Multifidus size and symmetry among chronic LBP and healthy asymptomatic subjects.

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Previous studies have provided evidence of multifidus muscle atrophy in people with low back pain (LBP). In cases of acute LBP, these studies have shown that the pattern of atrophy is both vertebral level and side specific. For chronic LBP, there are conflicting reports about the extent and location of muscle atrophy. The purpose of this study was to compare chronic LBP patients and asymptomatic subjects on measures of multifidus size (cross-sectional area; CSA) and symmetry (proportional difference of relatively larger side to smaller side). Data were obtained from 40 asymptomatic subjects without a prior history of LBP (13 females, 27 males), and a retrospective audit was undertaken of records from 50 chronic low back pain patients (27 females, 23 males) presenting to a back pain clinic. Results of the analysis showed that chronic LBP patients had significantly smaller multifidus CSAs than asymptomatic subjects at the lowest two vertebral levels. Males were found to have significantly larger multifidus CSAs than females at all vertebral levels except L5, the most common symptomatic level as determined by manual examination. The greatest asymmetry between sides was seen at the L5 vertebral level in patients with unilateral pain presentations. The smaller multifidus CSA was ipsilateral to the reported side of pain in all cases. The results of this study support previous findings that the pattern of multifidus muscle atrophy in chronic LBP patients is localized rather than generalized. Furthermore, between side asymmetry may be seen in chronic LBP patients presenting with a unilateral pain distribution.

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