

The Hypothenar Fat Pad Flap for Recurrent Carpal Tunnel Syndrome

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Background:

Recurrent carpal tunnel syndrome refers to the return of symptoms following an initial symptom-free interval after a carpal tunnel release. The recurrence is typically due to adhesion formation and reconstitution of the palmar fascia and transverse carpal ligament. Treatment is primarily surgical, typically involving at least an open revision carpal tunnel release and possibly an adjunctive nerve coverage technique to reduce the risk of repeated adhesion formation. In patients with recurrent symptoms of median nerve compression that are thought to be due to perineural scarring, a hypothenar fat pad flap is an effective surgical option that provides a vascularized barrier to scar tissue formation and allows for smooth gliding of the nerve.

Purpose:

This video overview and case presentation demonstrates a hypothenar fat pad flap for recurrent carpal tunnel syndrome.

Methods:

The anatomy, pathogenesis, diagnosis, and treatment options for recurrent carpal tunnel syndrome are reviewed. The case of a 74-year-old female with recurrent right carpal tunnel syndrome is presented. She underwent a right carpal tunnel release several years prior, and despite a period of symptomatic improvement postoperatively, she then experienced a return of persistent symptoms. She was indicated for a revision right carpal tunnel release with a hypothenar fat pad flap.

Results:

The patient developed recurrent carpal tunnel syndrome due to postoperative adhesion formation and reconstitution of the palmar fascia and transverse carpal ligament. After the median nerve was freed from the scar tissue, a hypothenar fat pad flap was created and sutured to the radial leaflet of the transverse carpal ligament to allow the nerve to glide freely in a tension-free manner. At her three month postoperative visit she denied any numbness or tingling, and her grip strength was improving with therapy.

Conclusion:

In addition to a revision open carpal tunnel release and neurolysis of the median nerve, a hypothenar fat pad flap is a viable method for treating recalcitrant carpal tunnel syndrome. This soft tissue flap creates a healthy environment for the nerve to reside that does not promote adhesion formation.