Clinical Study on Needle Knife Treatment of Stenosing Tenosynovitis of the Thumb Based on Anisotropic Ultrasound Guidance

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Introduction

- Stenosing tenosynovitis of the finger flexor tendon (trigger finger) is a pathological change
- that occurs between the finger pulley and the flexor tendon[1-2]
- Previous needle knife treatment for stenosing tenosynovitis was determined by sence of puncture，in this study, we explored the clinical efficacy of needle knife treatment based on anisotropic ultrasound guidance.
- This is the first clinical practice recommadation of using anisotropic ultrasound guidance as the needle knife incision marker.

Methodology

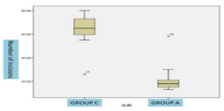
A total of 50 patients with stenosing tenosynovitis of the thumb who visited our hospital from June 2020 to June 2022 were collected and randomly divided into a control group (Group C) and an observation group (Group A).

Methodology

- Group C underwent conventional ultrasound-guided needle knife treatment, while Group A underwent needle knife treatment based on anisotropic ultrasound guidance.
- The operation time, amount of bleeding, number of incisions, satisfaction level, and adverse reactions within 10 days after surgery were recorded for both groups.

Results

- The operation time of Group A was significantly shorter than that of Group C (11.68±2.9 min vs 26.42±5.7 min, p=0.01); The amount of bleeding in Group A was significantly less than that in Group C (3.4±1.07 ml vs 7.9±2.10 ml, p=0.001).
- The number of incisions with a small needle knife in Group A was significantly less than that in Group C (20.8±10.2 times vs 64.6±12.2 times, p=0.00).

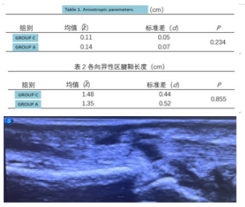


Results

The satisfaction level of both doctors and patients in Group A was significantly higher than that in Group C (p=0.01).

There were no cases of neurological complications in Group A, while there was 1 case in Group C, which was significantly higher than that in Group A (p=0.01).

The postoperative VAS score in Group A was significantly lower than that in Group C (0.9±0.2 vs 2.3±0.3, p=0.01).



组别	均值（$\bar{x}$）	标准差（s）	P
GROUP C	0.11	0.05	0.234
GROUP A	0.14	0.07	

表 2 各向异性区腱鞘长度（cm）

组别	均值（$\bar{x}$）	标准差（s）	P
GROUP C	1.48	0.44	0.855
GROUP A	1.35	0.52	

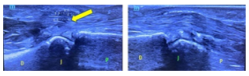
Conclusion

Ultrasound-guided needle knife treatment based on anisotropic ultrasound guidance can improve surgical efficiency

reduce intraoperative bleeding, minimize the occurrence of

Conclusion

- postoperative neurological and vascular complications
- achieve higher satisfaction levels for both doctors and patients in the treatment of stenosing tenosynovitis of the thumb



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