

DIAGNOSTIC ACCURACY OF FIVE ORTHOPAEDIC CLINICAL TESTS FOR DIAGNOSIS OF SUPERIOR LABRUM ANTERIOR POSTERIOR (SLAP) LESIONS.

Cook et al. (2012). Diagnostic accuracy of five orthopedic clinical tests for diagnosis of superior labrum anterior posterior (SLAP) lesions. *J Shoulder Elbow Surg* 21, 13-22

Introduction

A SLAP lesion or superior labral anterior posterior lesion is an acquired pathological detachment of the superior labrum anterior and posterior to the biceps anchor which can lead to instability, shoulder pain and functional decline. SLAP lesions are considered a soft tissue lesion, one that increases with age, overhead activity and trauma. A clinical diagnosis of a SLAP lesion is difficult for various reasons including lack of unique clinical findings and its association with other shoulder injuries such as impingement, rotator cuff tears, soft tissue related injuries and degenerative joint disease.

Aims & Objectives

The purpose of this study was to evaluate frequently used clinical tests to determine their diagnostic accuracy for the presence of an isolated SLAP lesion and a SLAP lesion with concomitant findings as well as to determine each test's value towards surgical decision making.

Methodology

This study was a prospective case-based case-control design that included 87 individuals with a surgical confirmation of a SLAP lesion post assessment.

The clinical tests used included the Active Compression/O'Brien's test, Biceps Load 2 test, Dynamic Labral Shear test (O'Driscoll's test), Speeds test and the Labral Tension test.

Results

The Biceps Load test was the only test demonstrating utility in identifying those with a SLAP only lesion with a positive predictive value of 26 (95% confidence limits), negative predictive value of 93 (95%CL), positive likelihood ratio of 1.7 and negative likelihood ratio of 0.39. No test had diagnostic utility for identifying the type of SLAP lesion. No clusters of tests were better diagnostically than any stand alone test.

Table II (individual tests to measure SLAP-only) showed high PPV and NPV for Kim Test II and Labral tension test. But CAUTION because these results are significantly altered by disease prevalence. Also the sensitivity and specificity of these tests were low, thus we cannot confidently rule in a positive result nor rule out a negative result. Finally the LR + and LR - were all ~1 thus the tests were not clinically useful to determine the probability that the condition is present/ absent.

Table III (individual test to measure SLAP + concomitant) High sensitivity for active compression test and dynamic labral (i.e. can rely on the negative test result), but all had low specificity (can't be sure that a positive result is true). Also LR not clinically useful.

Table IV (cluster tests for SLAP-only) No clinically significant results.

Table V (cluster for SLAP + concomitant) When 1 in 5 tests were positive (i.e. 4 negative) high sensitivity, ie for a negative test you can reliably rule out the condition. However the specificity was very low thus we could not rely on the positive result, poor diagnostic utility. PPV and NPV high, but caution as these are altered by prevalence of condition. Again LR showed that the tests were not clinically useful.

In the article's abstract it presents the Biceps Load test/ Kim II test as the only test of the 5 that "demonstrated utility in identifying patients with SLAP-only lesion". However the sensitivity and specificity of this test are poor, the PPV is low, the NPV is high (caution re. prevalence) and the LR shows that the test is not clinically useful to determine the probability of the condition being present/ absent.

The power of the study was not calculated so a population of 87 may not have been sufficiently large enough to get an accurate result.

The sensitivity of the results could have been biased due to the chronic, complex shoulder disorders in the group tested. The tests could have produced a false positive due to irritation of other anatomical disorders.

Considerations

The results of this study could have been affected by the selection of patients as many had a chronic history of shoulder pain and other concomitant findings on arthroscope. These subjects had all been deemed suitable for surgery and therefore would have had a greater disability. The study was further limited by the lack of blinding of the surgeons performing the arthroscopic examination to the results of the clinical tests.

Conclusion

The authors conclude that each of these tests when used alone or in clusters have minimal value in diagnosing a SLAP lesion.