"ROLE OF MAGNETIC RESONANCE IMAGING IN EVALUATION OF INTERNAL DERANGEMENT OF THE KNEE JOINT AND IT'S PEARLS AND PITFALLS IN COMPARISON TO ARTHROSCOPY"

By

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ABSTRACT

AIMS AND OBJECTIVESOF THE STUDY

1. Radiological evaluation of internal derangement of the knee joint using magnetic resonance imaging.
2. To study the pattern of internal derangement in relation to mechanism of injury.
3. To assess the pearls and pitfalls of MRI findings in comparison with arthroscopy.

MATERIALS AND METHODS

Data was collected from a total of 30 patients clinically suspected of internal derangement of the knee joint referred to the department of Radio-diagnosis at SDM Medical College, Manjushri Nagar, Dharwad. These patients underwent MRI Knee Joint along with Arthroscopy over a period of 1 year.The equipment used was 1.5 Tesla GE Signa contour MRI Machine. Appropriate MRI Scan protocol was applied .The results of the study were tabulated in a structured Table. It was a hospital based Prospective study.

RESULTS:

Most commonly patients presented with history of trauma and the most common presenting symptoms were knee joint pain and joint instability. The common age group to be involved was between 26-35 years. The following patterns of knee injuries were seen:

• Most common injury was ACL tear of which complete tears were more common. Posterior cruciate ligament tears were not found.

Among the Meniscal injuries, medial Meniscal tears are more common than lateral meniscus. Out of the 13 patients with medial meniscal tears, 9 had bucket handle tears, 2 had complex tears, 1 had horizontal tears and 1 had vertical tear.

Out of the 12 patients with lateral meniscal tears, 3 had radial tears, 7 had complex tear, 2 had bucket handle tears, 1 had posterior horn tear and 2 out of them were discoid meniscus.

In our study bucket handle tears were common than other types of tears.

In our study, there was no evidence of association between medial meniscus/lateral meniscus tears with the anterior cruciate ligament tears.

There were 2 cases of Medial Collateral Ligament tear in our study and arthroscopy showed positive findings in one case.

There were 5 cases of Lateral Collateral Ligament tear in our study and arthroscopy showed positive findings in only one case.

Two cases showed osteo-chondral defect on MRI and similar findings were found on arthroscopy. MRI is not very sensitive in detecting the bony pathology, however the finding of osteo-chondral defects were the same.

CONCLUSION

MRI is an excellent, noninvasive, radiation free imaging modality with an excellent capability of multi-planar imaging and excellent soft tissue delineation. It can accurately detect, localize and characterize various internal derangements of the knee joint and help in arriving at a correct anatomical diagnosis, thereby guiding further management of the patient. MRI has high sensitivity and specificity for Anterior Cruciate Ligament, Posterior Cruciate Ligament, Lateral Meniscus and Medial Meniscus tears.

Key words: Internal derangement of knee; MRI; Arthroscopy.