

Complications of open carpal tunnel surgery: avoiding the pitfalls

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Abstract We present a series of 31 patients treated for complications following open carpal tunnel syndrome surgery over a time period of 10 years. The most frequent complications encountered were major nerve lacerations at the wrist and thenar followed by persistent and recurrent symptoms, neuroma formation and wound infection. All patients had primary treatment by a different approach, by different spectrum of training surgeons; in only one patient, the initial operating surgeon was an orthopedic surgeon in hand fellowship training. In ten patients, the typical approach to the carpal tunnel has been used at the initial operation; an excessive ulnar-directed incision and a long proximal- and radial-directed incision have been observed in ten and eight patients, respectively; a mini-open incision and an incision that crossed the wrist perpendicular to the flexion creases have been observed in one and two patients, each. Most complications of open carpal tunnel surgery can be prevented by specialized training in hand surgery of the operative surgeon and proper operative technique, including a properly placed incision and exposure under magnification and direct vision.

Keywords Open carpal tunnel surgery · Complications · Neurotmesis · Neuroma

Introduction

Carpal tunnel syndrome is the most common peripheral entrapment neuropathy and a frequent cause of disability in the upper extremity [24]. Clinical symptoms including paresthesias or pain, numbness and tingling in all or a combination of the thumb, index, middle and ring fingers, and weakness or atrophy of the thenar muscles, and physical findings such as the Tinel sign and Phalen test, the hand diagram, the grip and pinch strength tests are suggestive of the syndrome [3, 5, 8, 12, 15, 18, 24].

To date, no recognized consistent nonoperative treatment has been documented for carpal tunnel syndrome management; the treatment of choice to predictably relieve symptoms, and the most common and popular procedure performed in current orthopedic practice is the decompression of the median nerve by open release of the transverse carpal ligament [13, 18, 20, 24]. When surgery is indicated, it is important to consider that significant complications may occur. The clinical symptoms that may ensue following these complications may be more severe and distressing than the patient's original complaints.

The purpose of this study was to present a number of complications following carpal tunnel surgery and to discuss how they may have occurred and how they may be prevented. Our hypothesis was that lack of specialized training in hand surgery and improper approaches are significant factors that contribute to complications.

Patients and methods

Thirty-one patients have been diagnosed and treated at the authors' institution with complications following open carpal tunnel surgery over a 10-year period from 1997 to 2007.

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