Survival curves of trapezio-metacarpal prosthesis

About 294 cases

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Trapezio-metacarpal osteoarthritis

- Frequency:
  - 33% of post-menopausal women
  - 94% of > 80 y.o women

- 2 surgical options:
  - Trapeziectomy
  - Trapezio-metacarpal prosthesis (TMP)
Objective

• Evaluate long term survival rate of trapezio-metacarpal prostheses
Population

- 284 patients operated on between 2001 and 2016 (340 TMP)
- 244 women (86%) 40 men (14%)
- Mean age 65.7 y.o
- 75% retired
- 50 % dominant hand

Rhizarthrosis etiology

- Essential rhizarthrosis: 86.5%
- Digital osteoarthritis: 5.0%
- Rheumatoid arthritis: 3.2%
- Inflammatory arthritis: 3.8%
- Trapezial dysplasia: 1.5%
Prostheses

- 37 Roseland®
- 294 Maia®
- 10 Arpe®

- 253 Anterior approach (Gedda-Möberg) (74.4%)
- 87 lateral and dorsal approach (25.6%)
- Post-op: 3 weeks of cast
Evaluation

- Self questionnaire:
  - Pain (VAS)
  - Global satisfaction
  - Cosmetic satisfaction
  - Return to work/leisure delay
  - Quick-DASH
  - Thumb opposition (Kapandji)

- X-Ray (Kapandji views):
  - Periprosthetic changes
  - Loosenning
  - Fractures
  - Osteophytes
  - STT, MP, IP joint osteoarthritis
- **284 patients** between 2001 and 2016 (340 TMP)
- 29 lost to follow-up (35 TMP)
- 10 death (11 TMP)
- 245 patients contacted (**294 TMP**)
- **16 surgical revisions** TMP
- **225** self-questionnaire
- **200** X-rays
- Median follow-up: **6,3 years** (75,5 months)
- Max follow-up: **17,3 years**
Clinical results

- Median global satisfaction : 10/10
- Median cosmetic satisfaction : 10/10
- Median pain (VAS) : 1/10
- Median Quick-DASH : 20/100
- Opposition (Kapandji) : 9/10
- Return to work / Leisure : 2 mois
- Controlateral hand ? : OUI (90%)
Survival rate

- Criterion = Surgical revision
  - 16 Revisions (5.4%)
- Survival rate 90.8% at 17.3 years
  - 90.8% at 10 years
  - 95.9% at 5 years
  - 97.3% at 3 years
Complications

- 43 **minor complications** (14.6%)
  - CRPS (7.1%)
  - De Quervain’s tenosynovitis (6.5%)
  - Trigger thumb (0.7%)
  - Neuroma (0.3%)

- 23 **major complications** (7.8%)
  - Dislocations (3.4%)
  - Loosening (3.1%)
  - Fractures (1%)
  - Subluxations (0.3%)
  - No Sepsis

- 16 Revisions (5.4%)
Major complications

• 10 dislocations (3.4%)
  • 5 first year → inadequate cup orientation
  • 3 third year → various reasons
  • 2 delayed dislocation (>8y) → polyethylene wear

• Surgical revision in all cases

• 9 cup loosening (3.1%)
  • 4 painful → secondary trapeziectomy
  • 5 asymptomatic
### Literature: Survival Rate

- 30 studies since 1997 (« ball and socket » implants)
- 5 series > 100 implants (1 > 200)
- 9 studies with more than 10 years follow-up

<table>
<thead>
<tr>
<th>Author</th>
<th>N</th>
<th>Age</th>
<th>Follow-up</th>
<th>Survival</th>
<th>Pain (VAS)</th>
<th>Satisfaction</th>
<th>Quick-DASH (/100)</th>
<th>Kapandji (/10)</th>
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<tbody>
<tr>
<td>Mean</td>
<td>60,2</td>
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<td>5,5 years</td>
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<td>90,4 %</td>
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Litterature : complications

- Main complications:
  - Trapezial cup loosening
  - Dislocations

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Trapeziectomy Vs Prosthesis

- Few comparative studies
- 2 prospective studies:
  - Ulrich-Vinther et al, 2008, 1 year follow-up
  - Jager et al, 2013, 6 months follow-up
- Significant superiority of prosthesis:
  - Pain, strength, mobility, satisfaction, recovery time
  - No complication rate difference
- Best MCP correction
- Surgical revision is still possible (trapeziectomy)
Conclusion

- Satisfactory long term clinical results
- Survival > 90% after 10 years
- Limited complication rate (Trapezium ++)
- Optimum positioning of trapezial cup
  - Lateral approach
  - Fluoroscopy
- Futur:
  - Dual mobility prosthesis ?
  - Long term prosthesis superiority ?
Thank you for attention