Ultrasound versus Magnetic Resonance Imaging in Diagnosis of Traumatic Knee Injuries

Essay

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Abbreviations

3D ..... Three Dimension

ACL..... Anterior Cruciate Ligament

AP..... Anteroposterior

CM ..... Centimeter

CT ..... Computed Tomography

FOV ..... Field Of View

FS ..... Fat Suppressed

FSE..... Fast Spin Echo

Gd-DTPA . Gadolinium-diethylenetriamine pentaacetic acid

ITB ..... Iliotibial Band

LCL ..... Lateral Collateral Ligament

LS ..... Longitudinal Section

MCL..... Medial Collateral Ligament

MHz ..... Mega Hertz

Mm ..... Millimeter

MPFL..... Medial Patellofemoral Ligament

MRI..... Magnetic Resonance Image

MSUS.....Musculoskeletal Ultrasound

PCL.....Posterior Cruciate Ligament

PD.....Proton Density

SE .....Spin Echo

SI .....Signal Intensity

STIR.....Short TI Inversion Recovery

TE .....Echo time

TR .....Repetition time

TS.....Transverse Section

US.....Ultrasound

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INTRODUCTION

The knee is particularly prone to injury in contact sports, running and any activity which involves rapid deceleration and twisting movements – skiers are especially vulnerable. Injuries of the knee are best imaged by MRI, which demonstrates the menisci, ligaments and tendons around the joint in precise detail. Acute injuries which may be shown include meniscal tears and ligament rupture; often, such injuries co-exist. Athletic activity may accelerate degeneration of the articular cartilage, and MRI can assess the presence and extent of this, as well as detecting complications such as meniscal degeneration and loose bodies within the joint which may warrant surgical intervention ***(Unluet al., 2014).***

Magnetic Resonance Imaging (MRI) of the knee is very popular and is requested more frequently than ultrasound of knee. This is probably due to the fact that in MRI we get a global view of all structures of the knee joint, which is not the case with ultrasound ***(Lalithaet al., 2010).***

Ultrasonography has advantages over other imaging modalities in terms of availability and comfort, safety, and diagnostic potential. Operating costs are low compared with magnetic resonance imaging (MRI). The portable equipment is accessible at locations distant from medical centers.