Minimal endoscopic decompression of ulnar nerve in the cubital tunnel

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INTRODUCE
Compression of the ulnar nerve in the cubital tunnel is the second most frequent entrapment neuropathy of the upper extremity after carpal tunnel syndrome. None of the described techniques have proved to be superior in randomized prospective trials. We therefore present our series of endoscopically decompression of the ulnar nerve at the elbow to determine the effectiveness of this procedure.

PURPOSE
To evaluate the long-term results, safety and effectiveness of using endoscopic method for treatment the lesion of ulnar nerve in the cubital tunnel.

METHODS
• It was prospective, non-randomize two-center clinical study.
• 45 patients: 25 men and 20 women (age’s range 28-77) with clinical McGowan grade I (6 patients), II (29 patients), and III (10 patients) Table 1; and electrophysiological signs of cubital tunnel syndrome, 21-cm of the ulnar nerve was released through a 2-cm long skin incision.
• Diagnosis was based on history, clinical examination (i.e. pain over medial epicondyle, sensory loss, positive Tinel’s sign, weakness or atrophy of the muscles innervated by the ulnar nerve, and positive elbow flexion test) and confirmed by neurophysiological studies (nerve conduction velocity and electromyography).
• A 4-mm, 30° standard endoscope and Wolf retractor were used during the procedure, and the mean postoperative follow-up examination was 12 months.

RESULTS
• There were no visible nerves and vessels injured during the procedure.
• The main postoperative complication were hematomas in 4 patients that resolved after conservative management.
• There was no elbow extension deficit after surgery and surgical wounds all healed within a week.
• Outcomes were excellent in 27 of 45 cases and good in 13 of 25 cases (Table 2). Grip strength showed a highly significant increase after surgery. Grip strength showed a highly significant increase after surgery compared to the non-operated hand (p<0.005) Table 3.
• The mean DASH score was decreased significantly about 65% (from 74,8 before operation to 26,3 after procedure) (p<0.005). 88% patients were satisfied with the procedure.

CONCLUSIONS
1. Endoscopic technique for treating cubital tunnel syndrome is a safe and reliable procedure, characterized by a short incision, minimal soft tissue manipulation, less scar sensitivity and early postoperative mobilization.
2. It demonstrates promising benefits against conventional approaches (complete release and good visualization), and reduced complication profile (painful scarring and elbow contracture).
3. Endoscopy is a widely imaging study for assessing nerves providing useful information on the severity and stage of nerve pathology.