Low Back Pain: Soft Tissue Diagnosis [Part 1 - Lats]

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Low back pain is the number one reason most people visit a chiropractor; therefore, chiropractors should excel at diagnosing and treating low back issues. Part of the diagnostic workup should include evaluation of the muscles that control and support the lower spine and pelvis. The major muscles to be evaluated include the lattissimus dorsi [lats], spinal erectors, quadratus lumborum [QL], psoas and the abdominal muscles.

The lats are one of the largest muscles attaching into the lumbar spine at the spinous processes from T8 to S4 and along the medial border of the iliac crests. The muscle fibers run obliquely from the spinous processes creating a V-shape as they insert superiorly into the humerus. With a shortened, tense lat muscle the vertebrae and/or crest will be pulled laterally and superiorly which can cause joint locking, ipsilateral pain and/or loss of motion. The upper extremity may also be affected by dysfunctional latissimus muscles causing internal rotation and depression of the humerus.

Diagnosis

Lumbo-pelvic range of motion, strength testing and palpation of the lats should be performed to obtain diagnostic information to determine the amount of lat involvement. When the latissimus muscles are involved lumbar flexion may or may not be limited; however, most patient's indicate strain and discomfort when returning to upright posture from flexion.

Strength testing should be performed prior to palpation so that mechanoreceptors are not stimulated and testing will elicit more accurate information. Eccentric break testing is my preferred protocol for muscle testing. [pic 1] Have the patient prone with elbow fully flexed and adducted into the ribcage. The doctor stabilizes the pelvis with one hand while slowly, but forcefully abducting the elbow with the other hand. Be careful not to compress the humerus superiorly into the glenoid fossa as this will cause a false reading.

A muscle operating at full resistance will be able to produce enough force that the elbow will remain locked into the ribcage without failure for up to three seconds. Grade the weakness and document findings prior to treatment.

The belly of the lats is mostly in the upper third section of the muscle and creates the 'wings' at the posterior aspect of the axilla. It is easier to palpate across the muscle fibers, looking for tenderness and fibrous adhesions. Palpate both insertion and origin where the tendons insert into the osseous attachments to determine which end is more involved.

Treatment

Soft tissue techniques that can be used to correct dysfunctional lats include compression techniques, contract-relax-stretch concepts and adjusting instruments can be applied to both belly and bony attachments. Compression techniques include the use of squeezing the muscle belly between the fingers

and thumb [pic 2], applying flat-bladed instruments made from various materials or incorporating a massage stick to roll through the fibers [pic 3].

The lats tend to respond quickly to treatment. Both the doctor and patient should find observable increases in strength. Since this muscle is a major mover and covers such a large region of the low back it is reasonable to conclude that it should be the first one to be evaluated in low back pain cases.

Part 2 - Quadratus Lumborum

Lats, QL, Abdominals