

## New Labral Tear and AC Joint Pathology Test with Impressive Sensitivity/Specificity

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The terms sensitivity and specificity are very important when evaluating the validity of diagnostic tests. Under ideal circumstances, all diagnostic tests should be highly sensitive and specific.

Sensitivity is synonymous for the true positive rate.<sup>1</sup> True positives are patients with the disease and a positive test result. For example, an MRI might show a herniated disc associated with an absent Achilles reflex. Specificity refers to the true negative rate. True negatives are patients without disease and a negative test result, e.g., a negative MRI and normal reflexes. Sometimes the sensitivity of a test can increase at the expense of specificity.<sup>1</sup> For example, a straight leg raise (SLR) test can be made more specific if it is only considered positive under 50°. This test might lose sensitivity because some patients might have a disc herniation with the SLR above 50°.

O'Brien et al.,<sup>2</sup> developed a new diagnostic test for labral tears and AC joint pathology. The patient is instructed to raise their extended arm and elbow 90°, then adduct the extended extremity 10° to 15° medial to the sagittal plane of the body, and then internally rotate, causing the thumb to point downward. The patient pushes upward against the resistance of the examiner who applies a downward force without attempting to overcome the patient's resistance. With the arm in the same position, the palm is then fully supinated and the maneuver is repeated. "The test is considered positive if pain is elicited during the first maneuver, and is reduced or eliminated with the second maneuver."<sup>2</sup> If pain is localized to the AC joint, it is diagnostic of AC joint pathology, and if pain or painful clicking "inside" the shoulder is present, it is considered due to labral pathology.

In a prospective study on 318 patients<sup>2</sup> to determine the sensitivity and specificity of the test, 53 of 66 patients with a positive preoperative exam thought to have a labral tear had confirmed labral tears found at surgery. Fifty-five of sixty-two patients with a positive test with pain localized at the AC joint had a positive clinical, operative or radiographic evidence of AC injury. There were no false negatives in either group, i.e. patients with disease, but with a negative test result.

Of course, additional findings for AC joint problems such as pain on horizontal adduction and instability testing, or the clunk or grind test for labral pathology should also be included along with a proper case history and differential diagnosis.

### References

1. Andersson GBJ, Deyo RA. History and physical examination in patients with herniated lumbar discs. *Spine* 21, (24S), 1996:10S-18S.
2. O'Brien SJ, Pagnani MJ, McGlynn S et al. *Journal of Shoulder & Elbow Surgery* 6, (2), Abstracts, 1997:175.

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