

WIDE AWAKE LOCAL ANESTHESIA NO TOURNIQUET (WALANT) IN FLEXOR TENDONS REPAIR OF THE HAND - A PROSPECTIVE STUDY

Hossam Yahia Elkafrawy, Saad Mohamed Saad, Mohamed Mahmoud Soffar, Moutaz Essam El Abassy,* Mohamed Salem Abd Elmonem Salem

Department of Plastic and Reconstructive Surgery, Department of Anaesthesia and Surgical Intensive Care,* Faculty of Medicine, Alexandria University

Introduction

Flexor tendon injuries are relatively common and occur mostly by penetrating trauma leading to significant morbidity and limited function if not properly addressed. The incidence is higher in men and is inversely related to age. Due to the anatomy of the flexor tendons, which are located in a flexor sheath, there have unique characteristics that require good surgical technique as well as a good rehabilitation protocol to regain function Up to a decade ago, this surgery was performed under general anesthesia, brachial plexus block, or local anesthesia with sedation, but the problem is the bloody field and poor visibility. To prevent blood loss, a tourniquet must be used to maintain a bloodless field. However, tourniquets also cause problems for patients, such as pain, discomfort, and short duration. In addition, the flexion-extension test was performed passively by the surgeon. With the advent, a new technique, wide-awake local anesthesia no tourniquet (WALANT), has been introduced using different drugs such as lidocaine for anesthesia in combination with epinephrine for hemostasis, and the operations can proceed while the patient is awake in tendon repair surgery, so the flexion-extension test is directly performed by the patient that can actively move the tendon during surgery, before skin closure.

Aim of the Work

The aim of this study was to assess the effectiveness as well as confirm the safety of using WALANT method in the repair of flexor tendon injuries of the hand.

Patients and Methods

This study included 40 adult patients with flexor tendon injury of the hand who were admitted to the ER unit at Alexandria Main University Hospital and Abu Quir General Hospital and underwent surgical repair of the flexor tendon of the hand using WALANT technique. Preparation of the anesthetic solution for WALANT The injected solution was composed of lidocaine 1% or lidocaine 2% diluted 1:1 with saline with a maximum dose of 7 mg/kg, 1:100,000 epinephrine, and 1: 20 ratio of 8.4% sodium bicarbonate to buffer the acidic pH of the lidocaine. If a surgical procedure was expected to take longer than 2.5 hours, up to 20 mL of 0.5% bupivacaine with 1:200,000 epinephrine was added to the total volume.

Administration of Wide-Awake Local Anaesthesia No Tourniquet:

The local anesthetic was warmed to body temperature and then injected using a 27-gauge needle via subcutaneous route until tissue edema or tumescent effect occurred.

Before each injection suction must be done to make sure that needle is not inside blood vessel .

The injected amount was variable according to the severity and extent of the injury as well as the maximum dose of lidocaine.

Suture technique

Two locking Kessler core suture repairs (4-strand repair) using 3-0 or 4-0 prolene or Ethibond (round needle) with a running 6-0 nylon epitenon suture were applied.

Results

Table 1: Distribution analysis of the studied cases according to adrenaline efficacy (n=40)

	No.	%
Number of gauzes		
Min. – Max.	1.0 – 4.0	
Mean ± SD.	1.78 ± 0.86	
Median (IQR)	2.00 (1.0 – 2.0)	
Bloodless field		
No	4	10.0
Yes	36	90.0
Need to use other hemostatic measures		
No	36	90.0
Yes	4	10.0

Table 2: Comparison between the studied periods according to pain by VAS (n = 40)

Pain by VAS	Before Walant injection	During surgical procedure(25 mints after injection)	t	p
Min. – Max.	5.0 – 8.0	1.0 – 4.0		
Mean ± SD.	6.63 ± 0.93	2.50 ± 0.78	34.443*	<0.001*
Median (IQR)	7.0 (6.0 – 7.0)	2.0 (2.0 – 3.0)		

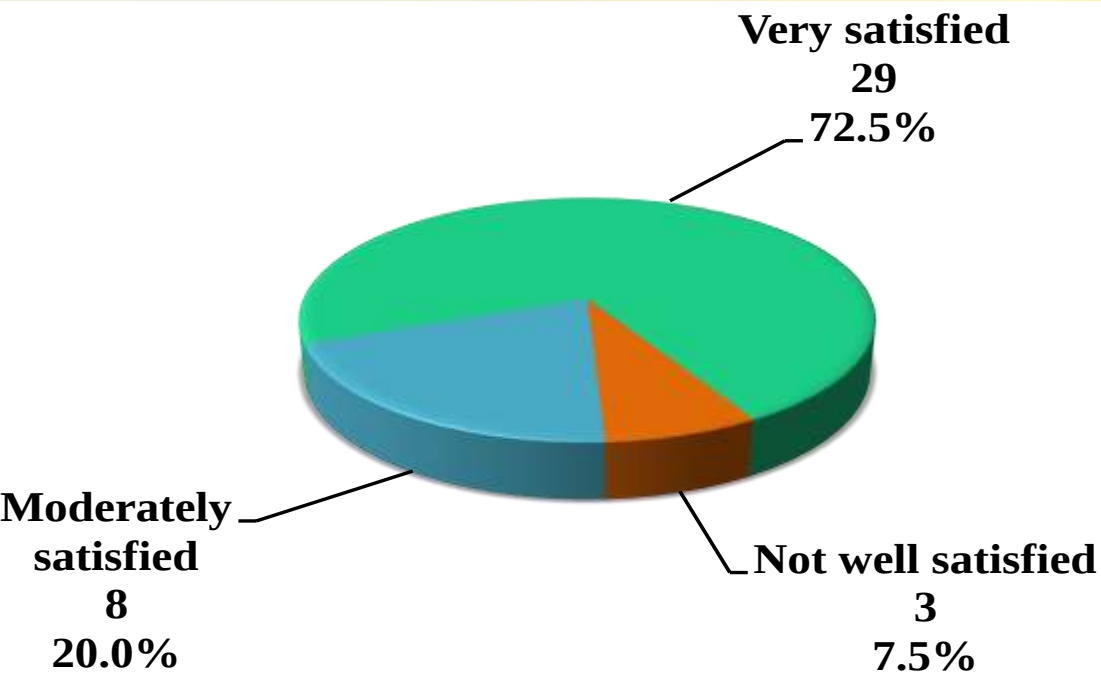


Figure 1: Distribution of the studied cases according to satisfaction (n = 40)

Conclusion

This study demonstrated the worth of WALANT anesthesia in repairing flexor tendons, providing a convenient, straightforward, and secure substitute for the traditional anesthesia approach. In the WALANT technique, the blood loss is decreased with no need for other hemostatic methods, and intraoperative direct visualization and assessment of the repair during finger movement are available. Our data showed that the WALANT technique is associated with great patient satisfaction and a low complication rate.