INTRODUCTION AND AIM OF THE WORK

Introduction

Shoulder is a remarkable structure enjoying greater range of motion than any other articulation in the human body. Unfortunately it is inherently unstable and the most commonly dislocated joint in the body **(Kieft *et al.*, 1988).**

Shoulder instability can be defined as the ability to passively translate the humeral head on the glenoid fossa, giving rise to pain and diminished shoulder function **(Gusmer *et al.*, 1996).**

Shoulder joint stability is afforded by the articular and periarticular soft tissue elements referred to as capsular mechanism of the joint **(Teute and Orwin, 1996).**

Glenohumeral instability predominantly afflicts young individuals after initial episode of dislocation or repeated episodes of less severe injury. Developmental predisposition such as capsular laxity and glenoid hypoplasia may co-exist and increase the susceptibility for dislocation and ensuing instability **(Neuman *et al.*, 1991).**

Instabilities can be divided into *traumatic* and this constitutes 95% of all glenohumeral instabilities and it is usually unidirectional, *i.e.* anteriorly or posteriorly, *non traumatic*, it is

multidirectional and may be bilateral **(Green and Christenson, 1994)**.

Prior to the MRI era, plain x-ray, arthrography, plain CT or CT arthrography has been previously used and was of help. With the advent of MR and its remarkable soft tissue characterization using its various pulse sequences and multi-planar capabilities, more accurate and precise diagnosis of shoulder instability of patients is aimed at **(Fronek *et al.*, 1989)**.

Owing to the complexity of the shoulder anatomy and capsular mechanism, they are more common for potential pitfalls and normal variants that may simulate pathology and thus familiarity with this anatomy is essential for increasing the diagnostic accuracy **(Green and Christenson, 1994)**.

From here we can deduce that the role of MRI as an imaging modality in the diagnosis of shoulder instability is progressing, for its well known high sensitive capability and accurate specificity of both soft tissue as well as bone imaging, with its ability to provide various standard and newly developing pulse sequences and multi-planar techniques **(Teute and Orwin, 1996)**.

Aim of the Work

Sixty patients with glenohumeral instability will be examined by MRI, aiming to clearly identify and demonstrate the role of MRI using its various techniques and pulse sequences in the

diagnosis of shoulder instability cases and correlation of its diagnostic accuracy with arthroscopic findings whenever possible.