

## Simple method for minimal invasive carpal tunnel decompression

Jamil M Al-Jamali

Mediclinic Welcare Hospital, UAE

### Abstract

Decompression of carpal tunnel syndrome can be done by different methods including both open and endoscopic techniques. The endoscopic type of decompression can be used in many cases except those where other pathologies must be excluded or treated at the same time like performing synovectomy or removing other mass that cause median nerve compression. The need for minimal invasive approach is now more requested by the patients specially those need to go back to their jobs and sport activities earlier. Many systems are in the market to perform endoscopic decompression using either one port or two port methods. These need special instrumentations that are expensive and not everyone or every hospital can afford to supply. In this presentation, I will show a very simple way to perform a minimal invasive approach using 2.4 mm endoscope that is used for other purposes like ankle or wrist arthroscopy without the need for any costly systems and with using simple instruments. The standard open technique for carpal tunnel surgery has significantly more wound problems and complications than minimally invasive surgery using the Wongsiri technique with MiniSURE Kit® (Surgical Innovation Healthcare Co., Ltd, Bangkok, Thailand), and the open technique surgery, in particular, requires a longer time to return to work.

**Keywords:** Carpal tunnel; synovectomy; Orthopedics

\*Corresponding author: Jamil M Al-Jamali

✉ jamil2251973@gmail.com

Mediclinic Welcare Hospital, UAE

**Citation:** Jamil M Al-Jamali, Simple method for minimal invasive carpal tunnel decompression.

J Clin Exp Orthop Vol. 7 No. 8: 70.

**Received:** Dec 02, 2021, **Accepted:** Dec 12, 2021, **Published:** Dec 22, 2021

## Introduction

The Wongsiri technique yields good results with new medical devices such as the MiniSURE View, which improves vision and line-of-sight, and the MiniSURE Cut, which improves and completes cutting via the suprarretinacular technique, which may reduce nerve problems associated with endoscopic tooling in the carpal tunnel. The goal of this study was to evaluate the surgery results and postoperative outcomes of the Wongsiri procedure using a MiniSURE Kit®. Methods. The Wongsiri technique and a MiniSURE Kit® were used to release 20 patients' carpal tunnels in a five-step procedure: MIS begins when the surgeon makes a 1.5–1.8 cm incision, creates a working space, inserts the MiniSURE View visual tube, inserts the freer, and then cuts the transverse carpal ligament with the MiniSURE Cut. Results. All 20 Wongsiri method and MiniSURE Kit® surgery successes occurred in 6.8 minutes with a wound size of 12 mm. In one case (6.7 percent), the patient developed pillar pain that resolved within one month. Patients are able to return to work in 7.3

days. Conclusions. The Wongsiri approach with the MiniSURE Kit® produced similar results to the endoscope. In contrast to endoscopic surgery, the Wongsiri procedure with the MiniSURE Kit® saved preop, operating, and postoperative time, as well as many resources and significant expenditures, while resulting in no nerve difficulties or consequences. Four individuals had their implants partially removed. All of the wounds healed with a favourable clinical outcome. During surgical mobilisation, two patients experienced an acute Charcot episode in the ankle joint. One patient suffered a significant talus collapse, leading in a below-knee amputation, for a 5% amputation rate. At the time of the follow-up radiographic evaluation, all patients had bone union. Nineteen patients are ambulated in orthopedic shoes at latest follow up, giving a 95% satisfactory result.

Carpal tunnel syndrome is the most frequent upper limb neuropathy, affecting 5% of the general population aged 50–60 years, with a female/male ratio of 4/1.

Carpal tunnel release (CTR) surgery to treat carpal tunnel syndrome is a frequent procedure; five hundred thousand surgeries are performed in the United States of America each year, at a cost of more than two billion dollars. Standard open carpal tunnel release techniques have been developed with large incisions as large as 3–5 cm in order to clear the surgical visual field; however, a meta-analysis found that 10.2 percent of standard open CTR operations result in wound complications such as painful scars, wound problems, and prolonged return to work.

Carpal tunnel release requires minimally invasive surgery to avoid hypersensitivity, soft tissue injury, and wound complications, as well as clear visualisation to provide a safe operation and protection of the delicate nerve and vascular system. The most important aspect of total TCL release is avoiding recurrence and performing an incomplete operation, hence an excellent instrument is essential for complete release.

This study demonstrates the success of all twenty carpal tunnel release procedures performed using the Wongsiri

technique and the MiniSURE Kit®, resulting in fewer wound issues, fewer nerve complications, and an earlier return to work. In a systematic evaluation, the open conventional carpal tunnel release (OCTR) was found to have higher problems and a longer time to return to work than the endoscopic group. The majority of open carpal tunnel release consequences are wound-related, such as infection, hypertrophic scarring, or scar pain, which appear to be related to wound size.

The current study's limitations include a limited number of patients and a short period of follow-up. In this investigation, all patients with carpal tunnel syndrome did not have distal radius fractures. The reported incidence of median nerve neuropathy associated with distal radius fracture, on the other hand, varies substantially in the literature, ranging from 0.5 to 21%. The transverse carpal ligament should be released during fracture fixation to lessen the risk of postoperative median nerve dysfunction. Further research could use the MiniSURE Kit® to treat carpal tunnel syndrome caused by traumatic distal end radius fractures.

## References

1. Heyman VB. Electrophysiological testing. In: Gelberman RH, editor. Operative nerve repair and reconstruction. 2nd ed. Philadelphia: J.B. Lippincott; 1991. p. 170–81.
2. Szabo RM. Entrapment and compression neuropathies. In: Green DP, Hotchkiss RN and Pederson WC, editors. Green's operative hand
3. D'Arcy CA, McGee S. The rational clinical examination. Does this patient have carpal tunnel syndrome? JAMA 2000;283:3110–7.
4. Kerr CD, Gittins ME, Sybert DR. Endoscopic versus open carpal tunnel release: clinical results. Arthroscopy 1994;10:266