

RELATIONSHIP BETWEEN STANDING POSTURE AND LOW BACK PAIN IN RUGBY UNION PLAYERS: A ONE-SEASON PROSPECTIVE STUDY

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Introduction

Many researchers have reported on the relationship between a standing posture and low back pain (LBP) in a cross-sectional study involving individuals with and without LBP. However, few prospective studies have analyzed the relationship for players of rugby union, which is categorized as a contact sport. The purpose of this study was to examine the association of medical screening variables including the standing posture of rugby players with LBP.

Methods

In total, 63 rugby union players aged 19.6 ± 1.2 years (mean \pm SD) were involved in this longitudinal study from one university club. They were classified into a LBP group, which was not able to join in at least one practice or game because of the LBP, and a non-LBP group during the 2010 season. Measurements of sagittal pelvic tilt angle in a standing posture, a range of motion test of the hip and ankle joints, and a flexibility test were carried out at the start of the 2010 season. Each measurement variable was compared between both groups with the significance level set at $\alpha = 0.05$.

Results & Discussion

In the standing position, the pelvic tilt angle of players in the LBP group was significantly smaller than that of players in the non-LBP group ($10.1 \pm 5.2^\circ$ vs. $13.6 \pm 5.1^\circ$, $p < 0.05$). In other words, the pelvis of players with LBP had a significant posterior tilt as compared to that of players with non-LBP. In addition to the range of motion in hip internal rotation, the laterality of this range of motion was significantly larger in the LBP group, compared with the non-LBP group. Watson reported that poor posture was one of the factors for injury in contact sport¹. In rugby, the players collide against players of the opposite team at the shoulders at the scrum or in a tackle; this increases compressive stress on the axes of the lumbar vertebra and intervertebral discs. When lumbar lordosis decreases as a result of posteriorly tilted pelvis, compressive stress on the intervertebral discs may increase. It is likely that a decrease in pelvic tilt angle increases the risk of severe LBP, preventing a full participation in practices in rugby union.

Conclusion

This study suggested that the pelvic tilt angle in the standing posture and the laterality of the range of internal rotation of the hip joint were related to LBP, causing retirement from practices or games.

Reference

1. Watson AW, (2001). *Int J Sports Med*, 22: 222-225.