

## Abstract Preview - Step 3/4

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Topic: 22 Pediatrics

**Title:** 4-Year Follow-up of Ultrasound-Based Diagnosis and Non-Surgical Treatment of Developmental Dysplasia of the Hip in Mongolia: A Prospective Cohort Study

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Text:

**Purpose:** Avascular necrosis of the femoral head and residual dysplasia can occur after non-surgical treatment of developmental dysplasia of the hip (DDH). Both are indications for surgical procedures and cause pain and early osteoarthritis despite interventions. We therefore aimed to determine their prevalence in a prospective cohort study of Mongolian newborns.

**Materials and methods:** Hips of all children born within one year in the largest pediatric hospital Mongolia (n=8356) were examined by ultrasound at a median age of one day. If DDH was present the patient was treated with a Tubinger splint (n=107). All treated children could be discharged with healthy type 1 hips after monthly checks by ultrasound. A representative sample of 51/107 children treated was followed up at the age of 3-4 years with conventional radiography. We determined 1) the formation of the femoral head (condensed) and joint space (narrowed) as signs of avascular necrosis; and 2) the acetabular angle ( $\geq 28$  degrees in  $\leq 3$ -year-old participants or  $\geq 25$  degrees in  $> 3$  years) as sign for residual dysplasia. Furthermore, we asked the parents about the use of swaddling.

**Results:** No child showed signs of avascular necrosis. One child had a sign of residual dysplasia (acetabular angle 25.8 degrees on the left hip at age 3.5 years). Angles in all other children were below thresholds and highly variable, ranging from 11.1 to 26.2 degrees. They were slightly higher in girls than boys, and on the left compared to the right. Swaddling behavior did not affect the results.

**Conclusion:** Ultrasonographic diagnosis of DDH and treatment with Tubinger splint within the first few weeks of life is safe and efficient in preventing surgical interventions.

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