who do not speak the Dutch language; those with previous ACL injury or meniscus or cartilage damage (diagnosed by an orthopaedic surgeon or sports physician); those with previous surgery of the involved knee; those with disabling co-morbidity; and those with already osteoarthritic changes on X-ray (Kellgren & Lawrence > 0) will be excluded. As control group (n=80) the healthy knee of the patients will be used (with similar exclusion criteria).

Patients will be recruited at the outpatient clinic of the department of orthopaedics of Erasmus Medical Center (Rotterdam) and the department of orthopaedics or sports medicine of Medical Center Haaglanden (The Hague).

The expected recruitment period was 1 year. Unfortunately this period needed to be extended. We started with inclusions in February 2009 and the current expectation is to obtain the inclusion of 160 patients in September 2010. There were several reasons for this delay, of which two in particular. First, a lot of patients were excluded because of their age (> 45 years or < 18 years). Secondly, a lot of patients visited the outpatient clinic with initial trauma of longer than 6 months ago.

Measurements: Patients are asked to fill in several questionnaires (VAS for pain, Lysholm score, Tegner activity scale, KOOS, IKDC 2000 subjective, SF-36, SQUASH). Physical examination of both knees is performed (range of motion, stability tests, KT-1000 arthrometer, one leg hop test). X-ray (weight-bearing antero-posterior, lateral and Rosenberg view), a DXA scan (with the knee in standard position) and MRI of both knees are made. First, the X-ray is evaluated whether OA changes are present (Kellgren & Lawrence > 0). In addition, the X-ray and DXA scan measurements are used for evaluating the bone shape and bone density changes over time (active shape modeling). To identify early degenerative changes on MRI, we will use the Knee Osteoarthristis Scoring System (KOSS), a semi quantitative, multi-feature scoring method, reported by Kornaat et al.

Serum and urine are collected for assessment of biomarkers. At the end of the study a combination of biomarkers will be determined.

Results: At this moment the recruitment period is still ongoing. At the 30th of April 2010 109 patients were included, of which 66% is male. The median Tegner activity scale, before trauma, is 9 (range 3 to 10).

Methods: During 5 years between 2004 and 2008, 265 consecutive arthroscopic surgeries were performed in our institute. In three knees (1.1%) out of 265, ICRS grade-IV total cartilage defect was found arthroscopically, even though Kellgren-Lawrence (KL) radiological OA grading was diagnosed as grade-0 (normal). The medical records of these three cases were retrospectively reviewed and clinical features were described.

Results: These three cases were all females aged 36, 40 and 55 years whose BMI was 25.8, 24.5 and 17.7 kg/m², respectively. They suffered from medial knee pain on a single joint without any prior trauma and conservative treatment for more than three months failed using oral and/or percutaneous NSAIDS administration. KL radiographic OA grading was all grade-0. Lower extremity alignments were all neutral on standing plain radiographs. MRI showed cartilage defect on weight bearing surface of medial femoral condyle (MFC) or bone attrition at subchondral lesion of MFC. Diagnosis of ICRS grade-IV was defined arthroscopically, and kissing lesion on medial tibial plateau was none or minimal (ICRS grade-0–I). Two of them were successfully treated osteochondral autogenous transfer (OAT), and the rest is scheduled for OAT.

Conclusions: Knee OA is gradually progressive degenerative joint disease so that its prevention and early detection are important. The results of this study showed that both MRI and arthroscopic examinations were crucial for detection of “ultra-early” knee OA. Physicians should keep these lesions in mind even though there is no radiographic feature of knee OA.

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FUNCTIONAL IMPAIRMENT IN PATIENTS WITH FEMOROACETABULAR IMPINGEMENT WITHOUT RADIOGRAPHIC OSTEOARTHRITIS

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Purpose: To assess functional impairment in patients with clinical and radiological evidence of FAI and without evidence of OA by plain radiography.

Methods: A prospective study including consecutive patients aged >50 years who consulted for hip syndrome clinically and radiologically suggestive of FAI. We analyzed demographic and anthropometric variables, radiological FAI type, pain intensity (VAS 0-100mm), presence of pain at night. We evaluated the severity of functional impairment using the Lequesne hip index.

Results: We analyzed 31 patients (19M/12H), mean age 40.8±6.5 years, evolution time was 33.8±9 months. Ten patients (32.25%) had a mild (1-4 points) and 11 (35.5%) a moderate (5-7 points) Lequesne index, while 8 (25.8%) had a severe (> 7 points) and 2 (6.5%) had a very severe (> 11 points) Lequesne index. Patients with a Lequesne index severe or very severe had an evolution time significantly lower (19.9±7.7 vs. 40.1±38 months, p = 0.05) compared with those with mild to moderate severity. Patients with FAI more severe functional impairment were predominantly males (50 vs. 33.3%), showed higher pain levels (VAS 5.5±2.1 vs. 4.3±1.8cm), practiced sports and/or were engaged in more vigorous activities (55.6 vs. 28.6%) and had a radiological cam type FAI (50 vs. 38.9%), although neither was statistically significant, probably due to small sample size.

Conclusions: Patients with FAI appear to have significant functional impairment even before radiological osteoarthritic changes were observed. The shorter time of evolution in those with greater functional impairment could be related with the existence of a group of poor prognosis in which progressive deterioration is rapid, especially in association with activities that involve stress on the hip.
to accomplish activities of daily living, to make the most of life (taking care of relatives, mainly grand-children, having a full social life), to be able to do what matters most. About personal integrity, patients expected a TKA that does not show, to forget having a TKA, a TKA that is not fragile and will last for a long time. Physicians had a quite realistic representation of what patients’ expectations usually are which does not mean that they fulfill these expectations especially those concerning care providers. Care providers had also expectations about patients which are classified in two main categories “the good patient” (cooperative, understanding, mature, as patients) and those potentially posing problems (over informed, asking for a personal relationship, who do not want to ear or understand, asking for surgery at once).

