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Published in:
Abstracts - Oktober 2020

Publication date:
2020

Document Version
Publisher's PDF, also known as Version of record

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Background: Choosing the optimal diagnostic approach to knee osteoarthritis could save both the radiation of extra radiographs and costly examinations in the diagnostic process.
Purpose / Aim of Study: The purpose of this study was to compare the joint space width of specialized radiography to the cartilage thickness on MRi scans in patients undergoing Unicompartmental and Total Knee Replacements.
Materials and Methods: A prospective study, including 60 patients. Specialized radiographs were taken with the Skyline view, the Rosenberg view, and coronal stress radiography. Experienced knee surgeons performed measurements of joint space width (JSW) and minimal joint space width (mJSW) on all radiographs. One experienced radiologist performed measurements of cartilage height on MRi scans. Radiographic measurements of each radiographic technique were used to compare with cartilage height measurements in MRi scans, in each respective knee compartment.
Findings / Results: When comparing specialized radiography with MRi, a weak correlation was found in the patellofemoral compartment (Medial facet: JSW/mJSW; Đ= 0.39/0,35 ; CI = 0.07-0.58/0.09-.058 ; p< 0.005) (Lateral facet: JSW/mJSW; Đ= 0.28/0,32 ; CI = 0.03- 0.5/0.06-.05 ; p< 0.016), a negligible and non- significant correlation was found in the medial compartment, and a moderate to strong correlation in the lateral compartment(Rosenberg view: JSW/mJSW; Đ= 0.56/0,62 ; CI = 0.3-0.8/0.4-.8 ; p <0.000) (Valgus stress: JSW/mJSW; Đ= 0.7/0,61 ; CI = 0.5-0.84/0.4-.77 ; p <0.000).
Conclusions: MRi by itself cannot and should not replace these specialized radiographic methods when choosing implant type. MRi should be reserved for more special cases where abnormal radiography or suspicion of atypical clinical findings present themselves. We recommend that a work-up of patients for mUKA include a skyline view with a Rosenberg view projection as a standard, and avoid the extra costs of MRi scan and/or extra radiation of additional special radiographs.