

Evidence in Action

My Patient Has Hip Pain—Are My Assessment Procedures Effective?

By Robert Vining, DC, and Nancy Kime, DC

A 55-year old man enters your practice with a complaint of hip, thigh, and low-back pain.

The Condition History

Your patient, a 55-year-old male, planted flowers and worked in his yard last weekend. He awoke with right hip, thigh, and low back pain. During the past few years, his hip has caused occasional discomfort, but he has not sought treatment until now. Occasionally, he takes Motrin® and experiences relief. Your patient is otherwise healthy and is not being treated for other conditions.

Weight-bearing increases his hip pain, causing him to limp slightly. Walking provides relief for his low back, but aggravates his hip. There is no posterior thigh or leg pain. However, his hip pain seems to travel to the anterior thigh.

The Physical Examination

Your patient's weight is appropriate for his height and he is oriented to time and place. He ambulates unassisted and appears to be in mild discomfort. Considering the dual complaints of low-back and hip pain, you will probably perform both a lumbar and hip examination. Nevertheless, the

symptoms appear to implicate the hip joint as a primary pain generator. During your examination, you will probably use some common tests to screen/evaluate the hip. A recently published article from the American Academy of Physical Medicine and Rehabilitation entitled "The Diagnostic validity of hip provocation maneuvers to detect intra-articular hip pathology" by Maslowski et al.¹ can assist you in interpreting your examination findings.

Can I use this study to help my patient?

Because your patient has hip pain and because the tests in this study are used to assess patients with pain suspected to arise from the femoroacetabular joint, this article should assist you in evaluating this case. The abstract states that the FABER and IROP tests (described below) were the most sensitive of the 4 tests evaluated. It also states that these 2 tests "may be worthwhile components of the clinical evaluation of hip pain to determine intra-articular hip pathology."¹ However, before you accept these statements at face value, it will benefit you to read further. Making the leap from abstract to implementation can be

precarious.

Review of the Maslowski et al. article

Methods: The Maslowski study was performed at a multi-specialty musculoskeletal clinic at a university medical center and involved 50 patients (30 female and 20 male with a mean age of 60). Each patient was previously referred for anesthetic injection for suspected intra-articular hip pathology (IAHP). Four orthopedic maneuvers were performed to assess the patients' hips. Those maneuvers were flexion abduction external rotation (FABER or Patrick's test), internal rotation over pressure (IROP), Scour (or quadrant test), and the Stinchfield test (descriptions below). After these tests were performed, the findings were recorded and patients underwent a combination diagnostic and therapeutic injection. Following injection, patients reported their pain relief. If pain relief was 80 percent or greater, an intra-articular pain source was assumed.

Neither researchers nor patients were blinded to any aspect of this study. All physicians utilizing the diagnostic maneuvers were reportedly

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employing them in the same manner. However, no standardization process was reported.

Results: Investigators reported sensitivity values (how good a test is at detecting IAHP) at 0.88-0.91 for IROP and 0.81-0.82 for FABER. Sensitivity for the Stinchfield and Scour tests was poor. Specificity values (how good a test is at ruling out IAHP) for all tests were low. Positive and negative predictive values (how well tests predict response to intra-articular injection) were also low for all tests.

Sensitivity values of 0.8 or more are considered good for these types of tests. A value in the 0.8 – 0.9 range means the test is good to excellent at indicating the presence of a condition when positive. The results in this study indicate that the FABER and IROP tests were fairly good at detecting IAHP, but the Scour and Stinchfield tests were not.

Confidence intervals (CI's) for the two most sensitive tests were 0.57-0.96 (FABER) and 0.67-0.99 (IROP). One can think of a CI as predicting the value if the study were performed again, or as an indicator of the variability of the data in this study. These indicate that FABER and IROP demonstrated mild to high sensitivity in this study.

Conclusion: Based on these results, the authors concluded

that the IROP and FABER tests were sensitive enough to recommend for use when evaluating patients with potential IAHP but not for predicting response to intra-articular injection. The Scour and Stinchfield tests were not recommended as useful for IAHP evaluation because their sensitivity and specificity values were low. When found to be negative, none of the four tests were effective at ruling out an intra-articular pain generator.

