Suture Bridge Technique for Chronic Ankle Instability in High-demand Athletes - Comparison with Bone Tunnel Technique

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Suture Bridge Technique for Chronic Ankle Instability in High-demand Athletes
- Comparison with Bone Tunnel Technique

Byung-Ki Cho

My disclosure is in the Final Program Book and in the AOFAS database

I have no potential conflicts with this presentation
Chronic Lateral Ankle Instability

❖ Correlation between mechanical stability & clinical, functional results?

→ suture anchor vs bone-tunnel technique
→ single vs double anchor technique

Difference in mechanical stability...but.
similar clinical results for short term f/u

❖ Difference of stability necessary to daily living and sports activity?
Chronic Lateral Ankle Instability in High-demand Athletes

- Delay of rehabilitation process: common
- Excessive stability compromising restoration of function (ROM exercise)?
- Demand of the fast return to sports
- But…Afraid of the recurrence of injury

Ligament reattachment technique enabling early rehabilitation with strong stability?
Demographics

✓ 32 cases (32 patients) < 30 yrs with chronic lateral ankle instability
✓ Followed up > 2yr after MBP done by one surgeon
✓ Suture bridge group vs Bone tunnel group (18 / 14)
✓ Surgical technique randomly assigned
✓ Age / Sex: 23.6 yrs, M / F (27 / 5)
✓ Follow up: 30 months
✓ MRI & concomitant A/S procedure

Amateur athletes
- Track sports (16)
- Basketball (8)
- Soccer (5)
- Taekwondo (3)
Surgical procedure

- Periosteal stripping & double suture anchor apply
- Secured capsule & ATF ligament with suture anchor
Surgical procedure

Reinforcement by crossed 4 strand of Fiberwires

Suture bridge technique by Pushlock knotless anchor
Clinical results

<table>
<thead>
<tr>
<th>Group</th>
<th>Preop</th>
<th>POD(3Mo)</th>
<th>POD(6Mo)</th>
<th>POD(1yr)</th>
<th>POD(2yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone tunnel</td>
<td>46.8</td>
<td>73.7</td>
<td>85.9</td>
<td>88.6</td>
<td>88.4</td>
</tr>
<tr>
<td>Suture bridge</td>
<td>45.5</td>
<td>76.9</td>
<td>88.2</td>
<td>90.8</td>
<td>91.6</td>
</tr>
</tbody>
</table>

Satisfaction rate by Sefton grading system
→ 86% in Bone tunnel group / 89% in Suture bridge group

Radiological results

<table>
<thead>
<tr>
<th>Talar tilt angle</th>
<th>Preop</th>
<th>POD(3Mo)</th>
<th>POD(6Mo)</th>
<th>POD(1yr)</th>
<th>POD(2yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone tunnel</td>
<td>15.8°</td>
<td>6.1°</td>
<td>6.4°</td>
<td>5.9°</td>
<td>6.3°</td>
</tr>
<tr>
<td>Suture bridge</td>
<td>16.3°</td>
<td>4.2°</td>
<td>4.3°</td>
<td>5.4°</td>
<td>5.5°</td>
</tr>
</tbody>
</table>

P-value

- Bone tunnel: 0.498
- Suture bridge: 0.026
- Red: 0.014
- Bone tunnel: 0.655
- Suture bridge: 0.271
Conclusion

- Comparable short-term clinical & functional results
- Advantage of more mechanical stability in early postoperative rehabilitation period
- Effective Tx. method for high-demand athletes
- Alternative option of reconstruction using allograft

Modified Brostrom Procedures using Bone tunnel vs. Suture bridge technique

→ Both are effective treatment methods for high-demand athletes
< References >

