

Considerations when surgically treating cubital tunnel syndrome

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Cubital tunnel syndrome (CuTS) is an ulnar nerve dysfunction at the elbow joint resulting from a combination of compression, traction, and friction. Although numerous operative procedures have been introduced for the treatment of CuTS, the optimal surgical intervention remains controversial. Simple decompression involves releasing the fascial structures superficial to the ulnar nerve; while it is technically straightforward and minimizes nerve devascularization, it has been criticized due to concerns regarding persistent postoperative symptoms. Medial epicondylectomy reduces ulnar nerve tension more effectively than simple decompression; nonetheless, potential drawbacks such as inadequate tension reduction and persistent medial elbow pain must be considered. Anterior transposition of the ulnar nerve eliminates compression, traction, and friction simultaneously by placing the nerve anterior to the ulno-humeral axis of rotation. However, this procedure requires a relatively long segment of circumferential dissection. Furthermore, the anterior relocation of the nerve may induce strain during elbow extension. Despite these concerns, anterior transposition of the ulnar nerve is considered the most comprehensive procedure, as it simultaneously addresses all pathological mechanical forces, including compression, tension, and friction.

Thus, the author primarily performs ulnar nerve reposition when treating cubital tunnel syndrome. Osborne's ligament is typically incised longitudinally, and ulnar nerve mobility is assessed during elbow flexion and extension. If the ulnar nerve exhibits restricted mobility, cubital tunnel obliteration is utilized. In cases where the ulnar nerve undergoes significant excursion over the medial epicondyle or if preoperative ulnar nerve instability is present, a superficial anterior transposition is prioritized. These methods effectively eliminate pathologic forces applied to the ulnar nerve while minimizing the typical disadvantages of transposition of ulnar nerve, such as long-segment devascularization or malposition of ulnar nerve.