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Changes in recruitment of pelvic stabilizer muscles in people with and without sacroiliac joint pain during the active straight-leg-raise test.

Shadmehr A, Jafarian Z, Talebian S.

Author information

Abstract

BACKGROUND: Though the active straight leg raise (ASLR) test has been proposed as a reliable methodology for assessment of load transfer through the pelvis in patients with sacroiliac joint pain (SIJP), the tonicity and timing of muscle activation during the ASLR test have not been investigated. In clinical experiments, besides the ASLR test score, an increased duration of the test is also used for diagnosis of SIJP.

OBJECTIVE: This study was a cross-sectional design of electro-myographic pattern of sacroiliac stabilizer muscles to establish a platform for comparison of patients with SIJP and healthy controls. To identify if the subjects with SIJP show changes in electromyographic pattern of sacroiliac stabilizer muscles as well as any duration difference in such tests for both groups.

METHODS: Fifteen female patients with sacroiliac pain and the same number of healthy females at the same age were participated in this study. All the patients were diagnosed as positive ASLR as well as self reported maximum pain over the sacroiliac joint. Surface electromyographic activity was recorded from rectus abdominus, external oblique, internal oblique, adductor longus, biceps femoris, gluteus maximus and erector spinea during ASLR. Tonicity and onset of muscle activity in relation to the initiation of the ASLR and their duration were also compared.

RESULTS: The participants with SIJP exhibited a significantly increased latency at the onset of adductor longus following the initiation of the ASLR test ($P=0.002$) as compared to the healthy controls. A significant difference was also observed in tonicities of external oblique, biceps femoris, gluteus maximus and erector spinea as well as the duration of leg rising ($P < 0.05$) between the two groups.

CONCLUSION: These findings suggest that an alteration in the motor control strategy for lumbopelvic stabilization in patients with SIJP may influence load transfer through the **pelvic**.

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