Evidence Summary for Ulnar Nerve Transposition

Cubital tunnel syndrome is the second most common compression neuropathy of the upper limb (Black, 2000) and involves compression of the ulnar nerve as it passes through the cubital tunnel at the elbow. Nerve compression results in paresthesias along the ulnar nerve distribution affecting the small finger and ulnar side of the ring finger. In addition, with long standing cubital tunnel syndrome, residual motor weakness of the ulnar nerve innervated intrinsic muscles may be present. Severe, prolonged ulnar nerve compression may result in clawing of the ring and small fingers.

Treatment is based on symptoms and the extent of dysfunction. If non-operative treatment fails to reduce pain and increase function, surgical intervention may be performed. The most common surgical procedures include simple decompression, medial epicondylectomy and anterior nerve transposition (subcutaneous and submuscular). However, to date, no surgical technique has been found to provide superior results. A meta-analysis of randomized, controlled trials found no difference in motor nerve-conduction velocity and clinical outcome scores between simple decompression and ulnar nerve transposition (Zlowodzki, 2007). Individual studies have compared various surgical procedures to address cubital tunnel syndrome. Bartels et al (2005) found no significant difference between simple decompression and anterior subcutaneous transposition using the SF-36 health status questionnaire, McGill pain questionnaire and EMG examination as outcome measures. Likewise, Gervasio et al (2005) found no significant difference between simple decompression and anterior submuscular transposition of the ulnar nerve using the Bishop rating system (subjective and objective parameters) as the primary outcome measure. Additionally, Geutjens et al (1996) found no significant difference between medial epicondylectomy and ulnar nerve transposition using motor power and nerve conduction rates as outcome measures. However, patients who received a medial epicondylectomy, on average, reported higher satisfaction rates than those who received nerve transposition.

Sparse evidence is available in the literature on rehabilitation following surgical intervention for cubital tunnel syndrome. Black et al (2000) compared the results of immediate and late initiation of range of motion following ulnar nerve transposition (Level 4, retrospective case study). No significant difference was found between the groups at a minimum of two years (range 24 months-14 years) using an outcome measure of subjective satisfaction and functional outcome. The only significant difference between the groups was the number of days, on average, for return to work (30 days for immobilization vs 10 days for immediate motion).

Overall, there is Grade A evidence to support the surgical management for cubital tunnel syndrome, with some preliminary evidence that a concomitant medial epicondylectomy may improve patient satisfaction. There is less evidence, (Grade C), to guide post-op rehabilitation for ulnar nerve transposition. The protocol provided for this course on rehabilitation following ulnar nerve transposition is taken from Wilk (2004).

References


