

Open Carpal Tunnel Release

Last Updated Friday, 28 July 2006

Introduction

Carpal tunnel syndrome (CTS) occurs when the median nerve is squeezed as it courses through the wrist. The passageway through the wrist, called the carpal tunnel, is formed by the small wrist bones (carpals) on one side and a ligament on the other. In an open release for CTS, the surgeon makes an incision on the front of the wrist and hand in order to cut the ligament. The goal is to relieve pressure on the median nerve.

This guide will help you understand

- what part of the wrist and hand are treated during surgery
- how surgeons perform the operation
- what to expect before and after the procedure

Related Document: [A Patient's Guide to Carpal Tunnel Syndrome](#)

Anatomy

What part of the wrist is treated during surgery?

The carpal tunnel is an opening through the wrist into the hand that is formed by the carpal bones of the wrist on the bottom and the transverse carpal ligament on the top. The transverse carpal ligament is at the base of the wrist and crosses from one side of the wrist to the other. (Transverse means across.) It is sometimes referred to as the carpal ligament.

The opening formed by the carpal bones and the carpal ligament is the carpal tunnel. The median nerve passes through the carpal tunnel into the hand. It gives sensation to the thumb, index finger, long finger, and half of the ring finger. It also sends a nerve branch to control the thenar muscles of the thumb.

The median nerve rests on top of the flexor tendons, just below the carpal ligament. Between the skin and the carpal ligament is a thin sheet of connective tissue called the palmar fascia.

Related Document: A Patient's Guide to Hand Anatomy

Rationale

What does the surgeon hope to achieve?

The surgery releases the carpal ligament, taking pressure off the median nerve. The open procedure for releasing the carpal ligament involves a sizeable wrist incision, usually about two inches long. By creating a large incision, the surgeon is able to clearly see the wrist structures and to carefully do the operation.

Preparation

What should I do to prepare for surgery?

The decision to proceed with surgery must be made jointly by you and your surgeon. You need to understand as much about the procedure as possible. If you have concerns or questions, you should talk to your surgeon.

Once you decide on surgery, your surgeon may suggest a complete physical examination by your regular doctor. This exam helps ensure that you are in the best possible condition to undergo the operation.

On the day of your surgery, you will probably be admitted to the hospital early in the morning. You shouldn't eat or drink anything after midnight the night before. This surgery can usually be done as an outpatient procedure, meaning you can leave the hospital the same day.

Procedure

Open release for CTS is occasionally done using a general anesthetic (one that puts you to sleep). More often, it is done using a regional anesthetic.

A regional anesthetic blocks the nerves going to only a portion of the

body. Injections of medications similar to lidocaine are used to block the nerves for several hours. This type of anesthesia could be an axillary block (only the arm is asleep) or a wrist block (only the hand is asleep). The surgery can also be performed by simply injecting lidocaine around the area of the incision.

Once you have anesthesia, your surgeon will make sure the skin of your palm is free of infection by cleaning the skin with a germ-killing solution.

A small incision is made in the palm of the hand, usually about two inches long. In some severe cases, a slightly longer incision is extended into the forearm.

View
animation of skin incision

The incision makes the palmar fascia visible. This is a sheet of connective tissue in the palm and forearm right under the skin. The surgeon makes an incision through this material and exposes the carpal ligament.