Limitations: All patients in this study presented a clinical picture consistent with an intra-articular pain source. Because this patient population was pre-selected in this manner, one should not assume the sensitivity of the studied tests is equal in a general or first-exposure hip pain population.

Low-back pain leading to pain in the hip region was not specifically evaluated in this study. Therefore, patients with spine-related conditions were not excluded from participation. Including these patients could confound results.

Key clinical information including symptom duration, history of injury, and the presence of mechanical symptoms was not collected, nor was information regarding the location of pain before and after injection, which could have further defined the source of pain and the utility of injections. Finally, the injection

volume (10 ml) was large enough to potentially overflow the joint space, which can reduce pain in extra-articular tissue, leading to potential false negative and false positive results.

Are the study findings applicable to this patient?

How you view the appropriateness of these tests for use in your evaluation depends on several clinical details not included in the simulated scenario above. Knowing that the FABER and IROP tests are somewhat sensitive, they will lend evidence toward the diagnosis of an intra-articular pain source if positive during your exam. The evidence will be stronger when your patient's history and presentation closely match the population studied in Maslowski, et al. However, if these tests are negative, they will not help you rule out intra-articular pain.

You may decide to search for sensitivity and specificity values for other common evaluation maneuvers. Using the PubMed search terms hip, manual, diagnosis and predictive, you can find an article by Youdas et. al. that examines the Trendelenburg test as a potential tool for identifying patients with hip osteoarthritis.²

What is your decision?

After incorporating this information with your systematic clinical evaluation,

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you have several decisions to make. You may decide that because these tests have low specificity values, you have been relying too heavily on these tests to rule out hip pain from IAHP. You may decide to base your working diagnosis largely on the positive results from these tests when your patient closely matches the population studied in the Maslowski article. Conversely, you may decide your positive findings represent, at best, minor evidence for an IAHP diagnosis because of other more compelling findings. Because both sensitivity and specificity for the Scour and Stinchfield tests were low, you may decide to eliminate them from your assessment. Perhaps, given the study's limitations, you will wait for further research to clarify questions you have about the accuracy of all of these tests. In the meantime, you will base your working diagnosis more on other factors. By understanding the strengths and weaknesses of these tests, you will develop a greater ability to differentiate findings regardless of the individual clinical scenario, assisting you and your patient with a well-informed

evaluation.

Description of tests and key terms:

FABER: "...the subject was asked to lie supine with the foot of the tested leg on the knee of opposite leg so that the tested extremity is in a hip flexion, abduction, and external rotation position. The examiner then lowered the ipsilateral knee toward the table. Gentle, downward pressure was applied at the contralateral anterior superior iliac spine to stabilize the pelvis..."

Stinchfield: "...performed with the subject supine. The tested leg was raised to 30⁰ of hip flexion with the knee in full extension. The subject held his or her leg in place while the examiner exerted downward force proximal to the knee..."

Scour: "...performed with the subject supine. The affected hip was maximally flexed and adducted. Then, with a compressive force applied to the joint in the direction of the shaft of the femur, the examiner moved the femur through a circular arc of motion..."

IROP: "...performed with the subject supine. The affected hip was flexed to 90⁰ and the knee flexed to 90⁰. The examiner internally rotated the hip by rotating the leg laterally while stabilizing the knee at the same time. Internal rotation overpressure was administered with further gentle rotation of the ipsilateral leg. The pelvis was stabilized, when necessary, by the examiner's other hand at the contralateral anterior superior iliac spine to reduce contralateral ilial rotation..."

Confidence Interval: "the computed interval with a given probability, e.g., 95%, that the true value of a variable... is contained within the interval."³ ■

Robert Vining, DC, is assistant professor and senior research clinician at the Palmer Center for Chiropractic Research, Palmer College of Chiropractic, Davenport, Iowa.

Nancy Kime, DC, is assistant professor and coordinator of clinical academics in the Capstone department at Palmer College of Chiropractic, Davenport Iowa.

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