control group. However, this pattern was not seen in synovium. Furthermore, RANKL expression ($r=-0.89$, $p<0.001$) and RANKL/OPG ratio ($r=-0.74$, $p=0.01$) in cartilage from AIA rabbits were inversely related to subchondral bone mineral density. Significant differences in the expression of RANKL resulted from the comparison of OA and healthy rabbits (204.92 ± 52.47 *vs* 64.15 ± 22.26, $p=0.014$). Peri-cellular RANKL expression was observed throughout all cartilage zones, especially increased and mainly detected in the extracellular matrix, near the vessels, of calcified cartilage in AIA rabbits. The cartilage from OA rabbits showed the same peri-cellular expression pattern but no extra-cellular expression was detected. Co-cultures demonstrated that PGE2-induced RANKL synthesis from human chondrocytes induced osteoclasts differentiation from PBMC.
Conclusions: Our data suggest that the increased RANKL expression observed in the cartilage from OA and AIA could be responsible, at least partially, of the development of juxta-articular osteoporosis associated with chronic arthritis. However, this mechanism of bone loss is less manifest in early OA than in chronic arthritis.

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PRELIMINARY STUDY: NON DESTRUCTIVE EVALUATION OF EARLY CARTILAGE MORPHOLOGICAL CHANGES IN A RABBIT MODEL BY EQUILIBRIUM PARTITIONING OF AN IONIC CONTRAST AGENT BY MICROCOMPUTED TOMOGRAPHY (EPIC-μCT)

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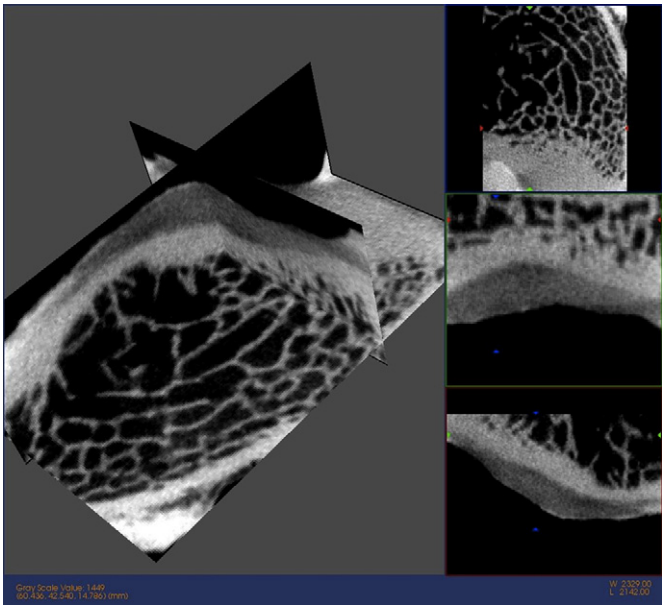
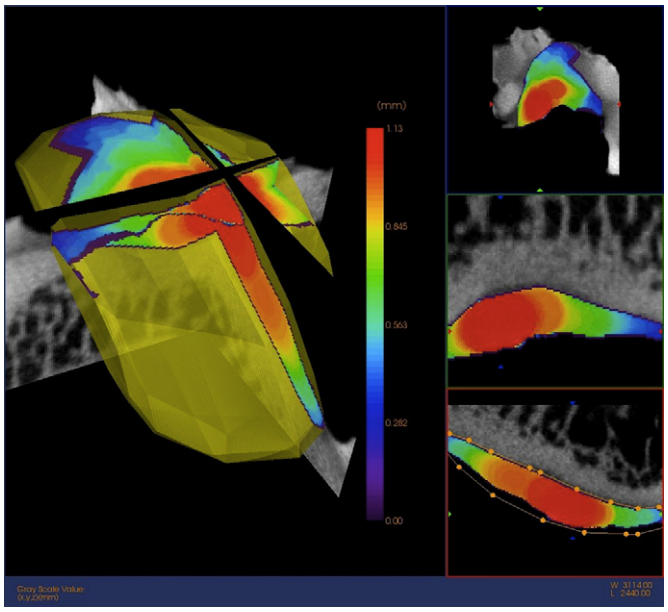
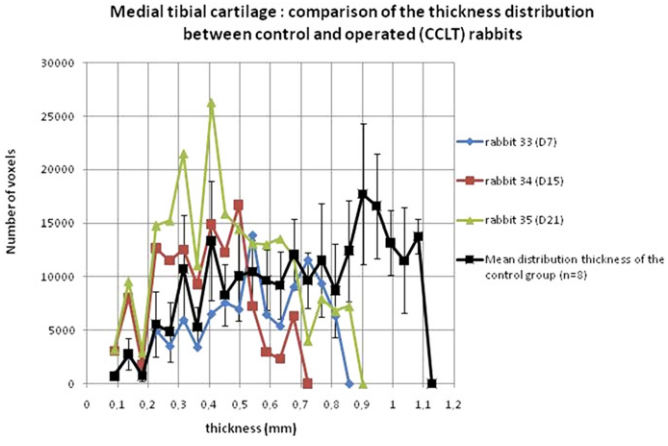
Purpose: To evaluate non destructively early morphological changes of the medial tibial cartilage in a rabbit OA model by Equilibrium Partitioning of an Ionic Contrast agent via microcomputed tomography (EPIC-μCT).
Method: Three adults White New Zealand (WNZ) rabbits were operated on : Cranial Cruciate Ligament Transection (CCLT) of the left knee joint. Gross examination and EPIC-μCT at 45 μm3 of both tibial plateaus were performed at 7, 14 and 21 days after surgery. Eight non-operated adult WNZ rabbits of the same weight range were used as control.
Results: Concentration and incubation time for equilibration were determined depending on the time interval since surgery. Anatomical parameters were found for reproducible selection of the region of interest (ROI). Manual segmentation of the cartilage was performed (fig_1).



Mean and standard deviation of the 3 Dimensional (3D) distribution thicknesses of the left medial tibial cartilages were obtained(fig_2).



For the control group, the max of the mean distribution thickness was 1.08 mm and the peak of the mean distribution thickness was at 900 μm. A shift of the distribution thickness of the operated rabbit seemed to occur toward the small thicknesses. Particularly, the peak of the distribution thickness was at 540 μm at D7, 496 μm at D15 and 406 μm at D21(fig_3).
Conclusion: The EPIC-μCT was feasible at early stage of experimental osteoarthritis. Medial cartilage distribution thickness peak seems to decrease with time. More data are requested to obtain mean and standard deviation of the 3D cartilage distribution thickness at the different time point. This preliminary study gives good hope for this technique future.



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CARTILAGE DEGRADATION, EXPRESSION OF MMP-13 AND OXIDATION MARKERS INCREASE WITH AGE IN THE KNEE JOINTS OF AGED MICE

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Purpose: The aim of this study was to investigate age-related cartilage changes in the knee joints of mice. Cartilage degeneration is associated