Abstract Halftime Review

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Background
Meniscus extrusion, i.e., when the peripheral border of the meniscus is substantially located outside the knee joint margin, is associated with meniscal degeneration, meniscus tears and the presence of osteoarthritis (OA). The aim of this PhD-work is to investigate what is to be seen as “normal” meniscal extrusion (as seen on MRI), its change over time, the relationship to knee pain, radiographic OA (RTG OA), bone marrow lesions (BML), cartilage damage and meniscus damage.

Questions
Paper 1: What is the natural history of meniscus position in asymptomatic adults?
Paper 2: What is the normal range of meniscus position and its relationship with meniscus tear in knees without OA in the general population?
Paper 3: Is there a cut-off value for meniscus extrusion where the knee is at risk? Any correlation to RTG OA, meniscus damage or bone marrow lesions?
Paper 4: What is the relationship with meniscus extrusion and tear to knee pain?
All papers are cohort studies using data from the Osteoarthritis Initiative (OAI) (paper 1) and the Framingham Community cohort (paper 2-4).

Preliminary results
There was a slight increase in medial meniscal body extrusion over 4 years. The mean meniscal body extrusion medially was 2.7 mm and laterally 1.8 mm. Meniscal damage was associated with more extrusion medially. In asymptomatic adults, the relative degree of meniscus body extrusion is more pronounced in women. Persons with radiographic OA, BML or cartilage damage had on average larger meniscal extrusion. 4 mm as cut-off value to denote “pathological” meniscal extrusion has a higher accuracy then the commonly used 3 mm.

Conclusions
Although a slight increase in extrusion over time was noted for the medial body, positions were relatively stable within subjects over time. Medial meniscal damage is a factor associated with medial meniscal body extrusion and less cartilage coverage. Mean medial meniscal body extrusion in persons without radiographic OA approximates the commonly used cut-off (3 mm). The cut-off value 4 mm has a better predictive value than the generally accepted 3 mm for RTG OA, BML and cartilage damage.

Publications:
Meniscus body position and its change over four years in asymptomatic adults: a cohort study using data from the Osteoarthritis Initiative (OAI) http://www.biomedcentral.com/1471-2474/15/32