

'Let Go' technique in ultrasound guided Regional Anaesthesia

Shiv Kumar Singh¹, Tuhin Mistry²

Abstract

Background: The local anaesthetic(LA) injection technique during ultrasound guided nerve blocks varies worldwide. This online poll was conceived to explore the current practice among the anaesthesiologists.

Methodology: Two separate polls were created and posted at the same time with appropriate multiple choices in a closed Facebook group 'The Anaesthetist'. Participants were allowed to take part in these online-based polls over a period of seven days. The responses were collected and put down in the Excel sheet to calculate absolute numbers and percentages.

Results: Among the respondents, 63.45% of the ultrasound users keep hold on to the needle and let a trained assistant inject the LA while 14.61 % of the responders use 'Let Go' of the needle technique and inject the LA themselves. Amongst 248 ultrasound users, only one anaesthesiologist use Jedi grip but no one is currently using other grips described in the literature.

Conclusion: LA injection technique varies among the anaesthesiologists throughout the globe. Majority of the anaesthesiologists let a trained assistant inject the LA and some inject the LA themselves.

Keywords: Ultrasound, Regional Anaesthesia, Jedi grip, Bedfordth grip, On-lock grip, 'let-go' of the needle, Single-handed injection technique, Online poll

Introduction

The local anaesthetic (LA) injection technique during ultrasound guided regional anaesthesia(UGRA) varies among the anaesthesiologists worldwide. Anaesthesiologist needs to stabilize the probe, manipulate the needle and at the same time have control over LA injection rate and pressure during any UGRA procedure. While the operator holds the probe in one hand and stabilizes the needle tip with other hand, he/she requires help from fellow anaesthesiologist or an experienced assistant for injection. The LA is injected incrementally on the instruction from the operator. This method decreases the tactile feedback of the injection pressure, increases the possibility of unrecognised intraneural injection by lesser experienced assistance and also cause errors in rate and volume of LA injection [1].

To conquer this situation, single operator

ultrasound guided regional anaesthesia grips (Jedi [1], Bedfordth [2] and On-lock [3]) have been described in the literature. (Fig. 1,2,3) Although these grips seem to be promising, they are not easy to perform and not applicable in all blocks. On the other hand, the "let go" technique (Fig. 4) allows the fine tuning of the needle tip position and frequent aspiration before injection without any help from others. The fact that there is an extension tubing attached to the block needles and the tissues tend to hold the needle in place without displacement, allows one to place the syringe containing the LA on a sterile area while the needle tip can be fine-tuned to a right position. Letting go off the needle and self-injecting the LA allows one to have the feel of the pressure and have a control on the rate of injection, both of these are essential part in preventing nerve injury.

Two online polls were conceived with an objective of getting an idea about the current

practice among the anaesthesiologists. This may help us in better understanding and to standardise the practice of injection technique during UGRA.

Methodology

The online polls were conducted in a closed Facebook group 'The Anaesthetist' with more than 22,000 members from 101 countries across the globe [4]. Two separate polls were created after getting approval from the groups admin with following titles: "Accessibility and use of ultrasound for nerve blocks" and "Grip' vs 'Let go' technique for single handed injection technique UGRA". Polls were conducted from 14th July 2019 to 20th July 2019 in the closed Facebook group forum. Each poll consisted of one multiple choice question where the respondent could select one or multiple answers (Fig. 5). The questions and multiple choices were validated internally by three experts in the group and externally by two experts in the field and was posted in English only version.

The responses were directly collected and collated on an Excel file master chart and basic tables. The data were then expressed in absolute number, and percentage scale.

¹Department of Anaesthesiology, Royal Liverpool University Hospitals, Liverpool, United Kingdom.

²Department of Anaesthesiology, All India Institute of Medical Sciences, Raipur, India.

Address of Correspondence

Dr. Tuhin Mistry,
All India Institute of Medical Sciences, Raipur, India.
E-mail: dr.tuhin2014@gmail.com



Dr. Shiv Kumar Singh



Dr. Tuhin Mistry



Figure 1: 'JEDI' Grip



Figure 2: 'BEDFORTH' Grip



Figure 3: 'On-Lock' Grip



Figure 4: 'Let Go' Technique

Results

Over the one week period, 541 anaesthesiologists responded to the survey. In poll 1, among the respondents, 317 (58.6%) anaesthesiologists use ultrasound for peripheral nerve blocks. Among them 239 (44.2%) anaesthesiologists use it regularly for nerve blocks, whereas 78 (14.4%) use it occasionally due to limited access to ultrasound machines.

