

Original Paper

Diagnostic accuracy of ultrasonography in comparison with magnetic resonance imaging in patients with knee trauma

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Abstract

Background and Objective: Internal derangement of knee (IDK) is a common problem following knee trauma. Magnetic resonance imaging (MRI) extensively is used to diagnose the ligamentous and meniscal injuries, but the use of ultrasonography remains controversial. Previous studies showed different results about the usefulness of sonography (IDK). This study was done to determine diagnostic accuracy of ultrasonography in comparison with magnetic resonance imaging in patients with knee trauma.

Materials and Methods: This descriptive study was done on internal knee disorders of 73 patients with knee trauma who referred to MRI center of Imam Khomeini hospital in Sari, Iran during 2009-10. Three radiologists independently reported the ultrasonography and MRI of the patients.

Results: The study population comprised of 61 (83.6%) men and 12 (16.4%) women, 91.9% of patients were less than 40 years old. The joint pain was the most common complaint (89%). The sensitivity, specificity, positive and negative predictive value of ultrasonography for the lateral meniscus was 100%, 97.14%, 60%, 100%, for the medial meniscus were 61.90%, 94.23%, 81.25%, 85.96%, for the anterior cruciate ligament (ACL) was 65%, 100%, 100%, 70.21% and for the medial collateral ligament (MCL) was 100%, 94.28%, 42.86 and 100%.

Conclusion: This study showed that the high specificity of ultrasonography as a noninvasive and inexpensive method to exclude the ACL and meniscal lesion. Ultrasonography can reasonably be applied for screening of internal derangement of knee in the absence of MRI, especially in urgent conditions. In clinical setting of highly suspicious of ACL and meniscal tear, MRI is preferred due to low sensitivity of sonography.

Keywords: Internal derangement of knee, Ultrasonography, Magnetic resonance imaging, Diagnostic accuracy

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