Role of MRI in the Evaluation of Anterior Knee Pain

Thesis

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﴿وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللهِ عَلَيْكَ عَظِيمًا﴾

صدق الله العظيم

سورة النساء آية (١١٣)

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List of Abbreviations

Abb.	Full term
ACL	Anterior cruciate ligament
AKP	Anterior knee pain
CP	Chondromalacia patella
FFE	Fast field echo
FOV	Field of view
FSE	Fast spin echo
IPB	Infrapatellar bursitis
ITB	Iliotibial band
LCL	Lateral collateral ligament
LTI	Lateral trochlear inclination
MCL	Medial collateral ligament
MPS	Mediopatellar plica syndrome
MRI	Magnetic resonance imaging
OSD	Osgood Schlatter disease
PA	Patella alta
PCL	Posterior cruciate ligament
PD	Proton density
PFPS	Patella femoral pain syndrome
PPB	Prepatellar bursitis
PT	Patellar tendinitis
QT	Quadriceps tendon
SE	Spin echo
SI	Signal intensity
SLJ	Sending–Larson–Johansen syndrome
STIR	Short time inversion recovery
TE	Time of echo
TR	Time of repetition

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Abstract

This study included 20 patients (no sex predilection). All presented by anterior knee pain and were referred to radio-diagnosis department of Ain Shams University hospital or private centers for MRI examination. The preliminary results have shown the great role of MRI in the diagnosis of different pathological conditions causing anterior knee pain and in guiding further clinical management.

Key Words: *MRI- Anterior knee pain*)

1- Introduction & Aim of the work

Anterior knee pain (AKP) is the most common knee complaint, usually occurring in adolescents and young adults ***(Collado and Fredericson, 2010).***

It is more common in athletic individuals, with the incidence rate as high as 9% in young active adults and comprises up to a quarter of all knee problems treated at sports injury clinics ***(Witvrouw et al., 2000*).** AKP may cause chronic disability, limited sports participation, and may affect quality of life. Despite its prevalence, AKP remains poorly understood, as it has not been well studied in the literature, making its treatment one of the most complex among the various pathologies affecting the knee ***(Biedert and Sanchis-Alfonso, 2002).***

Magnetic resonance imaging (MRI) in the recent decades has become the gold standard imaging modality for different knee pathologies as it is safe, and RF pulses used in MRI do not cause ionization.

With MRI, we can obtain direct coronal and oblique image which is impossible with radiography and CT. Particularly useful for the scanning and detection of abnormalities in soft tissue structures like the cartilage tissues, tendons, and ligaments. MRI also can help determine which patients with knee injuries require surgery. MR imaging is

recognized as a standard procedure and has replaced diagnostic arthroscopy as the primary diagnostic modality for many knee pathologies. Moreover, MR images can be used to assess anatomic variants that may contribute to chronic patellar instability ***(Escala et al., 2006).***

Aim of the Work

The main objective of our work is to review several of the most common causes of AKP, with emphasis on their MRI findings with the goal of allowing more accurate diagnosis and grading of some of the most common pathologies, for understanding, better treatment and improvement of this common complaint.