Special physical examination tests for superior labrum anterior posterior shoulder tears are clinically limited and invalid: a diagnostic systematic review

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CRD summary
The review assessed validity and reliability of physical tests used to diagnose superior labral anterior-posterior shoulder tears and concluded that the literature lacked validity and there were no good physical examination tests for diagnosing these lesions effectively. Despite limitations in the review process, this conclusion was a reasonable interpretation of the data and is likely to be reliable.

Authors' objectives
To assess the validity and reliability of physical examination tests for superior labral anterior-posterior shoulder tears as diagnostic procedures.

Searching
MEDLINE, EMBASE and unspecified Cochrane databases were searched from January 1970 to June 2004 for English-language studies; search terms were reported and included terms to identify test accuracy studies. Bibliographies of included studies and recent reviews were screened for additional articles.

Study selection
Studies that focused on physical examination of superior labral anterior-posterior lesions and presented original data were eligible for inclusion. Studies that reported descriptions of the examination only, with no aim to report clinical accuracy data, were excluded.

Included studies were prospective and retrospective case series and cohort and case-control studies. Tests studied included: anterior slide test; slapprehension; biceps load tests; Crank test; O'Brien test; active compression; compression rotation; Speed's test; Yergason's test; Jobe; bicipital groove pain; bicipital groove tenderness; and pain provocation.

The authors stated that abstracts of identified articles were screened manually for inclusion, but did not state how many reviewers performed the study selection.

Assessment of study quality
Validity of included studies was assessed using five criteria specified by Sacket et al., which assessed independent blind comparison of the test with a reference standard, use of an appropriate patient spectrum, presence of verification bias, adequacy of description of test procedures and presentation of data on diagnostic performance.

The authors did not state how many reviewers assessed study quality.

Data extraction
Where sufficient data were available, sensitivity, specificity and positive and negative predictive values or positive and negative likelihood ratios were extracted for each included study. Data were extracted using a study questionnaire.

The authors did not state how many reviewers performed the data extraction. [A: Data were independently reviewed by three individuals and collated.]

Methods of synthesis
Studies were summarised in a narrative synthesis and tables.

Results of the review
Fifteen studies (n=32 to 268, where reported) were included in the review. These studies assessed a wide variety of superior labral anterior-posterior shoulder tear tests. Only one study met all five validity criteria.

Nine studies reported specificities and sensitivities greater than 75%, four studies reported sensitivities less than 75% and three reported specificities less than 75%. One study did not report sensitivity and two did not report specificity. Reported sensitivities (36 data sets) ranged from 4 to 100%. Reported specificities (34 data sets) ranged from 11 to 100%.

The one study that met all five validity criteria compared Speed and Yergason's tests individually with the surgical reference standard and found that in both cases confidence intervals for positive and negative likelihood ratios crossed 1, which indicated that the results of these tests did not significantly change the probability of a patient having or not having a superior labral anterior-posterior tear.

**Authors' conclusions**
At the time of the review, literature on performance of physical tests for diagnosing superior labral anterior-posterior shoulder lesions lacked validity. There were no good physical examination tests for diagnosing a superior labral anterior-posterior lesion effectively.

**CRD commentary**
The review had the stated objective of assessing validity and reliability of physical tests used to diagnose superior labral anterior-posterior lesions. Inclusion criteria were broad, possibly due to the limited numbers of studies in this area. Restriction of the searches to English-language studies and use of terms for diagnostic accuracy studies may have resulted in failure to identify some relevant studies. The review process was poorly reported, which made it difficult to assess potential for error and bias. The decision to use a narrative synthesis was appropriate given the apparent heterogeneity of included studies, particularly in relation to the large number of different tests evaluated. Despite limitations in the review process, the authors' conclusion that current data were not sufficient to support validity of physical tests for diagnosing superior labral anterior-posterior lesions was a reasonable interpretation of the data and is likely to be reliable.

**Implications of the review for practice and research**
**Practice**: The authors stated that there were no good physical examination tests for diagnosing a superior labral anterior-posterior lesion effectively and recommended that educational programs apply evidence-based medicine to their curriculum to avoid these weaknesses in the literature.

**Research**: The authors stated that more rigorous studies were needed in this area to further aid diagnosis of superior labral anterior-posterior lesion.

**Funding**
Not stated. [A: No funding was obtained for this paper.]

**Bibliographic details**

**PubMedID**
19230608

**DOI**
10.1016/j.jclinepi.2008.04.010

**Original Paper URL**
http://www.jclinepi.com/article/S0895-4356(08)00350-8/abstract
Indexing Status
Subject indexing assigned by NLM

MeSH
Humans; Physical Examination/methods/standards; Predictive Value of Tests; Reproducibility of Results; Shoulder/injuries; Shoulder Joint/injuries; Wounds and Injuries/diagnosis

AccessionNumber
12009104669

Date bibliographic record published
16/09/2009

Date abstract record published
31/03/2010

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.