de 7 jours. Les résultats ont été enregistrés sous forme de médiane et
39 d'interquartiles (25-75). Une analyse appariée par score de propension a été réalisée. Sur la
40 période d'étude (octobre 2019-novembre 2020), 183 patients ont été inclus et 48 patients avec
41 WALANT ont été appariés par score de propension à 48 patients avec BAx. Le score d'anxiété
42 APAIS avant la procédure était plus faible dans le groupe WALANT par rapport au groupe Bax :
43 9 (6-12) vs. 12 (8-14) ($p=0,01$). Les scores EVAN-LR étaient similaires entre le groupe
44 WALANT, 78 (72-82) et le groupe BAx, 73 (67-80). L'incidence de la paresthésie et le
45 soulagement de la douleur (score de douleur, consommation d'antalgiques opiacés
46 additionnels) étaient similaires. Les patients du groupe WALANT ont eu une durée totale de
47 séjour plus courte dans le centre : 135 (110-175) min vs. 170 (110-250) min ($p=0,01$). La
48 présente étude démontre que la WALANT est associé à un niveau élevé de satisfaction des
49 patients. Pour la pertinence clinique et la qualité des soins, cette série souligne que la WALANT
50 devrait être proposé en première intention pour la chirurgie distale des membres.

51

52

53 *Keywords:* WALANT; Axillary block; Pain; Satisfaction; Paresthesia; EVAN score

54

55 *Mots-clés :* WALANT ; Bloc axillaire ; Douleur ; Satisfaction ; Paresthésie ; Score EVAN

56

57

58 1. Introduction

59 Over the past 10 years, the Wide Awake Local Anesthesia No Tourniquet (WALANT)
60 technique has been used in many centers [1-3]. As demonstrated by several authors, this
61 technique enables more patients to be treated, more safely, and at lower cost. Stay is also
62 shorter, as little to no recovery time is needed. Studies reported that there was no need for a
63 tourniquet and no need to accelerate or change medication schedules, which is particularly
64 helpful for many diseases (diabetes or cardiac or renal failure) [3-5]. In contrast, the same
65 surgeries performed under general anesthesia or peripheral nerve block incurred higher costs,
66 more adverse effects such as nausea and vomiting, or motor impairment (e.g., loss of grip
67 strength) that can be harmful for the patients in the early postoperative period [6].

68 However, WALANT is not without risk, and some adverse events have been reported:
69 intoxication by local anesthetics due to overdose, and digital necrosis with the use of procaine
70 or cocaine. Currently, regional anesthesia with a pneumatic tourniquet on the arm is often
71 preferred for hand surgery, using an axillary block (AxB). In this case, a pneumatic tourniquet
72 minimizes intraoperative blood loss and improves the visibility of the operative field. However, it
73 can be a source of discomfort, pain or transient neurological deficit [5-6].

74 To date, few studies comparing WALANT and AxB are available, and none evaluated
75 patients' perioperative experience or the incidence of paresthesia in the short and long term.

76 In order to measure the perioperative satisfaction of patients undergoing hand surgery with AxB
77 or WALANT, we conducted a prospective observational non-randomized study evaluating the
78 EVAN-LR (*Evaluation du Vécu de l'Anesthésie LocoRégionale*: evaluation of experience of
79 locoregional anesthesia) satisfaction score at discharge using propensity-score-matched
80 analysis (Appendix 1) [7]. The endpoints were rates of postoperative adverse events (digital
81 necrosis, paresthesia, local anesthetic intoxication, infection in the operated limb) and
82 consumption of postoperative analgesia according to group.

83

84 2. Patients and methods

85 2.1. Institutional Review Board approval, consent, and setting

86 In line with French law, the present study was approved by the institutional review board (IRB,
87 Centre Hospitalier Universitaire, Place du Professeur Debré, Nimes; n° 2019-A0112-03,
88 December 3rd, 2019) and was registered on ClinicalTrials.gov (NCT04855149). The STROBE
89 recommendations for reporting cohorts were followed.

90 All participants had given written informed consent before inclusion.

91

92 2.2. Study design, patients, and group allocation

93 This was a prospective non-randomized controlled trial. All patients >18 years with
94 American Society of Anesthesiologists (ASA) physical status score 1-3, scheduled for outpatient
95 distal upper limb surgery (elbow, wrist, hand, finger) under WALANT or AxB were eligible and
96 approached by the surgeon or the investigators. Non-inclusion criteria were: ASA status 4 or
97 unstable 3; refusal to participate; age >80 years; weight <50 kg; emergency or bilateral surgery;
98 any contraindication to regional anesthesia; psychiatric disorder (delirium, dementia);
99 pregnancy; alcohol or drug abuse; uncontrolled epilepsy; patient unlikely to be fully cooperative;
100 and participation in another study within the previous 30 days. Patients reporting any allergy for
101 or contraindication to the study drugs were not included.

