EFFECT OF THE POSTOPERATIVE REHABILITATION ON TRIGGER FINGER

Szu-Ching Lu¹, Li-Chieh Kuo², Hsiu-Yun Hsu³, I-Ming Jou⁴, Yung-Nien Sun⁵, Fong-Chin Su¹,⁶

¹Department of Biomedical Engineering, ²Department of Occupational Therapy, ³Department of Physical Medicine and Rehabilitation, ⁴Department of Orthopaedics, ⁵Department of Computer Science and Information Engineering, ⁶Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan

E-mail: fcsu@mail.ncku.edu.tw; shinlu1984@gmail.com

AIM: The purpose of this study was to propose a postoperative rehabilitation protocol for trigger finger patients undergoing ultrasound-guided percutaneous pulley release surgery, and to provide quantitative evaluation of their finger function to investigate the effect of the postoperative rehabilitation on trigger finger.

METHODS: Patients suffering from trigger finger with joint contracture problems were recruited from the orthopedic clinics. The participants were divided into two groups, one was the intervention group and the other one was the control group. Both groups received the finger function evaluation before the pulley release surgery and one-month after the surgery. All the participants underwent the same surgical procedure performed by the same surgeon. A four-week postoperative rehabilitation program designed based on the wound healing process was proposed by this study. The intervention group received the postoperative rehabilitation after the surgery while the control group received no treatment after the surgery. The finger function was quantitatively evaluated by using a three-dimensional motion capture system. The fingertip workspace and joint range of motion (ROM) were evaluated while the participant was performing a required five-posture movement, including straight finger, intrinsic plus, straight fist, fist, and hook.

RESULTS: The intervention group presented significant better improvement than the control group in the fingertip workspace (49% vs. 17%), the ROM of the distal interphalangeal (DIP) joint (16% vs. 4%), the ROM of the proximal interphalangeal (PIP) joint (21% vs. 5%), and the total active ROM (17% vs. 5%).

CONCLUSION: This study proposed a postoperative rehabilitation protocol for trigger finger and demonstrated the benefits of the rehabilitation protocol for trigger finger after the pulley release surgery. Although both the intervention group and the control group showed improvement in the fingertip workspace and joint ROM at the one-month follow-up examination after surgery, the intervention group presented significant better improvement in the fingertip workspace, the ROM of DIP and PIP joints, and the total active ROM. These results may provide suggestions for the clinical treatment for trigger finger.