

Annotated Orthopedic Evidence: GH Instability

Farber AJ, Castillo R, Clough M, Bahk M, McFarland EG. Clinical Assessment of Three Common Tests for Traumatic Anterior Shoulder Instability. *The Journal of Bone and Joint Surgery*. 2006;88:1467-1474.

Shoulder dislocation account for about 45% of all dislocations in the body. Of those dislocations, clinicians have found that most occur in the anterior direction. Although anterior glenohumeral dislocations are common, the tools used to diagnose them have yet to be studied in great detail. This article focuses on the diagnostic accuracy of three common tests for the assessment of anterior shoulder instability. The apprehension test and the relocation test are used most often in diagnosing anterior instability and the anterior drawer test is used to measure anterior shoulder laxity. The purpose of this study is to evaluate the sensitivity, specificity, and likelihood ratio of the each test and then assess the usefulness of each test in diagnosing anterior glenohumeral instability.

The study group was made up of 46 patients that had been diagnosed with traumatic unidirectional anterior instability of the shoulder after undergoing diagnostic arthroscopy. Injuries to the shoulder that were considered traumatic unidirectional anterior instability included: Bankart lesions, Hill-Sachs lesions, humeral avulsion of the glenohumeral ligament, tears of the capsule, and anteroinferior glenoid erosions. There was also a comparison group of 317 patients who underwent procedures for shoulder conditions other than those of the study group. The apprehension test as described by Rowe and Zarins, the relocation test as described by Jobe et al., and the anterior drawer test as described by Gerber and Ganz were carried out in this study in both groups.

The sensitivity, specificity, and likelihood ratios for the apprehension test were 72%, 96%, and 20.2. The scores for the relocation test were 81%, 92%, and 10.4, respectively. For the anterior draw, test using instability symptoms as criterion for a positive test, the scores were 53%, 85%, and 3.6. The results of this study suggest that using pain as a criterion for a positive apprehension and relocation test is not a reliable way to determine anterior glenohumeral instability because there could be many other underlying problems. Another result of this study is that in the presents of apprehension or reproduction of a sense of instability in the apprehension or relocation tests, the patient's chance of having anterior shoulder instability increases. These tests are not very sensitive, but they all consist of high percents of specificity.

Level of evidence was determined with the *AAOS Levels of Evidence for Primary Research Question*. This study is testing previously developed diagnostic criteria on consecutive patients with universally applied reference "gold" standard. Levels of evidence are as follows:

- AAOS: Level 1

This article would be of interest to many health care professionals. In the profession of athletic training, athletic trainers constantly rely on diagnostic tests to evaluate injured athletes on and off the field. All three of these tests can help the practicing athletic trainer to diagnose the presents of anterior shoulder instability. In general, this article presents a valid, important and applicable diagnostic test results for anterior shoulder instability.