102 This was a non-randomized study: group allocation was proposed to the patient, who
103 could freely choose to be operated under WALANT or AxB. For WALANT, only one experienced
104 surgeon performed the anesthesia; AxB was performed by experienced anesthesiologists.

105

106 2.3. Study groups

107 In both groups, patients were admitted in the outpatient center in the morning; no
108 premedication was given. WALANT and AxB injections were performed in the preoperative
109 room. For AxB, patients were monitored and intravenous (IV) access was secured. No sedation
110 was performed in either group.

111

112 2.3.1. WALANT group

113 After the skin was prepared with povidone iodine, anesthesia was performed with a 25G
114 needle, according to the technique described by Lalonde [6]. Local anesthetic was injected into

115 the planned area of incision and dissection. The solution of lidocaine 10 mg.mL⁻¹ and
116 epinephrine 5µg was diluted 1:1 with an isotonic solution of sodium chloride to obtain a solution
117 of lidocaine 5 mg.mL⁻¹ + epinephrine 2.5µg.mL⁻¹.

118

119 2.3.2. AxB group

120 AxB was performed under ultrasound guidance. Briefly, using an ultrasound approach
121 (LogiqE 7, GE, USA), the median, ulnar, musculocutaneous and radial nerves were identified
122 and located around the axillary artery. Then, a 100 mm needle (Stimuplex, B Braun, Germany)
123 was inserted in the axillary area in the plane of the probe and approached to the four nerves.
124 Five mL mepivacaine 15 mg.mL⁻¹ was injected around each nerve.

125

126 2.4. Surgery and standard postoperative care

127 For all patients, surgery was performed in the operating room by same experienced
128 surgeon (>5 years of practice, >500 procedures). In case of pain during surgery, additional local
129 anesthesia (lidocaine 5 mg.mL⁻¹) could be injected.

130 At the end of surgery, patients were transferred to the post-anesthesia care unit (PACU).
131 At the PACU, patients with pain >3/10 on a numeric rating scale (NRS, 0-10: 0, no pain; 10,
132 worst imaginable pain) were registered and received acetaminophen and ketoprofen if needed.

133 Both groups were then managed similarly in a standardized manner, with rapid
134 rehabilitation (early oral intake, walking and eating as early as possible and at least before
135 discharge); IV ondansetron (4mg) was injected in case of nausea or vomiting. Patients were
136 discharged from the outpatient unit when their Chung score was 9-10/10 [8].

137 At discharge, patients received standard information regarding postoperative recovery
138 and care at home (analgesia, dressing change, etc.). A 24-hour telephone helpline was
139 available if they had any questions or concerns out of office hours, and they were advised to
140 contact the local hospital's emergency department if in need of acute care. After discharge, both
141 groups systematically received standard oral analgesic drugs: acetaminophen (1g every 6
142 hours) combined with ketoprofen (100 mg every 12 hours) for 5 days.

143

144 2.5. Clinical assessment

145 In our study, the Amsterdam Preoperative Anxiety and Information Scale (APAIS) was
146 self-administered on the day of surgery at arrival [9]. Pain intensity at rest and maximum pain
147 were rated on an NRS (0 = no pain and 10 = worst imaginable pain) in the PACU, at discharge,
148 and on Day 1 and Day 7 [8]. Any adverse events arising from the analgesic protocol were
149 systematically assessed: nausea, vomiting, urinary retention, drowsiness, dizziness, headache,
150 sweating, pruritus, confusion/hallucination, sedation, and sore throat. On Days 1 and 7, nurses
151 from the outpatient center telephoned the patients and recorded any adverse events, quality of
152 sleep, comfort and anxiety using a 0-10 NRS. Rescue doses of study drugs, additional drugs or
153 discontinuation of study drugs were also recorded.

154 At discharge, patients filled out the self-administered EVAN-LR questionnaire [7]
155 (Appendix 1). All medical or surgical complications (including readmission) throughout the study
156 period were recorded. The 19-item questionnaire comprises 5 components: attention,
157 information, discomfort, expectation and pain [7]. Based on their expectations, patients score
158 from 1 (much worse than I expected) to 5 (much better than I expected). The total score is thus
159 out of 95 points.

