Tübingen hip flexion splint

Clinical effects

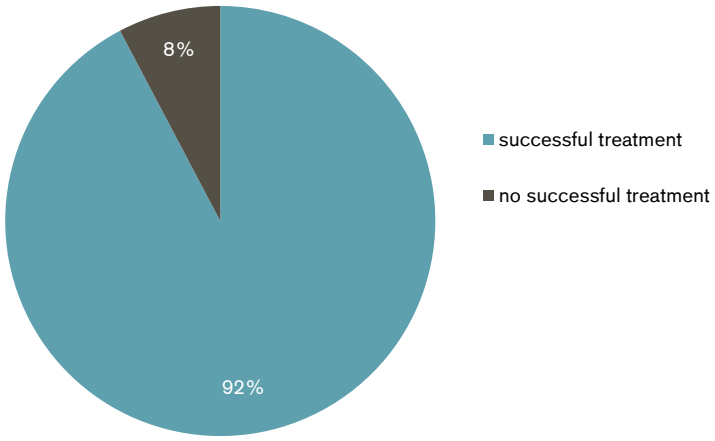
Major Findings

With Tübingen hip flexion splint:

→ **92% to 98% of hips were successfully treated**
hip type 1 according to Graf (Atalar et al. 2014; Pavone et al. 2015; Seidl et al. 2012)
no acetabular dysplasia (Atalar et al. 2014)

→ **Complications due to treatment were only reported in 0.55% of the treated hips.** (Pavone et al. 2015)

Amount of successful treatment of hip dysplasia with the Tübingen hip flexion splint (total number of treated hips: 544)



Clinical Relevance

"Developmental dysplasia of the hip (DDH) includes a series of anomalous conditions where hip joint dislocation, instability, or malalignment is present (Pavone et al. 2015)." Making reference to Ziegler et al. (2008) the incidence of DDH in Central Europe is between 2% and 4% with a luxation rate ranging from 0.5% to 1%. DDH is mainly diagnosed by ultrasonography (Pavone et al. 2015). The classification system of Graf (2007) allows the classification of hip types according to the severity of DDH.

The Tübingen hip flexion splint, described by Bernau (1990), aims at achieving and maintaining reduction of the hip by providing abduction and flexion. An advantage of the Tübingen hip flexion splint is that the child is able to move the knee and ankle joints while the splint is applied. Important factors influencing treatment success are early diagnosis and early treatment (Atalar et al. 2014).

Summary

Three studies evaluated the effectiveness of the Tübingen hip flexion splint:

92.28-98% of the observed hips were successfully treated with the Tübingen hip flexion splint (Atalar et al. 2014, Pavone et al. 2015, Seidl et al. 2012).

Complications (in form of avascular necrosis) due to treatment were only observed in 0.55% of hips (Pavone et al. 2015).

References of summarized studies

Atalar, H., Gunay, C., Komurcu, M. (2014). Functional treatment of developmental hip dysplasia with the Tübingen hip flexion splint. Hip International, 24 (3): 295-301.

Pavone, V., Testa, G., Riccioli, M., Evola, F. R., Avondo, S., Sessa, G. (2015). Treatment of Developmental Dysplasia of Hip With Tubingen Hip Flexion Splint. Journal of Pediatric Orthopaedics, 35: 485-489.

Seidl, T., Lohmaier, J., Hölker, T., Funk, J., Placzek, R., Trouillier, H. H. (2012). Die Tübinger Hüftbeugeschiene als Repositionsorthese?. Der Orthopäde, 41 (3): 195-199.

Other References

Bernau, A. (1990). The Tübingen hip flexion splint in the treatment of hip dysplasia. Zeitschrift für Orthopädie und Unfallchirurgie, 128 (4): 432-435.

Graf, R. (2007). The use of ultrasonography in developmental dysplasia of the hip. Acta Orthopaedica et Traumatologica Turcica, 41 (S1): 6-13.

Ziegler, J., Thielemann, F., Mayer-Athenstaedt, C., Günther, K.-P. (2008). Natürlicher Verlauf von Hüftreifungsstörungen und Hüftdysplasie. Eine Metaanalyse publizierter Literatur. Der Orthopäde, 37: 515-524.