Conclusions: Our results suggest that patients satisfaction about TKA could be increased by better analyzing and discussing patients’ expectations with them in order to make these expectations more realistic and individualized.

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TISSUE STRUCTURE MODIFICATION IN END-STAGE KNEE OSTEOARTHRITIS BY USE OF JOINT DISTRACTION

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Purpose: End-stage knee osteoarthritis (OA) is frequently treated by total joint replacement (TKP). In 40% of the cases this relative expensive treatment is performed under the age of 65 years, while the procedure has a higher risk of failure in younger patients due to higher physical demands. Knee joint distraction (KJD) is an experimental treatment for end-stage knee OA, aimed at unloading the joint cartilage and subchondral bone by use of an external fixation frame. The technique proved to be clinically effective for end-stage ankle OA. The present study describes an exploratory, open, uncontrolled trial to verify whether KJD has the potency to postpone a TKP by inducing clinical improvement and cartilage repair.

Methods: Twenty patients, under 60 years of age, with end-stage knee OA were treated with KJD for 2 months. Two monotubes with internal coil springs were placed parallel on the medial and lateral side bridging the knee joint and subsequently lengthened for 2 mm. In the following three days the joint was distracted twice a day for 0.5 mm, bringing the total distraction to 5 mm for the remaining time. Patients were encouraged to load the knee during distraction.

After 2 months, tubes and pins were removed. At home, under supervision of a physiotherapist, distraction was practiced, without imposed restrictions. Most patients (n=17) suffered from single or multiple pin tract infections, all being successfully treated with antibiotics.

The primary structural outcome was cartilage thickness by use of quantitative MRI and digital analyses of standardized X-rays. Primary clinical outcome was pain and function by use of the WOMAC questionnaire. Secondary outcome parameters were, MRI determined decrease in area of denuded bone, increase in cartilage area and volume as well as biochemical markers of cartilage collagen type II synthesis and breakdown. For all being successfully treated with antibiotics.

Conclusions: Joint distraction in treatment of end-stage knee osteoarthritis is able to induce significant intrinsic joint cartilage repair, based on MRI, X-ray and biochemical marker analyses. These significant tissue structure changes are accompanied by clinical improvement in pain and function.

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LONG TERM EFFECT OF A SUPERVISED EXERCISE PROGRAM AND PATIENT EDUCATION FOR PATIENTS WITH HIP OSTEOARTHRITIS. A RANDOMIZED CONTROLLED TRIAL

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Purpose: The objective of the study was to evaluate the long term effect of a three months supervised exercise program in addition to patient education, compared to patient education only, for patients with hip osteoarthritis, not eligible for total hip replacement surgery (THR) at time of inclusion.

Methods: One hundred and nine patients were included in the study between April 2005 and October 2007. Inclusion criteria were age 40-80 years, hip pain for three months or more, radiographically verified hip osteoarthritis (Danielson criteria), and Harris Hip Score between 60-95 points, i.e. their impairments were not severe enough for considering THR at time of inclusion. All patients initially went through three sessions of patient education. After completing the education program baseline assessments were conducted, and the patients were then randomized to 1) a supervised exercise group (EG, n=55) who went through a 12-week exercise program, or 2) a control group (CG, n=54). Both groups were recommended to follow the information giving during the patient education. The EG performed exercises 2-3 times weekly supervised by a physical therapist. The exercises consisted of strength training, functional exercises, and flexibility exercises. All patients were followed-up at four months (FU4m), ten months (FU10m), 16 months (FU16m), and 29 months (FU29m) after inclusion. The main outcome measurement was the Western Ontario and McMaster Universities Arthritis Index (WOMAC VA3.1), an osteoarthritis specific questionnaire with subscales of pain, stiffness and function, expressed best to worst on a 0-100 scale. Secondary outcome measures were the 36-item Short-Form health related quality of life questionnaire (SF-36v2) with subscales of physical function, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health, and the modified Physical Activity Scale for the Elderly (mPASE). Linear mixed model analyses were used for between group differences over time.

Results: There were no significant differences between the groups at baseline. Drop-outs were 0% at FU4m, 15% at FU10m, 22% at FU16m and 36% at FU29m. Twenty-six of the drop-outs at FU29m (10 in EG and 16 in CG) were due to THR.

As shown in Table 1, the WOMAC Physical Function subscale showed a significantly improved score for the EG compared to the CG over the follow-up period. No significant differences between groups over the follow-up period were found for the WOMAC Pain or WOMAC Stiffness subscales. The SF-36 Bodily Pain showed significantly improved score for the EG compared to the CG (p=0.008) over the follow-up period, but no significant differences between groups were found for any of the other SF-36 subscales, or for the physical activity level (mPASE) over the follow-up period.

Conclusions: The EG showed a significant improvement in physical function (WOMAC) and pain (SF-36 Bodily Pain subscale) compared to the CG over the follow-up period, but there were no significant differences between the two groups for other WOMAC or SF-36 subscales, or for physical activity level (mPASE). Based on the results in this study, access to both patient education and supervised exercise may be favourable for improving physical function and pain in patients with hip OA.