Functional treatment of developmental hip dysplasia with the Tübingen hip flexion splint

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Reference
Atalar, H., Gunay, C., Komurcu, M.
Department of Orthopaedic Surgery and Traumatology, Gazi University School of Medicine, Ankara, Turkey.

Products
Tübingen hip flexion splint

Major Findings
With Tübingen hip flexion splint:

- 93% of the examined hips were successfully treated
  (Graf type 1 and no acetabular dysplasia)

Amount of successful treatment of hip dysplasia with the Tübingen hip flexion splint

Population
Subjects: 49 children with 60 hips requiring treatment
45 female, 4 male
Inclusion criteria: diagnosis of hip dysplasia

Study Design
Retrospective study:

Diagram:

- Diagnosis of hip dysplasia
- Treatment with Tübingen hip flexion splint
- 3 to 4 weeks
- Evaluation of hip maturity
- Continuation of treatment
- Evaluation of hip maturity
- Weaning period
- Evaluation of hip maturity

Hip maturity was assessed after 3 to 4 weeks of wearing the orthosis. If an improvement in hip maturity was observed treatment was continued with regular follow-ups. After acetabular maturation the weaning period was started where the splint was removed for a specific (growing) period of time per day.
# Results

## Functions and Activities

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<th>Outcomes</th>
<th>Results for Tübingen hip flexion splint</th>
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## Category: Clinical effects

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<td>Classification of Graf</td>
<td>93.3% of hips were successfully treated</td>
<td>n.a.</td>
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<td>6.7% of hips could not be treated successfully</td>
<td>n.a.</td>
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<td>Successfully treated hips did not differ from</td>
<td>0</td>
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<td>unsuccessfully treated hips with respect to initial hip stability findings (stable vs. others), Graf type (type 2b vs. others) or number of hips involved (bilateral vs. unilateral)</td>
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| Median age at start of therapy          | 18 weeks                                          | n.a.  |
|                                          | Successfully treated hips did not differ from unsuccessful treated hips with respect to age at start of treatment | 0     |

| Median duration of treatment (without weaning period) | 8 weeks | n.a.  |
| Median duration of weaning period           | 8 weeks | n.a.  |
| Median total treatment time                 | 17 weeks | n.a.  |
| Median duration of follow up               | 13.5 months | n.a.  |

No avascular necrosis, femoral nerve dysfunction or skin lesions related to the splint were observed

* no difference (0), positive trend (+), negative trend (-), significant (+/−), not applicable (n.a.)

## Author’s Conclusion

“The Tübingen splint provides abduction, but due to its different design it offers the advantages of preventing hip adduction and leaving the knee and ankle joints free. Our findings suggest that in infants with DDH, the Tübingen hip flexion splint is an effective form of treatment.” (Atalar et al. 2014)