PREDICTION OF MENISCUS TEARS: COMPARING PHYSICAL EXAMINATION, MRI AND ARTHROSCOPY

Thesis
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بسم الله الرحمن الرحيم

وقل اعملوا فسيري اللّه عملكم و رسوله والمؤمنون وستردون الي عالم الغيب والشهادة فينبئكم بما كنتم تعملون

DEDICATION

TO

MY PARENTS,

MY WIFE

AND MY DAUGHTERS

HABEBA AND SALMA

Acknowledgement

First, thank **GOD** who gave me the power to complete this work.

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Abbreviations

MRI: Magnetic Resonance Imaging

MFL: Meniscofemoral Ligament

PCL: Posterior Cruciate Ligament

ACL: Anterior Cruciate Ligament

ROM: Range of Motion

MCL: Medial Collateral Ligament

DJD: Degenerative Joint Disease

MM: Medial Meniscus

L M: Lateral Meniscus

PHMM: Posterior Horn Medial Meniscus

BMI: Body Mass Index

MCS: Menisco-capsular Separation

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Abstract

summary

The aims of our study is to correlate the specific clinical tests (joint line tenderness test , Apley's test ,McMurray's test and Thessaly test) with the MRI and arthroscopic findings .

The patients in this study are carefully selected from a certain age group 20 -35 years and with recent trauma.

Risk factors for poor results include previous meniscectomies , previous knees ligament repair , previous reconstruction , previous arthroscopy , case with fracture , case with chronic debilitating diseases and case with deformity in knee .

All patients are subjected to physical examination, MRI then arthroscopy as a gold standard.

The results are collected and tabulated on SPSS spreadsheet and studied for correlation. The sensitivity, specificity and diagnostic accuracy of clinical tests and MRI were be evaluated.

The results are compared and reviewed with results of other literatures.

Conclusions:

Joint line tenderness, McMurray's, Apley's and Thessaly test are independent clinical diagnostic factors for the diagnosis of meniscal tears.

MRI has higher accuracy, sensitivity and NPV for the diagnosis of meniscal tears than Joint line tenderness, McMurray’s test, Apley's and Thessaly test.

The combination of Joint line tenderness, McMurray’s test, Apley's and Thessaly test and MRI for confirmation is typical for a meniscal lesion diagnosis.

Recommendations:

Based on these findings, MRI should be used as a standard diagnostic tool to predict meniscal tears before arthroscopy and should be used as the primary diagnostic tool for selection of candidates for arthroscopy.

Keywords :

locking; McMurray’s test; magnetic resonance imaging (MRI); meniscus tear;arthroscopy.

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Introduction

Meniscal tears are the most common injury of the knee, with a reported annual incidence of meniscal injury resulting in meniscectomy of 61 per 100,000 populations [1]. It is important to make an accurate preliminary diagnosis of meniscus tears so that the appropriate treatment can be given. A detailed history and physical examination can help differentiate patients who have a meniscus tear from those whose knee pain arises from other conditions [2]. MRI is the best commonly used diagnostic imaging technique on patients with meniscus tears of the knee because of its accuracy to diagnose mensical tears [3]. MRI is commonly used because various intra-articular lesions historically have had common symptoms , patient history alone is inadequate as a diagnostic tool , and the diagnostic accuracy of clinical tests for mensical tears has often been questioned . A review of the available literature reveals conflicting results as to their usefulness [4]. If the patient had no clinical symptoms, even though MRI showed meniscal tears of patient, knee arthroscopy was unnecessary. In a high percentage of cases, reling on MRI alone without using clinical judgment may have led to inappropriate treatment. In any case, MRI did not prevent "unnecessary sugery" [5].

The aims of this study is to correlate the specific clinical test (joint line tenderness test, McMurray's test, Apley's test and Thessaly test) with MRI and arthroscopic finding.