Clinical diagnostic tests for the sacroiliac joint: motion and palpation tests

Description

Dysfunction of the sacroiliac joint (SIJ) is defined as a state of relative hypomobility within a portion of the joint’s range of motion with subsequent altered structural (positional) relationships between the sacrum and ilium (Dreyfuss et al 1994).

Numerous motion tests for diagnosing SIJ dysfunction have been described in the literature (van der Wurff et al 2000a & b). None is superior to another illustrating that physiotherapists should be suspicious with regard to the clinical relevance claimed by some authors. In general, motion tests of the SIJ can be reduced to 3 main directions: backward motion of the ilium ('spine test'), forward motion of the ilium ('overtake phenomenon', forward flexion test, Gillet test, standing flexion test), and lateral motion of the ilium (lateral-flexion test). As an example we shall focus on the Gillet test, the most extensively described test in this field (Gillet & Liekens 1981).

Requirements for testing, instructions to client and monitoring: The patient stands with the lumbar spine toward the seated examiner, with hands grasping a table on either side to maintain balance. The examiner applies a set of 8 manual contacts (4 on each side), described as:

1. One thumb is placed on the L5 spinous process. The other thumb is placed cranialateral to the posterior superior iliac crest (PSIS).
2. One thumb is placed on the S1 spinous process. The other thumb is placed on the outer rim of the PSIS.
3. One thumb is placed on the S3 spinous process. The other thumb is placed against the inferior margin of the PSIS.
4. One thumb is placed on the hiatus sacralis. The other thumb is placed caudolateral to the hiatus sacralis just beneath the ischial spine.

The thumbs should be level to one other in the same horizontal plane during all manual contacts. First, in all cases the patient slowly raises the homolateral leg with the knee in a flexed position (iliosacral motion). Second, the same procedure is repeated with the same manual contacts while the patient is told to raise the ipsilateral leg (sacroiliac motion). When the ipsilateral leg is raised, the medial thumb will move first and further downward relative to the other thumb. The findings are rated on a dichotomous scale. Normal mobility (no fixation) of the SIJ is present if the lateral and medial thumb respectively moves first and further downwards relative to the other thumb. Abnormal mobility (fixation) is present if the thumb does not move downward relative to the other thumb. 16 parameters will be obtained.

Inter-examiner reliability: Reliability studies of the Gillet test have been conducted with Kappa ranges from 0.02 to 0.22 (Wiles 1980, Potter & Rothstein 1985, Carmichael 1987, Herzog et al 1989, Dreyfuss et al 1996, Meyne et al 1999). This has to be categorised as poor and therefore unreliable. In the absence of a reference standard, data on validity with regard to SIJ mobility tests are lacking.

Commentary

Recently, Laslett (2006) published an excellent commentary on pain provocation tests for diagnosis of SIJ pain. He stated that ‘SIJ pain is quite different from SIJ dysfunction and the concept is hypothetical at best’. I am in complete harmony with his opinion. The premise that the SIJ is a source of low back pain is attributed to the assumption that the SIJ is capable of motion. Walker (1992) concluded, after a review of 96 articles, that very small motion of the SIJ ('a few degrees of rotation or millimeters of translation') occurs as a coupling mechanism. Motion at the SIJ suggests a quantity of motion similar to other synovial joints which, it appears, is not the case. From a clinical perspective it is preferable to first identify a subgroup of low back pain patients with SIJ pain using the strategy proposed by Laslett in 2005. Within the subgroup of patients with SIJ pain, the therapist can then apply the mobility test for the SIJ in an attempt to localise the direction of dysfunction. Future research should focus on this hypothesis.

In summary, mobility tests applied solely for the SIJ seem to be not valid. The most appropriate algorithm is to identify patients with SIJ pain where the pain is not central, the pain is localised over the ‘SIJ area’ and not over the ‘ischial tuberosity area’, and three or more positive SIJ provocation tests are present. In addition, the mobility test for the SIJ can at best give some information about the quality of motion in the SIJ.

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References