160

161 2.6. Endpoints and sample-size calculation

162 The primary endpoint was the total EVAN-LR score at discharge, ranging between 5 and
163 95. A difference of more than 5 points between groups was considered clinically relevant
164 (confidence interval CI: 10 points). A minimum 45 subjects per group was estimated to be
165 necessary to demonstrate a difference between the two groups (alpha risk at 5% and beta risk
166 error 80%). Secondary endpoints were paresthesia and pain relief following surgery during the
167 first 7 postoperative days.

168

169 2.7. Statistical analysis

170 Statistical analysis used SAS software, version 9.4 (SAS Inc., Cary, NC). An initial
171 analysis was performed for both groups as a whole (Table 1), followed by a propensity-matched
172 analysis. Matching used a 1:1, greedy, nearest neighbor strategy, with a caliper set to 0.1,

173 which resulted in the matching of 48 WALANT patients to 48 AxB patients. The Shapiro-Wilk
174 test was used to test for normal distribution of continuous variables. Statistical results were
175 expressed as mean (SD) or median [25–75 IQR], according to distribution. Numbers and
176 percentages were given for categorical variables. Comparison of continuous variables between
177 groups used Student's t-test or Wilcoxon-Mann-Whitney test, according to distribution.
178 Categorical variables were compared between groups by χ^2 or Fisher's exact test. All statistical
179 tests were two-sided, with the significance threshold set at $p < 0.05$.

180

181 **3. Results**

182 3.1. Study population

183 Between October 2019 and November 2020, 202 patients were approached to
184 participate in the study. Nineteen were not included, for the following reasons: age < 18 years
185 ($n=4$), other surgical site ($n=8$), incomplete records ($n=4$), or duplicate records ($n=3$). A total of
186 183 patients were analyzed: 106 in the WALANT group and 77 in the AxB group (Table 1). After
187 matching, 48 patients in each group were again analyzed (Table 2). Demographic, anesthesia
188 and surgery data are shown in Table 1. After matching, baseline patient characteristics and type
189 of surgery were similar between groups (Table 2).

190

191 3.2. Primary endpoint

192 Total EVAN-LR score was 73 (IQR, 67-80) in the AxB group and 78 (IQR, 72-82) in the
193 WALANT group ($p=0.20$) (Fig. 1). Data for each EVAN-LR component (information, pain,
194 expectation, attention, discomfort) were similar between the groups (Fig. 1). Removing the 3
195 regional anesthesia information items, the EVAN-LR score was 65 (59-70) in the AxB group and
196 66 (60-70) in the WALANT group ($p=0.68$).

197

198 3.3. Secondary endpoints

199 Pre- and post-operative pain scores did not differ at any time point (D0, D1, and D7)
200 (Table 3). Anxiety on APAIS score was lower in the WALANT group (Table 1). The rate of

201 surgical complications, including paresthesia, was similar between the two groups at D1 and D7
202 (Table 3).

203 The times spent for each step are shown in Table 2. Total hospital stay was shorter in
204 the WALANT group than in the AxB group (Table 1).

205

206 **4. Discussion**

207 In this prospective matching observational study after upper limb surgery, the WALANT
208 group presented similar satisfaction scores and outcomes, in terms of pain relief and analgesic
209 rescue, to the axillary block group, but with a lower level of anxiety at admission and faster
210 discharge.

211 Perioperative experience and patient satisfaction are increasingly preponderant quality
212 indicators in the evaluation of health establishments and the management of care. The
213 originality of the present results lies in the use of a robust and validated quality instrument, the
214 EVAN-LR score, and in the large cohort evaluated. The study demonstrated that the satisfaction
215 scores of patients operated under WALANT were similar to those of patients operated on with
216 the conventional technique (axillary block) [10]. These results confirm previous findings in 31
217 patients with bilateral carpal tunnel syndrome, who underwent surgery under WALANT without
218 sedation for one side and under sedation for the other side. The authors found no significant
219 difference in satisfaction between the two anesthetic techniques 6 weeks after surgery [11].

220 The present study evaluated the patients using the EVAN-LR score, a composite score
221 enabling more detailed assessment of patient satisfaction, which is ultimately multi-factorial.
222 Analysis of the 5 components of the score did not show any predominance in favor of the
223 WALANT group. On the other hand, the level of preoperative anxiety was clearly lower in the
224 WALANT group (Table 1). Similar results were reported in a retrospective study of 31 patients
225 undergoing foot and ankle surgery under WALANT, with low preoperative anxiety on VAS-A
226 score [12]. This lower anxiety has several reasons. The first is undoubtedly the absence of
227 anesthetic pathway (stress linked to the performance of the block by an unknown anesthetist);
228 the second is that local anesthesia, performed by a surgeon whom the patient knows, is not
229 considered invasive, unlike regional anesthesia. These hypotheses need be evaluated. Scores

230 for evaluating anesthesia techniques lack evidence base, and the EVAN score is considered the
231 most robust. Scores evaluating the quality of anesthesia mainly assess quality of care, in
232 particular the EQ5D and QOR 40 scores, which focus more on care than on the technique [13].

