Variability of Rehabilitation Protocols for Ulnar Collateral Ligament (UCL) Reconstruction

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Disclosure Information

The authors of this paper have nothing to disclose.
Background

- UCL tears are common in athletes who are required to throw or use overhead arm.

- Tommy John was the first Major League Baseball player to undergo this surgery performed by Dr. Frank Jobe in 1974.¹

- Between 1974 and 2016: 1429 Major League Baseball players underwent UCL reconstruction.²

- Rehabilitation is crucial for the success of UCL reconstruction outcomes.


The purpose of this study is to assess the variability of online published rehabilitation protocols for UCL reconstruction.
Methods

- Publicly available rehabilitation protocols from US academic orthopedic surgery programs were collected using the Fellowship and Residency Electronic Interactive Database Access (FREIDA)\(^3\).

- Search term: “[Program/affiliate hospital/affiliate medical school name] UCL reconstruction rehabilitation protocol.”

- Private practice protocols were added using Google search

Academic orthopedic surgery programs from FREIDA searched (n=183)

Private orthopedic practices with published UCL reconstruction rehabilitation protocols (n=18)

Academic orthopedic surgery programs with published protocols (n=12)

Total rehabilitation protocols (n=30)

Private practice excluded (n=2)

Protocols included in qualitative synthesis (n=28)

Protocols included in quantitative synthesis (n=28)
Comparison of protocols based on rehabilitation components

<table>
<thead>
<tr>
<th>Rehabilitation Component</th>
<th>Total number of protocols</th>
<th>Percent of protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive ROM</td>
<td>9</td>
<td>32%</td>
</tr>
<tr>
<td>Active ROM</td>
<td>18</td>
<td>64%</td>
</tr>
<tr>
<td>Full ROM</td>
<td>26</td>
<td>93%</td>
</tr>
<tr>
<td>Shoulder Strengthening</td>
<td>26</td>
<td>93%</td>
</tr>
<tr>
<td>Elbow Strengthening</td>
<td>27</td>
<td>96%</td>
</tr>
<tr>
<td>Brace Immobilization</td>
<td>26</td>
<td>93%</td>
</tr>
<tr>
<td>Interval Throwing Program</td>
<td>23</td>
<td>82%</td>
</tr>
<tr>
<td>Return to Sport</td>
<td>28</td>
<td>100%</td>
</tr>
</tbody>
</table>

This chart compares the rehabilitation recommendations made by the protocols included in this study. While return to sport recommendation is included in 100% of protocols, passive (range of motion) ROM and active ROM recommendations are included in far less percentage of protocols.
While there is variability in the recommendation, 5 of 9 (56%) protocols recommended initiating passive ROM of elbow at 2 weeks.
Results

There was great variability in active ROM recommendations between protocols, and 5 of 18 (28%) protocols recommended initiating active ROM of elbow at 6 weeks.
Results

Initiating full ROM of elbow at 6 weeks was recommended by 11 of 26 (42%) protocols.
Results

14 of 27 (52%) protocols recommended initiating elbow strengthening at 6 weeks.
Results

18 of 26 (69%) protocols recommended brace immobilization for 6 weeks.
**Results**

8 of 23 (35%) protocols recommended initiating Interval Throwing Program at **16 weeks**.
Results

While return to sport recommendations were included in 100% of protocols, there was wide variability in the timing of that recommendation.
Discussion

• A high degree of variability was found between rehabilitation protocols.
• There was considerable variation in the depth of detail of rehabilitation steps.
• Many academic programs do not have a UCL joint reconstruction rehabilitation protocols published online.
• Most protocols need to use medical terminology and physical therapy abbreviations that are easy for patients to follow as rehabilitation is transitioning to more patient-directed therapy.
Limitations

• Less variability between protocols if more protocols were identified.

• Private practice protocols were located using a simple Google search.

• It is possible that many programs have rehabilitation protocols that are not published online.
Thank you for viewing this presentation.

Thank you to AANA for giving us the opportunity to present our work.