



Endoscopy-assisted Cubital Tunnel Release Under Carbon Dioxide Insufflation and Anterior Transposition

Su Jiang, Wendong Xu*, Yundong Shen, Jianguang Xu, Yudong Gu. *correspondence

Dept. Hand Surgery, Huashan Hospital, Fudan University, Shanghai, China

PURPOSE

- The optimal treatment for cubital tunnel syndrome is widely debated
- To describe the technique of an endoscopic-assisted ulnar nerve decompression using carbon dioxide insufflation in association with subcutaneous anterior transposition
- To assess the success or failure of the method of treatment

METHODS

- 8 males and 4 females average age of 42 years (range, 25-56) between August 2008 and June 2009
- Presented signs, symptoms, and abnormal neurophysiological studies of cubital tunnel syndrome were recruited in the retrospective study
- Operated on using a 0-degree lens STORZ endoscope
- Preoperatively classified according to the Dellon scale and postoperative Bishop rating system



The endoscopic view of the ulnar nerve and its environment when carbon dioxide was not insufflated (left) and insufflated (middle). Asterisk represents the ulnar nerve in the endoscopic view. Transposition of the ulnar nerve using a noncompressing fasciodermal sling under direct visualization(right).

RESULTS

- Preoperatively, 5 patients as mild, another 5 as moderate, and the remaining 2 as severe
- The average length of the incision 15 ± 3 mm, the mean length of the ulnar nerve decompression 18 ± 2 cm, the whole duration of surgery (skin to skin) 30 ± 5 minutes
- Endoscopic procedures in all patients with no difficulty
- All had improvement in symptoms of cubital tunnel syndrome and 10 of 12 patients scored excellent at a minimum of 1 year postoperatively

CONCLUSIONS

- Endoscopy-assisted cubital tunnel release under carbon dioxide insufflation demonstrated similar results compared with conventional open surgeries
- It may avoid problems such as long incision, painful scarring, and have additional advantages of providing an extended endoscopic view
- Safe and mini-invasive with favorable results in a 12-month follow-up

Patient Number	Age yr/Sex	Dellon Classification	Duration of Symptoms (mo)	Duration of Surgery (min)	Follow-Up (mo)	Neurophysiological Study	Pinch Strength (pre) (%) ^a	2-PD (pre) (mm)	Bishop Score
1	25/M	Mild	5	30	18	Normal	87 (78)	2 (5)	9
2	27/F	Mild	4	30	17	Normal	90 (80)	2 (5)	9
3	56/M	Moderate	5	35	17	Improved	89 (81)	3 (6)	8
4	52/F	Mild	4	30	16	Normal	90 (80)	3 (6)	9
5	45/F	Moderate	5	25	16	Improved	89 (78)	3 (6)	8
6	43/M	Moderate	7	25	15	Improved	90 (80)	4 (7)	8
7	38/F	Moderate	7	30	15	Improved	90 (79)	4 (6)	8
8	52/M	Moderate	6	35	14	Improved	91 (79)	4 (6)	8
9	23/M	Mild	4	35	14	Normal	90 (79)	2 (5)	9
10	51/M	Severe	7	30	13	Improved	89 (74)	4 (6)	7
11	47/M	Mild	5	30	13	Normal	90 (79)	3 (6)	9
12	48/M	Severe	12	35	12	Improved	87 (74)	6 (8)	6
Mean	42	—	6	30	15	—	89 (77.5)	3 (6)	8.2

The general information of the both preoperatively and postoperatively.

*Compared with the contralateral side.