233 Regarding postoperative pain, 30 patients used tramadol or opioids postoperatively: 12
234 in the WALANT group and 18 in the AxB group. Four of these patients in the WALANT group
235 had undergone trapeziometacarpal arthroplasty. This leads us to raise the question of a pain
236 rebound effect in WALANT for major procedures: pain rebound after regional anesthesia is well
237 known, and there seems to be a similar problem for WALANT for major surgery. Larsen et al.
238 discussed adding a long-acting local anesthetic to limit this rebound effect [14].

239 Regarding complications, 2 patients in the WALANT group presented a vagal symptom
240 under local anesthesia, without loss of consciousness. This complication is classic with local
241 injections and encourages the use of the supine position to limit the risk of falling. International
242 guidelines do not mandate monitoring for low doses of local anesthetic. To reduce the risk of
243 systemic toxicity, surgical teams should pay attention to the maximum dose. In our study, we
244 did not find any significant difference in occurrence of postoperative paresthesia between the
245 two techniques. This result will have to be analyzed in a larger cohort, because the advocates of
246 WALANT put forward this argument of fewer complications (paresthesia) than with regional
247 anesthesia to promote their technique.

248 In our study, stay in the outpatient center was shorter in the WALANT than in the AxB
249 group, due to rapid passage into the postoperative care unit. In the logic of enhanced recovery
250 after surgery, WALANT seems more appropriate and clearly more beneficial than regional
251 anesthesia (Table 1) [15]. In addition, this shorter stay reduces the cost of surgery (not analyzed
252 in the present study). Recently, an American study of 352,779 patients undergoing hand
253 surgery (de Quervain's tendonitis, carpal tunnel syndrome) found that, over 5 years, a saving of
254 \$133 million could have been made by the absence of an anesthetist if these procedures had
255 been performed under WALANT [16]. Many studies today support this, showing cost saving
256 when WALANT is used instead of general anesthesia or regional block for distal upper limb
257 surgery [16-19].

258 There are many limitations to the present study. The first is the absence of
259 randomization between groups, leading to a selection bias, with potentially easier or more
260 difficult surgeries in one group and different patient profiles in surgical terms, as shown in Table
261 1. Also, the surgeries in the WALANT group were predominantly soft tissue procedures (carpal
262 tunnel, trigger finger release), whereas they were bone-and-joint procedures (osteosynthesis) in
263 the AxB group before matching, and similar after matching. A second limitation was that the
264 operators performing the axillary block were several, unlike for WALANT in which there was
265 only one operator, who moreover knew and followed the patients, which probably created a bias
266 in the satisfaction analysis because the caregiver-patient relation was not the same as in the
267 AxB group.

268

269 **5. Conclusion**

270 This non-randomized matching study showed high satisfaction in patients undergoing
271 upper limb surgery under WALANT, with similar adverse events in terms of pain and
272 paresthesia over the first 7 postoperative days compared to axillary block. A randomized study
273 could confirm these findings.

274

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277

278 **Competing interests:**

279 The authors declare that they have no competing interests.

280

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284 in writing the manuscript.

285

286 **Ethics approval and consent:**

287 In accordance with current French law and Declaration of Helsinki, this study was approved by
288 local institutional review board (IRB, Centre Hospitalier Universitaire, Nimes, Place du
289 Professeur Debré; n° 2019-A0112-03, December 3, 2019) and was registered at
290 ClinicalTrials.gov prior to launch (ClinicalTrials.gov: NCT04855149). Written informed consent
291 was obtained from all participants before inclusion.

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293

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- 339
- 340
- 341

342 **Table titles**

343 **Table 1.** Demographics and surgery (before matching)

344 **Table 2.** Demographics and surgery (after matching)

345 **Table 3.** Side-effects and pain relief

346

347 **Figure legends**

348 **Fig. 1.** EVAN-LR score for each component.

349 .

