Role of MRI in the evaluation of acromioclavicular joint in patients with shoulder pain

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A	Acromion
AD	Adduction
ABD	Abduction
AC	Acromio-clavicular
ACJ	Acromio-calvicular joint
CA	Coraco acromial
CL	Clavicle
CC	Coraco-clavicular
DEL	Deltoid muscle
EFF	Effusion
EXT	Extension
FIG	Figure
FLEX	Flexion
G	Glenoid Edge
GT	Greater Tuberosity
HH	Humeral Head
Infra S	Infra spinatus muscle
LHB	Long head of biceps
LS	Longitudinal section
LS	Lesser tuberosity
RA	Rheumatoid arthritis
RCT	Rotator cuff tendon

Rt	Right
SIS	Subacromial Impingement Syndroma
SLE	Systemic Lupus Erythrematosus
SS	Supra spinatus
SubS	Subscapularis muscle
SYN T	Synovial Thickening
SCJ	Sterno-clavicular joint
Tm	Teres minor muscle
AHD	Acromio-humeral distance
AI	Acromial Index
LAA	Lateral Acromial Angle

Introduction

Shoulder pain is a common problem that poses difficult diagnostic and therapeutic challenges .It is one of the most common musculoskeletal complaint in the general population, accounting for 5% of all MSK consultations. It is considered second to knee pain for referrals to the Orthopaedics **(Chaudhari and Chitnis,2018).**

Disorders of rotator cuff muscles, disorders of gleno-humeral joint , acromio-clavicular joint pathologies and referred neck pain are considered the most common causes of shoulder pain **(Mitchell et al.,2005) .**

Acromio-clavicular pathology and dysfunction is a common component of shoulder Pain **(Simovitch et al.,2009).**

Osteoarthritis of the acromio-clavicular joint is a very common cause of shoulder pain and may result in significant debilitation ,acromio-clavicular joint osteoarthritis is the most common disorder of the acromio-clavicular joint and may results from a number of pathological processes **(Menge et al .,2014).**

Clinical evaluation ,conventional radiography , computed tomorgraphy and ultrasound are usually used to assess the acromio-clavicular joint **(Simovitch et al.,2009).**

Treatment planning of acromio-clavicular joint injuries and pathologies requires accurate classification of joint lesions and accurate degree of arthritis which may be difficult clinically **(Ursula et al.,2011).**

The diagnostic limitations of radiography and clinical evaluation prompted implementation of MRI for visualization of the acromio-clavicular joint **(Alyas et al.,2008).**

Unlike radiography, which depends on joint distance measurements and CT that evaluate only the bony structures of the shoulder joint , MRI allows direct evaluation of the joint-supporting structures and the surrounding soft tissues, rather than of the acromio-clavicular joint itself, which is useful in classification of acromio-clavicular joint injuries and accurate assessment of the degree of arthritis and its effect over the nearby soft tissues (**Schaefer et al.,2006).**

The aim of this study is to describe the role of MRI in evaluation of acromio-clavicular joint in patients with shoulder pain.

Aim of work

To focus on the role of the MRI in the evaluation and assessment of acromio-clavicular joint in patient presented to our unit complaining of shoulder pain.

ANATOMY OF THE SHOULDER JOINT

NORMAL GROSS SHOULDER JOINT ANATOMY

The shoulder girdle is composed by three bones (the proximal humerus, the scapula, and the clavicle) that articulate three joints: the gleno-humeral, acromio-clavicular and sterno-clavicular joints. This complex allows for a great range of movements, the majority of them provided by the gleno-humeral joint **(Mengeet al., 2014) .**

The clavicle interfaces the axial and appendicular skeletons of the upper limb; its sternal end is extended and fits into the notch on the manubrium at the sterno-clavicular joint. The lateral third is flat, and its sternal end is extended as it bends back to meet the scapula at the acromioclavicular joint**(Goldstein., 2004) .**

The scapula comprimses of the scapular body, the scapular spine, the scapular neck, the acromion, the glenoid fossa, and the coracoid process. It has costal and posterior surfaces with its costal surface in contact with the thoracic cage (the scapula-thoracic interface). From the upper piece of the posterior surface, the spine of the scapula extends laterally, ending into the acromion, which shapes the lateral most tip of the shoulder **(Goldstein., 2004) .**

The scapular lateral angle is thick , with an extended large, shallow glenoid fossa, confronting forward and upwards to get the head of the humerus. Medial to the glenoid fossa , the coracoid process is found , the coracoid process directs upwards from the neck of the scapula and serves as an attachment site for multiple important ligaments and muscles**(Goldstein., 2004) .**

The proximal part of the humerus comprises of the head, neck, and the greater and lesser tuberosities. The inter-tubercular groove is situated between the greater and lesser tuberosities along the anterior surface of the humerus **(Stoller., 1997) .**

The head of the humerus is roughly forming one third of a sphere and it is around four times bigger than the socket on the scapula. In anatomic position, it faces superiorly, medially, and posteriorly with the lesser tuberosity in front and the greater tuberosity projecting laterally **(Goldstein., 2004) .**