Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 5 Issue 9 September 2022

Research Article

Patient Satisfaction in Forefoot Surgery Using Walant Technique

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DOI: 10.31080/ASOR.2022.05.0552

Received: July 14, 2022

Published: August 16, 2022

Abstract

Several anesthetic techniques are used in foot and ankle surgery, WALANT technique is one of them that has several advantages: fast procedure, no ischemia or tourniquet needed, dynamic evaluation. Less preoperative test are needed and the total cost is reduced. It has very successful proven in upper extremity.

We would like to evaluate the patient satisfaction of the WALANT technique in forefoot surgery.

21 patients are included in the study. 66% of the patients had no pain and 19% had minimal pain during the surgery. 85% of the cases recommended or strongly recommended this technique for the forefoot surgery.

Our results indicate that WALANT surgery is a safe with very good satisfaction indicators for the patients.

Keywords: WALANT Technique; Forefoot; Tourniquet

Introduction

Forefoot surgery is usually performed using popliteal block anesthesia or regional anesthesia using an ankle block which commonly requires a tourniquet to induce foot ischemia and perform the surgery in a bloodless surgical field.

The use of a tourniquet to induce ischemia for lower limb surgeries has been related to several postoperative complications such as nerve injury or complex regional pain syndrome [1].

Wide Awake Local Anaesthesia Technique, or WALANT, has been successfully used in upper limb surgery with proven safety, it allows a dynamic evaluation while performing surgery, with positive patient satisfaction, and ultimately has lowered surgery-related costs [2].

To correctly perform WALANT, local anesthesia such as lidocaine is used mixed with adrenaline or epinephrine [3]. The resulting vasoconstriction in the diffused area with adrenaline allows avoiding tourniquet to induce ischemia while having a clean bloodless field.

By preserving motor function, WALANT technique allows an intraoperative dynamic assessment with significant advantages by permitting corroborate stability and proper tension achieved during surgical reconstructions.

The WALANT technique does not require preoperative tests or evaluations and can be performed without an anaesthesiologist present [4].

These great advantages have made us quickly introduce this technique on a daily basis to perform foot and ankle surgery, especially during covid times when the lack of anaesthesiologists in the operation room became a reality [5].

Our goal is to assess patient satisfaction and experience after performing forefoot surgery with WALANT technique.

Methods

A prospective study was designed recruiting 21 patients who underwent Hallux Valgus surgery with WALANT technique in the period between February 2019 and August 2021.

Each patient was diagnosed with forefoot deformity which required surgical intervention, by a foot and ankle specialist. Patients were informed about the surgical technique and WALANT anesthetic procedure which would be later used.

The WALANT technique was performed by the surgeon 30 minutes prior to the procedure in the preoperative room. Each patient was initially sedated with intravenous 2mg midazolam.

Infiltration was performed with 5cc physiologic saline solution, 5cc lidocaine 2% (0,1g), 2cc bicarbonate, 0,2 ml epinephrine 1/1.000.000, resulting in a 12 ml dilution.

The infiltration of the WALANT solution is performed according to the Mayo Technique, which consists of starting in the medial aspect of the first metatarsal, slowly spreading to the dorsal and plantar aspect, followed by infiltrating the metatarsophalangeal joint and finally the first commissure.

Patients underwent surgery following the appropriate surgical technique which was planned beforehand. No tourniquet was required to induce ischemia for the surgery since the WALANT used dilution already produces local vasoconstriction.

Each case was postoperatively assessed, to evaluate patient satisfaction related to the chosen anesthetic procedure for the surgery, in this case, WALANT anesthetic technique.

Each patient correctly filled out a questionnaire that collects feedback on the preoperative anxiety, subjective appraisement of the surgery, and a global evaluation of the experience. This questionnaire is based on the psychometric Likert scale, based on a 5-point system, obtaining enough information about the overall experience.

Results

A total of 21 patients were included, the average age was 58,8 years (from 29 to 75 y/o). And followed distribution of 95% women and 5% men (TABLE 1).

