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ROLE OF MRI IN EVALUATION OF ANTERIOR KNEE PAIN

Thesis

Submitted for partial fulfillment of Master Degree in Radiodiagnosis

By

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Abstract

This study included 70 patients (46 female and 24 male). Their ages ranged between 10-60 years (average age 30 years). All presented by anterior knee pain and were referred to radio-diagnosis department of Cairo 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)

Contents

Abstract	2
List of Abbreviations	6
List of tables	7
List of Figures	9
1- Introduction & Aim of the work	13
2- Technique and Normal Anatomy of Knee MRI	15
2.1 Technique	15
2.1.1 Positioning and Coil Selection	15
2.1.2 Pulse Sequences/Image Planes	15
2.1.3 Conventional Protocol	19
2.2 Normal MRI Anatomy	20
2.2.1 Sagittal plane	20
2.2.2 Coronal Plane	22
2.2.3 Axial Plane	24
3- Different Etiologies of Anterior Knee Pain and Their MRI Manifestations	26
3.1 Different Etiologies of Anterior Knee Pain	26
3.2 MRI manifestations of anterior knee pain pathologies	27
3.2.1 Articular cartilage injury	27
3.2.2 Chondromalacia Patella (CP)	32
3.2.3 Infrapatellar and suprapatellar fat pad (Hoffa's disease)	36

Contents

3.2.4 Osgood-Schlatter disease (OSD)	37
3.2.5 Patellar instability/subluxation	39
3.2.6 Patellar Tendinopathy	47
3.2.7 Pes anserine Bursitis	48
3.2.8 Prepatellar bursitis (PPB) or housemaid's knee and Infrapatellar bursitis (IPB)	50
3.2.9 Plica synovialis	52
3.2.10 Quadriceps Tendinopathy	54
3.2.11 Sinding–Larsen–Johansson syndrome (SLJ)	57
3.2.12 Bipartite patella	58
4- Patient and Methods	60
5- Results	67
6- Case Presentation	75
Case 1.....	75
Case 2.....	76
Case 3.....	77
Case 4.....	78
Case 5.....	79
Case 6.....	80
Case 7.....	81
Case 8.....	83
Case 9.....	85
Case10.....	86
Case 11.....	87
Case 12.....	88

Contents

Case 13.....	89
Case 14.....	90
Case 15.....	92
Case 16.....	93
7-Discussion	94
Summary & Conclusion	106
References	108

List of Abbreviations

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
LTl	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	Sinding–Larsen–Johansson syndrome
STIR	Short time inversion recovery
TE	Time of echo
TR	Time of repetition

List of Tables

Table 1: Common Causes of Anterior Knee Pain.....	26
Table 2: Grading of Chondromalacia patella.....	33
Table 3: MRI sequences parameters on high field strength scanners.....	62
Table 4: MRI grading of chondromalacia patella.....	62
Table5: Classification of trochlear dysplasia.....	64
Table6: The descriptive statistics of the age of the patients sample.....	67
Table7: Distribution of the sample according to sex.....	67
Table8: Percentages of the prevalence of different causes of anterior knee pain by sex.....	68
Table9: Demonstrates the prevalence of 11 diseases entity found among the patients in the study sample. This table shows the largest percentage of the patients suffer from chondromalacia patella.....	69
Table10: Demonstrates overlapping between patients who have more than one disease.....	70
Table11: Demonstrates percentage of sex prevalence among different diseases.....	71
Table12: Demonstrates percentage of prevalence of different grades of chondromalacia patella.....	72

List of Tables

Table13: Demonstrates percentage of different grades of trochlear dysplasia among the patients with patellar instability.....	73
Table14: Demonstrates percentage of patellar instability and transient patellar dislocation 72% and 27%respectively out of total number of patellar dislocation (18 patients).....	73
Table15: Demonstrates the statistically calculated minimum, maximum, median and mean values of trochlear groove depth by (mm), trochlear facet asymmetry by (%)and lateral inclination angle by(°).....	74