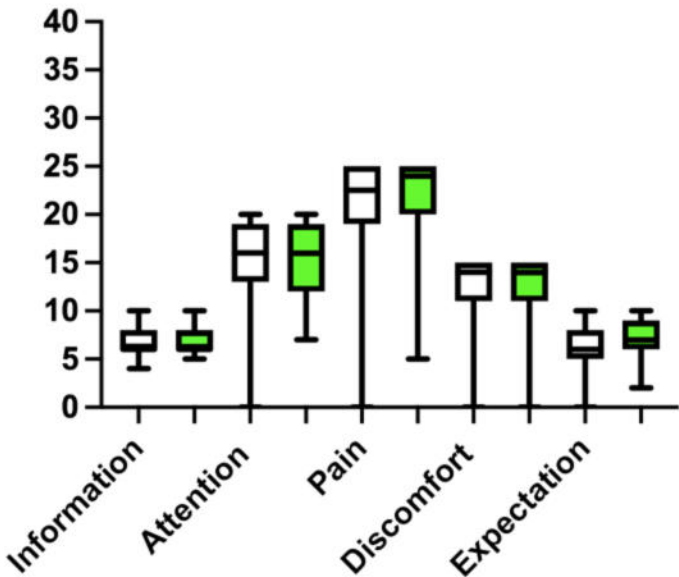


Table 1. Demographics and surgery (before matching)

	WALANT	Axillary block	p
N	106	77	
Age (years)	60 (49-72)	58 (38-67)	0.05
Gender (male)	48 (45)	42 (54)*	0.01
Weight (kg)	75 (65-85)	72 (62-83)	0.61
Height (cm)	169 (161-176)	169 (162-176)	0.36
ASA status score	1 (1-2)	2 (1-2)*	0.04
APAIS anxiety score	10 (7-12)	12 (8-14)*	0.03
Surgery			
Carpal and ulnar tunnel	35	16	
Trigger finger	19	0	
Hardware removal	12	5	
Trapeziometacarpal arthroplasty	9	6	
Osteosynthesis	8	17	
Tendon transfer	6	3	
Tenotomy	4	0	
Dupuytren disease	3	10	
Synovial ganglion	3	4	
Lacertus fibrosus release	2	1	
Arthroscopy: wrist	1	8	
Flap	0	3	
Other	4	4	
Time for each step			
Preoperative area (min)	44 (25-93)	60 (27-135)	0.19
Time to perform anesthesia (min)	5 (5-7)	15 (10-25)*	0.001
Surgery (min)	13 (8-20)	25 (16-39)*	0.001
PACU time (min)	53 (32-76)*	32 (21-57)	0.002
Time from entrance to discharge (min)	140 (109-184)	182 (112-262)*	0.01

Values are number (percentage) or median (interquartile range)

*p< 0.05 vs WALANT group

PACU: post-anesthesia care unit

Table 2. Demographics and surgery (after matching)

	WALANT	Axillary block	p
N	48	48	
Age (years)	60 (49-71)	58 (45-65)	0.26
Gender (male)	25 (52)	24 (50)	0.90
Weight (kg)	78 (65-85)	73 (60-84)	0.28
Height (cm)	170 (162-178)	169 (162-176)	0.45
ASA status score	2 (1-2)	2 (1-2)	0.04
APAIS anxiety score	9 (6-12)	13 (8-14)	0.01
Surgery			
Carpal and ulnar tunnel nerve	16	16	
Hardware removal	4	4	
Trapeziometacarpal arthroplasty	6	6	
Osteosynthesis	6	6	
Tendon transfer	4	3	
Dupuytren disease	3	3	
Synovial ganglion	3	4	
Other	6	6	
Time for each step			
Preoperative area (min)	44 (25-93)	60 (27-135)	0.19
Time to perform anesthesia (min)	7 (5-8)	15 (10-26)	0.001
Surgery (min)	13 (8-25)	23 (13-34)	0.01
PACU time (min)	50 (35-80)	31 (19-49)	0.01
Time from entrance to discharge (min)	135 (110-175)	170 (110-250)	0.01

Values are number (percentage) or median (interquartile range)

*p< 0.05 vs WALANT group

PACU: post-anesthesia care unit

Table 3. Side-effects and pain relief

	WALANT	Axillary block	p
Paresthesia			
Day 1	16 (21)	11 (22)	0.25
Day 7	13 (27)	7 (15)	0.07
Systemic complications	0	0	1
Local complications			
- Infection	1	0	0.8
- Necrosis	0	0	1
Pain score at rest			
Before surgery	0 (0-3)	0 (0-1)	0.31
In PACU	0	0	1
Day 1	3 (0-5)	3 (1-6)	0.44
Day 7	0 (0-3)	0 (0-6)	0.9

Values are number (percentage) or median (interquartile range)

*p< 0.05 vs WALANT group

PACU: post-anesthesia care unit