Role of MRI Arthrography In Assessment Of Traumatic Anterior Shoulder Instability

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By Dr

Fath Allah Fathy Fath Allah Awad

M.Sc. Radiodiagnosis

Under Supervision of

Prof Dr. AHMED MOSTAFA MOHAMMED

PROFESSOR OF RADIODIAGNOSIS,
AIN SHAMS UNIVERSITY

Prof Dr. AHMED FATHY ABD EL GHANI

ASS PROFESSOR OF RADIODIAGNOSIS,
AIN SHAMS UNIVERSITY

Dr. AHMED MOHAMMED M.ABD RABOH

LECTURER OF RADIODIAGNOSIS,
AIN SHAMS UNIVERSITY

Dr. HAITHAM KAMEL O. HAROUN

LECTURER OF ORTHOPEDIC SURGERY,
AIN SHMS UNIVERSITY

Faculty of medicine
Ain Shams University
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بسم الله الرحمن الرحيم

(قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم)

صدق الله العظيم

سورة البقرة آية (32)

CONTENTS

Abstract

The study included 60 patients with glenohumeral instability. For every patient conventional MRI , intra-articular contrast injection was done followed by MR arthrography (MRA) .The preliminary results showed the role MRA in diagnosing the causes of anterior shoulder instability. Correlation between conventional MRI & MRA and arthroscopy to clarify the role of MRA in more accurate diagnosis of glenohumeral instability. Combined conventional MRI & MR arthroghraphy is promisable in defining the type of instability

(Key Words: Conventional MRI , MRA-Shoulder instability, Bankart , shoulder dislocation)

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List of Abbreviations

ABER	***Abduction external rotation***
ALPSA	***Anterior Labro-ligamentous Periosteal Sleeve Avulsion***
AP	***Antro-posterior***
BLC	***Biceps labral complex***
Cm	***Centimeters***
CT	***Computed Tomography***
3D	***Three dimensions***
FOV	***Field of view***
FAT SAT	***Fat saturation***
GLAD	***Gleno-Labral Articular Disruption***
GAGL	***Glenoid avulsion of the glenohumeral ligament***
HAGL	***Humeral Avulsion of Glenohumeral Ligaments***
B-HAGL	***Bony -Humeral Avulsion of Glenohumeral Ligaments***
IGL	***Inferior glenohumeral ligament***

List of Abbreviations

IGLC	***Inferior glenohumeral ligament complex***
MRI	***Magnetic Resonance Imaging***
Mm	***Millimeter***
MGHL	***Middle glenohumeral ligament***
MSK	***Musculoskeletal***
Ml	***Milliliter***
NEX	***Number of excitations***
PD	***Proton density***
SGL	***Superior glenohumeral ligament***
TP	***True positive***
TN	***True negative***
TI	***Inversion time***
TR	***Repetition time***
TE	***Echo time***
STIR	***Short time inversion recovery***

List of Figures

List of Figures

List of Figures

List of Figures

List of Figures

List of tables

Introduction

The shoulder joint is a simple structure that provides complex function. It is the most mobile joint in the body, and it is the joint that is most frequently dislocated. Normal shoulder have a certain degree of laxity due to minimal bony restraint of the joint, which in turn allows the widest range of motion of any joint in the body ***(Simon et al .,2005)***

When shoulder dislocation occurs in adolescents and children, it may be a very bad experience for the patient ; although certainly not life threatening, recurrent sublaxation or dislocation is clearly lifestyle threatening and can effectively disable an otherwise active individual. The rate of recurrence in later years is at least 70% . ***(Herold T et al ., 2006)***

Antero-inferior dislocation is the most frequent cause of shoulder instability. The gleno-humeral ligaments, particularly the inferior gleno-humeral ligament are currently believed to represent the major passive stabilizers of the shoulder ***(Asem A. AL-Hiari., 2008) .***

A number of variants of antero-inferior labroligamentous lesions (Bankart and Bankart variant lesions) have been described, The classical Bankart lesion is described as detachment of the anteroinferior labrum with its associated glenohumeral ligament complex. Neviaser described the anterior labral periosteal sleeve avulsion (ALPSA) lesion as a tear of the anteroinferior labrum without rupture of the anterior capsular periosteum ***(Jaideep et al 2010).***

The Perthes lesion is a labroligamentous avulsion, as well, but with medially stripped intact periosteum. The glenolabral articular disruption (GLAD) lesion represents a superficial tear of the anterior labrum attached to a fragment of articular cartilage without associated capsuloperiosteal stripping. Since different types of anterior labroligamentous lesions require different surgical procedures, preoperative determination of lesions is of great importance. ***(Asem A. AL-Hiari., 2008) .***

Humeral avulsion of glenohumeral ligaments (HAGL) is an increasingly recognized cause of recurrent shoulder instability. HAGL lesions are the result of acute traumatic glenohumeral subluxation or dislocation. Anterior avulsion of the inferior