Analysis of the pathomechanics in patients with painful early onset of osteoarthritis in the CMC-1 joint.

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This project focuses on detection of predisposing factors (e.g. instability of the joints) for the onset of early CMC-1 joint osteoarthritis based on CMC-1 joint kinematics. For this purpose we need to develop a new diagnostic 4D imaging tool. The...

Ethical review	Approved WMO	
Status	Recruitment stopped	
Health condition type	Joint disorders	
Study type	Observational invasive	

Summary

ID

NL-OMON38369

Source ToetsingOnline

Brief title

Analysis of the pathomechanics in early onset CMC-1 osteoarthritis

Condition

• Joint disorders

Synonym osteoarthritis

Research involving Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum **Source(s) of monetary or material Support:** Ministerie van OC&W

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Intervention

Keyword: CMC-1, imaging, Osteoarthritis, Pathomechanics

Outcome measures

Primary outcome

We expect to find a specific set of motion tasks indicative for the early signs

of osteoarthritis in the CMC-1 joint. We hypothesize that there is a

difference in pathomechanics of CMC-1 joint osteoarthritis in thumbs with a

stable or instable CMC-1 joint as detected by 4D imaging methods. Furthermore

we expect the position of the MCP-1 joint to influence the position of the

first metacarpal bone in relation to the trapezium.

Secondary outcome

not applicable

Study description

Background summary

Osteoarthritis of the carpometacarpal (CMC) joint of the thumb is a significant clinical problem with a large impact on society, the individual patient and health economics. Currently there is no reliable diagnostic tool for the diagnosis of CMC-1 joint osteoarthritis and are patients being diagnosed and treated based on their clinical symptoms and 2D or 3D imaging. This research project intends to create a new diagnostic protocol which helps in decision making concerning treatment and will lead to more efficient use of therapy, better functional outcome, prevention of progression of the disease and less costs for care.

Study objective

This project focuses on detection of predisposing factors (e.g. instability of the joints) for the onset of early CMC-1 joint osteoarthritis based on CMC-1 joint kinematics. For this purpose we need to develop a new diagnostic 4D imaging tool.

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The aim of the first part of this project is to select common movement and loading patterns in daily life that cause complaints of pain in patients with early onset of osteoarthritis in the CMC-1 joint. Second we will analyse CMC-1 joint pathomechanics in patients with osteoarthritis of the CMC-1 joint with tailor made 4D imaging methods under loading conditions and motions patterns of the thumb that give complaints.

Study design

For the selection of common painful movement patterns we will use an already existing instrument as a starting point: the Sequential Occupational Dexterity Assessment (SODA) and will investigate the usefulness of the different ADL subtest within the SODA test for scoring patients with CMC-1 joint osteoarthritis. The 4D imaging protocol and design of the dynamic loading system will be guided by the outcome of the ADL activity related parts of the SODA tests. Patients with only pain or mild (early) CMC-1 joint osteoarthritis and their matched controls will be asked to perform these standardised movement and loading patterns during 4D imaging of the CMC-1 joint. Center of rotation of the MCP-1 bone and joint space thickness will be analyzed with respect to their usefulness as parameters to differentiate between the pathomechanical mechanisms of different patient groups. We will also examine CMC-1 joint kinematics of these patients again with their MCP-1 joint in fixed flexion to investigate the possible benefit of splinting this joint.

Study burden and risks

The effective radiation dosis due to CT-imaging is estimated and calculated to be around 0.8mSv. This is qualified bij de IRCP as a minor risk.

Contacts

Public Academisch Medisch Centrum

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age Adults (18-64 years) Elderly (65 years and older)

Inclusion criteria

Patients with painful early onset of osteoarthritis in the CMC-1 joint

Exclusion criteria

Patients with long term and progressive (post-traumatic) osteoarthritis of the CMC-1 joint

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL Recruitment status:

Recruitment stopped

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Start date (anticipated):	31-10-2012
Enrollment:	100
Туре:	Actual

Ethics review

Approved WMO Date: Application type: Review commission:

03-07-2012 First submission METC Amsterdam UMC

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 CCMO

ID NL36772.018.12