MANAGEMENT OF CLOSED DISLOCATION OF THE TRAPEZIOMETACARPAL JOINT
REVIEW OF 14 CASES

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INTRODUCTION

- Rare lesion <1% hand injury
- Controversial management
- TM instability generate rhizarthrosis
- Few series in the litterature and no gold standard

Objective: feedback the clinical and radiological assessment of the different surgical techniques for closed TM dislocations
PATIENTS AND METHODS

- Monocentric retrospective study between May 2010 and May 2019, on the different operating techniques
- In CHRU Nancy, Hand Surgery Unit
- About TM dislocations closed, recent or chronic, without fracture, native joint
PATIENTS AND METHODS

- Dominant side
- Mechanism of injury
- Associated injury
- Time between injury and surgery
- Follow-up
- Treatment modality
- Postoperative results (pain, clinical instability, Kapandji score mobility)
- X-ray (OA)
RESULTS

- 14 patients
- 4 women - 10 men
- Average age 39 (21-56)
- 60% dominant hand
- Etiology: 6 cases of a traffic accident, 2 sport accidents, 2 work accidents, 3 violent falls (2 acute alcoholization) and 1 brawl
- 43% more serious injury associated
RESULTS

- Dorso-radial displacement
- Surgery time limit 7 days (0-50 days)

- 4 ligamentoplasty Eaton-Littler
- 6 pinning (Iselin or Wiggings)
- 4 ligament reconstruction with suture anchors (dorsal complexe)
# RESULTS

<table>
<thead>
<tr>
<th>Treatment modality</th>
<th>n</th>
<th>Follow-up (months)</th>
<th>VAS (/10)</th>
<th>Kapandji opposition (/10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton-Littler ligamentoplasty</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>9.8</td>
</tr>
<tr>
<td>Pinning</td>
<td>6</td>
<td>10</td>
<td>1.7</td>
<td>9.3</td>
</tr>
<tr>
<td>Ligament reconstruction with suture anchors</td>
<td>4</td>
<td>4.5</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>
RESULTS

- 6 weeks immobilization
- Average VAS 0.8 / 10 (0-4)
- Opposition Kapandji 9.6 / 10 (8-10)
- No instability
- No clinic subluxation
- Average follow-up 7 months
- 2 secondary rhizarthrosis
- No complication
<table>
<thead>
<tr>
<th>Investigators</th>
<th>Follow-up</th>
<th>n</th>
<th>Treatment modality (n)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shah et Patel, 1983</td>
<td>2.5 years</td>
<td>4</td>
<td>A. Open reduction + pinning (2)</td>
<td>A. Dorsal subluxation and moderate osteoarthritis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. Closed reduction + pinning (1)</td>
<td>B and C. No subluxation, no sign of osteoarthritis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C. Open reduction + cast in (1)</td>
<td></td>
</tr>
<tr>
<td>Watt et Hooper, 1987</td>
<td>3 years</td>
<td>12</td>
<td>A. Closed reduction + cast (9)</td>
<td>A. 3 cases with pain and instability</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. Closed reduction + pinning (3)</td>
<td>B. asymptomatic</td>
</tr>
<tr>
<td>Pequignot et al., 1988</td>
<td>2 years</td>
<td>15</td>
<td>A. Ligamentoplasty (13)</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. Closed reduction + pinning (2)</td>
<td></td>
</tr>
<tr>
<td>Sim, 1990</td>
<td>2 years</td>
<td>4</td>
<td>Closed reduction + cast</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td>Fontès, 1992</td>
<td>14 months</td>
<td>10</td>
<td>Ligamentoplasty</td>
<td>Rare pain, good mobility, 1 case of osteoarthritis</td>
</tr>
<tr>
<td>Simonian et Trumble, 1996</td>
<td>2 years</td>
<td>17</td>
<td>A. Closed reduction + pinning (8)</td>
<td>A. 50% revision surgery for recurrent instability</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. Ligamentoplasty (9)</td>
<td>B. no pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td>Toupin et al. 1995</td>
<td>28 months</td>
<td>8</td>
<td>A. Closed reduction + pinning (7)</td>
<td>A and B. good results in patients without pre-existing degenerative lesions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. open reduction + pinning (7)</td>
<td></td>
</tr>
<tr>
<td>Obert et al. 1997</td>
<td>8 years</td>
<td>7</td>
<td>Closed reduction + pinning</td>
<td>Same mobility as the healthy side, not very painful, 1 case of osteoarthritis</td>
</tr>
<tr>
<td>Bosmans et al. 2008</td>
<td>2 years</td>
<td>2</td>
<td>Closed reduction + cast</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td>Amar et al. 2008</td>
<td>19 months</td>
<td>6</td>
<td>Closed reduction + pinning</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td>Ansari et al. 2014</td>
<td>15 months</td>
<td>3</td>
<td>Ligament reconstruction with suture anchors</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td>Zhang et al. 2015</td>
<td>26 months</td>
<td>13</td>
<td>Ligamentoplasty</td>
<td>No pain, good mobility, no sign of osteoarthritis</td>
</tr>
<tr>
<td><strong>Our study</strong></td>
<td>7 months</td>
<td>14</td>
<td>A. Ligamentoplasty (4)</td>
<td>A and B. rare painful, very good mobility, 2 cases of severe osteoarthritis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B. Closed reduction + pinning (6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C. Ligament reconstruction with suture anchors (4)</td>
<td>C. No pain, good mobility, no sign of osteoarthritis</td>
</tr>
</tbody>
</table>
DISCUSSION

• Rare and difficult to diagnose and treat
• No gold standard
• Which ligament is the main stabilizer of the TM joint?
• Objective: no pain, good stability and no secondary rhizarthrosis
• Only one rule: stable & anatomic reduction
• Good clinical and radiological results in our study
DISCUSSION

• The early results on dorsal capsulo-ligament reinsertion on anchor are very good in our series but followed in the short term
• But follow up is very short and no conclusion can be made
• Need **long-term follow-up and more patient** to compare surgical techniques
CONCLUSION

- **Acute dislocation**
  - If stable reduction → percutaneous pinning good results
  - If reduction impossible and / or unstable first → open reduction, joint cleaning and reinsertion the dorsal ligament
  - Preferred dorsal approach

- **Chronic dislocation**
  - open reduction and dorsal ligament reconstruction with suture anchors
  - good alternative to ligamentoplasty
Merci de votre attention