

Results of Wilhelm's Wrist Denervation Technique

Patients with severe wrist pain limiting function who don't improve with conservative (nonoperative) care may benefit from surgery. In this study, hand surgeons performed the Wilhelm's wrist denervation on 54 patients and report the results.

Wilhelm's wrist denervation is a surgical procedure used to cut tiny branches of the sensory nerves to the wrist and hand. By cutting these nerve pathways, pain signals to the brain can be stopped. Since motor nerves are not disturbed, there's no loss of motion or strength. In fact, in all cases, grip strength, wrist motion, and pain all improved.

The procedure takes about 45 minutes and involves four small incisions on both the front and back of the wrist and hand. The authors provide drawings of the incision locations and describe the procedure.

The three main reasons patients in this study were having severe wrist and hand pain included degenerative osteoarthritis, Kienböck disease, and osteoarthritis from trauma. Anyone with a diagnosis of rheumatoid arthritis was not included in the study.

Patients ranged in age from 29 to 65. No one had any previous wrist or hand surgeries. The group was young enough that most were still working. Symptoms were severe enough to limit daily activities and function at work.

Everyone was treated for a minimum of six months with a nonsurgical approach. A hand therapist worked with the patients to teach them how to modify their activities and reduce the stress and workload on the wrist and hand.

Splints, range-of-motion exercises, nerve mobilization, and manual therapy were part of the program. The goals were to help realign the wrist and strengthen the muscles to stabilize (hold) everything in place.

For this group of patients, pain was still severe after nonoperative care. A local injection of a numbing agent into the wrist gave enough pain relief to suggest denervation would be helpful.

And, in fact, the surgery was a success for everyone. They all experienced pain relief with improved grip strength and wrist range-of-motion. As might be expected, function was also much improved.

What didn't change was the underlying cause of the problem. X-rays taken during follow-up visits showed no change in the degeneration present in the wrist. It is possible that over time, continued progression of disease will affect joint motion once again. But as this group of patients showed, even after six years, the effects of the denervation were still very positive.

The authors conclude by saying it is possible to almost completely denervate sensory nerves to the wrist using a limited surgical approach in patients with severe wrist pain. They showed that using the Wilhelm's wrist denervation technique with its four small incisions could yield very good mid-term results with no complications.

Reference: Jefferson Braga-Silva, MD, PhD, et al. Wrist Denervation for Painful Conditions of the Wrist. In *The Journal of Hand Surgery*. June 2011. Vol. 36A. No. 6. Pp. 961-966.