

Original Paper

A comparative study on isometric muscles strength of shoulder complex between persons with and without impingement syndrome

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Abstract

Background and Objective: Several studies have demonstrated the importance of a coordinated, synchronized action of a scapular and glenohumeral muscles. Minimal alteration in performance and coordination of these muscles have the potential to lead to joint dysfunction. The impingement syndrome is the most common diagnosis of shoulder pain. The purpose of this study was to determine whether strength deficits could be detected in patients with shoulder impingement.

Materials and Methods: This case – control study was done on 15 patients with impingement syndrome and 15 healthy matched persons by nonprobability sampling in Tehran, Iran during 2008. Strength of glenohumeral and scapulothoracic muscles was tested with a hand held dynamometer. Independent and paired t-test were used to statistically analyze between and within groups differences.

Results: Compared to non impaired subjects, those with impingement syndrome demonstrated a significantly lower strength of shoulder muscles ($P<0.05$). The strength deficit between involved and noninvolved sides of patients was determined ($P<0.05$). In impingement syndrome patients, the external-to-internal rotator muscles strength ratio was significantly lower than on the control group ($P<0.05$).

Conclusion: The result of this study suggest that strength deficit of shoulder muscles may be an important aspect of the impingement syndrome. Muscular strength assessment should be considered in evaluation and effective treatment of a patient. Physical therapy treatment should be emphasize strengthening of weak muscles.

Keywords: Impingement syndrome, Shoulder muscle weakness, Shoulder muscle imbalance

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Received 3 Jan 2009

Revised 4 Oct 2009

Accepted 8 Dec 2009