List of Figures

Figure1: Normal MRI appearance of Medial and Lateral Menisci	20
Figure2: Normal MRI appearance of the Cruciate Ligaments	21
Figure3: Normal MRI appearance of Patellar and Quadriceps tendons	22
Figure4: Normal MRI appearance of Lateral collateral ligament	23
Figure5: Normal MRI appearance of Medial collateral ligament	23
Figure6: Normal MRI appearance of patellar, cruciate ligaments and periarticular tendons	25
Figure7: MRI appearance of articular cartilage delamination	28
Figure8: MRI appearance of unexpected chondral shear injury associated with lateral meniscal tear	29
Figure9 : MRI appearance of osteochondral injury	30
Figure10: MRI appearance of characteristic transchondral fracture	31
Figure11: MRI image of large unstable osteochondritis dissecans	32
Figure12 : MRI appearance of Chondromalacia patella grade I	34
Figure13: MRI appearance of Chondromalacia patella grade II.	34

List of Figures

Figure14: MRI appearance of Chondromalacia patella grade III	35
Figure15: MRI appearance of Chondromalacia patella grade IV	35
Figure16: MRI appearance of Hoffa impingement syndrome	36
Figure17: MRI appearance of Osgood–Schlatter disease	38
Figure18: MRI appearance of Non-resolved Osgood–Schlatter lesion	38
Figure19: MRI appearance of Patellar dislocation (relocated)	40
Figure20: MRI appearance of Recurrent patellar dislocation	41
Figure21: MRI appearance of Four types of trochlear dysplasia	42
Figure22: MRI assessment of Lateral trochlear inclination angle	43
Figure23: MRI assessment of Trochlear facet asymmetry	44
Figure24: MRI assessment of Trochlear depth	44
Figure25: MRI appearance of Patellar alta and maltracking	46
Figure26: MRI appearance of patellar tendinosis	47
Figure27: MRI appearance of patellar tendon rupture.	48
Figure28: MRI appearance of Pes anserinus bursitis	49
Figure29: MRI appearance of Pes anserine bursitis	49
Figure30: MRI appearance of Prepatellar bursitis	50
Figure31: MRI appearance of Hemorrhagic prepatellar bursitis	51
Figure32: MRI appearance of Hemorrhagic deep infrapatellar bursitis	52

List of Figures

Figure33: MRI appearance of Mediopatellar plica syndrome	53
Figure34: MRI appearance of Quadriceps tendinosis	54
Figure35: MRI appearance of distal Quadriceps tendon rupture	56
Figure36: MRI appearance of Sinding–Larsen–Johansson disease	58
Figure37: MRI appearance of Bipartite patella	59
Figure38: MRI image demonstrates how to assess patella Alta depending on Insall -Salvati index	63
Figure 39: MRI assessment of Lateral trochlear inclination angle	65
Figure40: MRI assessment of Trochlear facet asymmetry	66
Figure41: MRI assessment of Trochlear depth	66
Figure42: Demonstrates the percentage of different AKP types among males and females.	68
Figure43: Demonstrates the percentages of the prevalence of different causes of AKP	69
Figure44: Demonstrates the percentages of the prevalence of 11 diseases entity found among the patients in the study sample	70
Figure 45: Demonstrates the percentages of prevalence of the 13 diseases by sex	72
Figure 46: Demonstrates the percentage of prevalence of different grades of chondromalacia patella	72

List of Figures

Figure 47: Demonstrates percentages of different grades of trochlear dysplasia among the patients with patellar instability	73
Figure48: Demonstrates the statistically calculated minimum, maximum, median and mean values of trochlear groove depth by (mm), trochlear facet asymmetry by (%)and lateral inclination angle by(°)	74
Figure 49: Case presentation (1).....	75
Figure50: Case presentation (2).....	76
Figure 51: Case presentation (3).....	77
Figure 52: Case presentation (4).....	78
Figure53: Case presentation (5).....	79
Figure 54: Case presentation (6).....	80
Figure55: Case presentation (7).....	82
Figure56: Case presentation (8).....	83
Figure57: Case presentation (9).....	85
Figure58: Case presentation (10).....	86
Figure 59: Case presentation (11).....	87
Figure 60: Case presentation (12).....	88
Figure 61: Case presentation (13).....	89
Figure 62: Case presentation (14).....	91
Figure63: Case presentation (15).....	92
Figure64: Case presentation (16).....	93

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.