

Radiographic follow-up in CPUP to prevent hip dislocation



Children with cerebral palsy (CP) have an increased risk of hip dislocation. Without a surveillance program, combined with subsequent indicated treatment, 10-20% of all children with CP develop hip dislocation. Several risk factors are known *, but also children without these established risk factors are at risk of developing hip dislocation. To prevent hip dislocation, the child's hips should be followed both clinically and radiographically during the entire growth period.

* Risk factors

- GMFCS III-V
- Scoliosis
- Windswept deformity
- Adduction – flexion contracture
- Spasticity of hip adductor and flexor muscles

Follow-up program

The program is based on the child's age and GMFCS level. The findings at the clinical examination must also be taken into account in the overall assessment. At times, it will be necessary to deviate from the program and perform examinations more often than the care program recommends.

GMFCS I	No radiographic examination, unless deterioration of hip and/or spine is noted during the clinical examinations.
GMFCS II	Radiographic examinations at 2 and 6 years of age. If MP is <33% and no deterioration is noted during the clinical examinations, no additional radiographic examinations are needed.
GMFCS III-V	Radiographic examination immediately following a confirmed/suspected diagnosis of CP followed by annual radiographic examinations until eight years of age. After age 8, the time interval between examinations is determined individually based on the result of the previous clinical and radiological examinations. Children > 8 years with normal radiology for several years and no deterioration noted during the clinical examinations are recommended to undergo radiographic examinations every two years until growth plate closure.

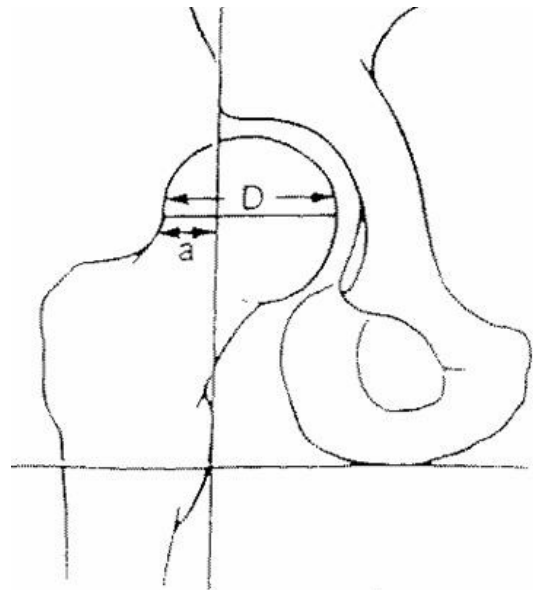
Children with pure ataxia or athetosis at GMFCS levels II-III and without deterioration noted during the clinical examinations may be excluded from further radiographic examinations - provided that the first radiographic examination is normal.

Comments

The degree of lateral displacement is measured with the Reimers Migrations percentage (MP)

$$MP = a/D \times 100.$$

- Hips with MP < 33% need only to be followed further according to the program.
- In hips with MP 33-40%, the clinical examination and the development of MP over time determine whether preventive surgery should be performed.
- Most hips with MP > 40% need surgery to prevent further displacement.



Radiation dose

The radiation dose of a pelvic radiograph is equivalent to the radiation dose that the average Swede gets exposed to from naturally occurring radiation in the environment in a 2 week span. The calculation is based on a person who weighs 40 kg. Small children are exposed to a lower dose; adults are exposed to a radiation dose equivalent to 8 weeks background radiation in the environment.

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