The collected information regarding anxiety experienced preoperatively by the patients gave us the following results: 9 out of the 21 patients refer to having experienced no anxiety, 3 of them refer little anxiety, 7 express no more anxiety than expected for any other type of procedure and only 2 have expressed to feel more anxious than usual prior the surgery.

Out of the entire group, 14 patients (66%) considered the technique to be painless, 4 patients or 19% refer to it as light pain, whereas only 14,2% considered it to be irritating. No patient referred to it as very painful.

Regarding postoperative recovery of the anesthesia, it is requested from the patients to punctuate how long they perceived it to be. 12 patients considered the recovery time to be normal from their perspective, 6 stated it was fast, 2 report a slow recovery, and 1 patient sensed it to be prolonged.

85% of the group patients would recommend this anesthetic technique to go through surgery. Regarding the global assessment of the technique from 1 to 10, patients have given it 10/10 in the 52% of the cases, 23% give it 9/10, 19% rate it as 8/10, and only a 4,7% give it 7/10.

8 patients from our group of 21 have previously gone through Hallux valgus surgery and with different anesthetic technique. This group, representing 32%, was particularly asked which technique they preferred, and the 62% expressed they would choose WALANT technique (Table 3 and 4).

Patient information	
Age	58,8 +- 23
Gender	
Female	95%
Male	5%

Table 1: Patients clinical features.

	Nº of patients	%
Painless	14	66,66%
Minimally painful	4	19,04%
Mild pain	3	14,28%
Painful	-	-
Very painful	-	-

Table 2: Patient pain perception while undergoing surgery using WALANT (2).

(1) WALANT: Wide awake local anesthesia no tourniquet.

Previous HV surgery	Nº Patients	%
NO	13	61,90%
SI	8	38,09%

Table 3: Patients who had previously undergone HV surgery using a different anesthetic technique.

HV: Hallux valgus.

Preferred technique	Nº patients	%
WALANT	5	62,5%
Other	3	37,55

Table 4: WALANT(1) vs Other anesthetic technique (2).

(1) WALANT: Wide awake local anesthesia non-tourniquet (2) HV: Hallux valgus.

	Nº Patients	%
Not recommendable	-	-
Little recommendable	2	9,5%
Recommendable	8	38%
Strongly recommendable	10	47,6%

Table 5: Level of recommendation of the WALANT Technique by.

(1) WALANT: Wide awake local anesthesia non-tourniquet (2) HV: Hallux valgus.

Conclusion

The WALANT ANAESTHETIC technique has demonstrated to be a reliable, safe and effective in upper limb surgeries. The outcome of many different studies shows a high safety level and obtained satisfaction from the surgeon and patient [6-8].

The advantages of this technique for upper and lower limb surgeries are the ability of the surgeon to visualize static and dynamic movements while performing certain surgeries, the possibility of having a clean and bloodless surgical field without the use of a tourniquet, no need for preoperative tests and the possibility of treating patients who take anticoagulant medications.

Unlike upper limb surgeries performed with the WALANT technique, in which there are several studies that support its safety, the results and the positive patient feedback, foot and ankle surgeries are still a field with limited information related to WALANT technique [9-11].

Our group has published studies with the WALANT technique for foot and ankle surgeries. For the last 2 years, most of our forefoot surgeries have been done under this mentioned technique, more recently exploring the Achilles tendon surgery and tendinous surgery such as the peroneus tendons, obtaining acceptable to excellent results.

One of the doubts raised while medically exploring this field as if the patient perceived and was satisfied enough while undergoing surgical procedures with the WALANT technique.

Having this goal in mind, this study was developed so we could understand and know how pleased patients were with this technique. The excellent results and high satisfaction expressed by patients in the obtained information keep adding value to this anesthetic technique.

Patients' comfort, fast recovery time, and back to normal life, and the overall positive global perception are aspects that play an important role when deciding among different anesthetic techniques.

We are currently developing a prospective comparative study between the conventional popliteal block and the WALANT technique which will have more scientific evidence weight.

In conclusion, we can state the WALANT technique for forefoot surgery has a high satisfaction level from the patient perspective adding more value to this technique and becoming one of the many reasons to keep exploring it.

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