Teaching Local Anesthesia Injection for Carpal Tunnel Release: Can Learners Achieve a “Hole-In-One”?

Hana Farhang Khoee, Jan Lalonde, & Donald Lalonde
Halifax and Saint John, Canada

I. Abstract

Administering local anesthetics in a painless manner is possible, and we have recently published this technique [1,2]. The objective of this study was to determine if we could consistently and reliably teach medical students and resident learners how to administer local anesthetics in an almost painless manner.

Using the published technique, 25 consecutive medical students and residents were taught how to inject local anesthetics for carpal tunnel release by watching the senior author perform the technique once. The learner then independently administered the anesthesia to the next patient who then scored the learner’s ability to inject the local anesthetic from a pain perspective (Table 1).

The learners were consistently capable of administering local anesthetics with minimal pain (Table 1). Seventy-six percent of the patients only felt pain once (“Hole-in-one”) during the injection process. The pain was attributed to the first 27-gauge needle stick poke. The other 24% of the time, patients felt pain twice (“Eagle”) during the 5-minute injection process. All 25 patients rated the whole pain experience to be less than 2/10. Eighty-four percent of the patients indicated that the experience was better than local anesthetic given at the dentist’s office.

Medical students and residents can quickly and reliably learn how to deliver minimal pain local anesthesia for carpal tunnel release.

II. Objective

To evaluate if the method of minimal pain injection of local anesthesia could be reliably and consistently taught to medical students and residents who rotate through our service.

III. Method

I. From February 2009 till June 2011, 25 consecutive medical students (n=9) and residents (n=15) observed the senior author (DL) inject lidocaine and epinephrine in the distal wrist and palm of one patient who was going to have CTR. After watching the single injection by the surgeon, each learner then went on to inject the next subject volunteer patient without the supervision of the surgeon (watch one - do one). The learner was scored on this first post demonstration injection only. There were no “practice injections”.

After the injection, the patient scored the trainee’s minimal pain injecting ability by filling out a questionnaire (Table 1) without the surgeon or the learner present. The patient was...