Certain individuals suffering from trigger finger complain about postoperative finger functions remaining unsatisfactory, especially who have joint contracture problems. Although postoperative management for trigger finger has been proposed, there is no evidence in the literature that demonstrates the effectiveness of such treatment, and there is no standard protocol. In addition, postoperative rehabilitation is not a regular procedure for trigger finger after pulley release surgery.

**Purpose:** To propose a practical postoperative rehabilitation protocol for trigger finger, and quantitatively evaluate various finger functions before and after surgery.

**Research Design**

Individuals Suffering from Unilateral Trigger Finger with Joint Contracture (Grade IV, Froimson’s Classification)

- **Intervention Group**
- **Control Group**

Pre-surgery Finger Function Evaluation of the Involved Finger and the Contralateral Intact Finger

Ultrasound-guided Percutaneous A1 Pulley Release

Postoperative Rehab Program

Follow-up Examination of Finger Function at 1 Month after Surgery

**Postoperative Rehabilitation Protocol**

<table>
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<th>Post-OP</th>
<th>Management</th>
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| **Week 1** | Edema control and scar management  
Compression with Coban  
Prevent PIP flexion contracture  
Gentle DIP and PIP ROM exercise with day splint; Night splint |
| **Week 2** | Regain smooth tendon excursion  
Tendon gliding exercise  
Prevent adhesion  
Compressive massage  
Prevent PIP flexion contracture  
Night splint; Joint stretch  
Check intrinsic muscle tightness  
Passive DIP and PIP flexion with MP extension |
| **Week 3** | Regain full, smooth ROM  
Remove splint; Frictional massage; Blocking exercise |
| **Week 4** | Strengthening exercise  
Lumbrical muscles; Extrinsic flexor and extensor muscles  
Functional activities  
Participation in full activities of daily living |

**Quantitative Evaluation**

A 3D motion capture system was used to quantitatively evaluate the finger movement functions. Each participant was requested to perform a sequential movement of five postures.

The intervention group showed significantly greater improvements in the fingertip workspace, the ROM of DIP joint, the ROM of PIP joint, the ROM of MCP joint, and the total active ROM (TAROM) were calculated.

\[
\text{Workspace}\% = \frac{\text{Workspace}_{\text{post}} - \text{Workspace}_{\text{pre}}}{\text{Workspace}_{\text{base}}} \times 100\%
\]

\[
\text{ROM}\% = \frac{\text{ROM}_{\text{post}} - \text{ROM}_{\text{pre}}}{\text{ROM}_{\text{Normal}}} \times 100\%
\]

\[
\text{TAROM}\% = \frac{\text{TAROM}_{\text{post}} - \text{TAROM}_{\text{pre}}}{270} \times 100\%
\]

**Results**

The intervention group showed significantly greater improvements in the fingertip workspace (49% vs. 17%), the ROM of DIP joint (16% vs. 4%), the ROM of PIP joint (21% vs. 5%), and the TAROM (17% vs. 5%) than the control group.