In poll 2, out of the 248 responders 193 (77.8%) anaesthesiologists keep hold on to the needle while doing UGRA. Greater than 98% of them ask a trained assistant to inject the LA. 17.33% responders practice 'let-go off' needle technique and inject the LA themselves for UGRA.

Only one out of 248 (0.4%) of the responders use Jedi grip whereas none (0%) had selected Bedfordth or the on-lock grips.

Discussion

Single handed technique gives a continuous, sensitive tactile feedback of resistance during injection of LA, and at the same time allows for delicate adjustment of needle tip position during injection for optimal LA spread with appropriate and safe volumes. Various grips were described with an aim to allow the anaesthesiologists to control the ultrasound probe, manipulate the needle and deliver the

LA without seeking help from others. These grips require greater skill and dexterity. These "grips" have certain limitations, for example, Jedi technique can not be used from the beginning of the nerve block and aspiration before injection is difficult in the Bedfordth and on-lock grips. Moreover, aspiration while using these grips might lead to unintended movement of needle tip and inaccurate deposition of the LA outside the intended area.

The "let go" technique not only allows for fine tuning of the needle tip position; it also allows for frequent aspiration before injection throughout the procedure. In the "let go" technique, the syringe is allowed to rest on a sterile surface or on the patient while the needle tip is being manipulated into the appropriate position. The syringe is only picked up to inject the LA when the operator is sure of the needle tip position. The human tissue tends to hold the needle in place without any displacement of the tip of the needle. It is important the pressure on the probe is kept constant as the bounce back of the tissues can displace the tip of the needle, often pulling it back slightly. The syringe is placed back to adjust the tip of the needle if there is any doubt about its location. The "let-go" technique allows the operator to sense the pressure of injection and prevent inadvertent

injection into the nerve. It also allows the operator to inject the exact amounts of LA that is required. The anaesthesiologists can control the volume and the rate of injection. Polls gathered opinions on a single topic or item and are usually focused on the immediate current opinion of the respondent. The respondents are not usually asked for any personal or sensitive information in poll gathering and it is therefore an anonymous form of feedback. Results for polls can be seen in reports immediately and require less time for analysis. This also means that polls can provide limited data to draw conclusions from.

The present study is limited by the fact that the numbers of responders were very low compared to the number of members in the group, yet it gives us good insight into the prevailing practice among the anaesthesiologists worldwide. This may be due to the fact that most of the members are from the developing world who may not have access to US machine or training in US guided nerve blocks. A well conducted randomized controlled trial with larger sample size is needed to make a definitive conclusion.

Conclusion

Although majority of the regional anaesthesiologists keep hold on to the needle during injection of LA, "let go" technique is also easier to follow and allows for safer injection of LA compared to the various grips described in the literature.

References

1. Gupta P, Berrill A. 'On lock' - a further single-operator ultrasound-guided regional anaesthesia grip. *Anaesthesia*. 2017 Oct;72(10):1289.
2. Pappin D, Christie I. The Jedi Grip: a novel technique for administering local anaesthetic in ultrasound-guided regional anaesthesia. *Anaesthesia*. 2011 Sep;66(9):845.
3. Bedforth N, Townsley P, Maybin J, Eisenberg E. Single-handed ultrasound-guided regional anaesthesia. *Anaesthesia*. 2011 Sep;66(9):846.
4. Singh SK, Mistry T. In Response to 'Anaesthesiologist and social media: Walking the fine line'. *Indian J Anaesth* 2019;63:253-4.

Conflict of Interest: Nil
Source of Support: None
Acknowledgment: All Respondents
of the Survey

How to Cite this Article

Singh S K, Mistry T. | 'Let Go' technique in ultrasound guided Regional Anaesthesia.
| *Journal of Anaesthesia and Critical Care Case Reports* | Sep - Dec 2019; 5(3): 7-9.