Fast MRI in the diagnosis of painful hip in children

Published: 28-11-2011
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This study investigates the use of MRI during diagnostic workup for children presenting with hip pain and compares the usefulness of MRI to conventional radiography and ultrasound.

Ethical review	Not approved
Status	Will not start
Health condition type	Joint disorders
Study type	Observational non invasive

Summary

ID

NL-OMON36087

Source
ToetsingOnline

Brief title
MiP-Hip;(MRI in Pediatric Hip Complaints)

Condition

- Joint disorders

Synonym
hip complaints, hip pathology

Research involving
Human

Sponsors and support

Primary sponsor: HagaZiekenhuis
Source(s) of monetary or material Support: Maatschap Radiologie Hagaziekenhuis

Intervention

Keyword: fast MRI, hip complaints, pediatric

Outcome measures

Primary outcome

Pathology:

No disease/transient synovitis/Legg-Calvé-Perthes/slipped capital epiphysis/

hip dysplasia/ impingement/osteomyelitis/septic arthritis/juvenile rheumatoid

arthritis/tendinitis/ myositis/ traumatic injury/ bone tumor/ other.

Outcome of the study: sensitivity of MRI compared to conventional radiography

and ultrasound in case of hip complaints in children.

Secondary outcome

not applicable

Study description

Background summary

Hip complaints are infrequently encountered in children and while usually no underlying pathologic process can be found and the complaints will eventually subside, sometimes hip complaints may indicate underlying disease. In addition to relatively benign conditions such as transient synovitis, more severe causes (Perthes disease, osteomyelitis, septic arthritis) which acquire immediate medical attention can be found. For effective treatment and to prevent advanced disease and possible complications, early diagnosis is desirable
In our clinic in case of hip complaints conventional radiographs (AP and Frog Lateral) are taken, often followed by ultrasound. Only if these will fail to be diagnostic and in case of high clinical suspicion of underlying pathology, imaging will include CT or MRI.
CT is effective in showing bone pathology, but has limited value in assessing intra-articular processes and early inflammatory disease.
It is our hypothesis that MRI has a higher diagnostic yield compared to conventional radiography and ultrasound in cases of hip pain in the pediatric population. MRI is known to be a safe procedure, but is frequently omitted due to difficulty in accessibility, and the assumed distress it may cause. By running three short MRI sequences the total duration of the MRI can be limited

to fifteen minutes and can be performed in an emergency setting. Also, according to Westra et al distress has been overestimated and MRI in children is only accompanied by minimal discomfort in the majority of cases.

Study objective

This study investigates the use of MRI during diagnostic workup for children presenting with hip pain and compares the usefulness of MRI to conventional radiography and ultrasound.

Study design

for a more detailed description; see study protocol.

Children aged 4-16 years old presenting at the radiology department for diagnostic imaging in case of suspected hip pathology are asked to enter the study. In case of consent, MRI of the hip will be performed (coronal T1, sagital T2 PD, coronal T2 SPIR). MR imaging should take place within 72 hours of radiography and ultrasound.
Xrays and MR images will be assessed by two independent radiologists.
Ultrasound imaging will be performed by the radiologist on duty.
When all imaging has taken place, the diagnostic value of the xrays and ultrasound will be compared to the diagnotic value of MRI by use of statistic tests.

Study burden and risks

Burden: See above. A study by Westra et al (Eur J Pediatr 2010) has shown that most children only experience minimal discomfort by entering the MRI scanner. In case of serious discomfort imaging will be cancelled. Patients are free to withdraw at any time.

Risks: To date there are no risks from magnetic resonance imaging.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Adolescents (16-17 years)
Children (2-11 years)

Inclusion criteria

aged 4-16 years
hip complaints, sent in by family doctor for conventional radiography or ultrasound

Exclusion criteria

known hip pathology, previous fractures of pelvic girdle/hip or any other condition that might affect normal hip anatomy

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Diagnostic

Recruitment

NL

Recruitment status:	Will not start
Enrollment:	40
Type:	Anticipated

Ethics review

Not approved

Date:	28-11-2011
Application type:	First submission
Review commission:	METC Leiden-Den Haag-Delft (Leiden) metc-ldd@lumc.nl

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL37031.098.11