

STATIC STANDING BALANCE OF RUGBY UNION PLAYERS

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Introduction

In recent years, previous studies have reported that rugby players had a cervical dysfunction from the effect of accumulated micro trauma on the cervical spine. Standing balance is clinically used as an index of sensorimotor control disturbance for neck disorders. However, there are few studies measuring the standing balance of rugby players. This study aimed to clarify whether neck injuries influence the static standing balance in rugby players.

Methods

This study included 43 rugby union players from one university club. The players were divided into two groups: 10 players sustained a neck injury within the past one year (injury group) and 33 players had no neck injury (no injury group). All participants were measured for center of foot pressure (CFP) in the standing position using a stable computerized force platform. Each player tried to keep a static standing posture for 30 seconds with eyes open or closed. Mean total path length, enveloped area, root mean square area, displacement along anterior-posterior axes, displacement along medial-lateral axes were compared between the groups using the Student's T-test or the Mann-Whitney U-test.

Results & Discussion

The injury group had significantly greater sway with eyes open than the no injury group in the total path length (45.2 ± 16.8 vs. 60.5 ± 20.1 cm, $p=0.02$) and root mean square area (2.01 ± 1.03 vs. 3.44 ± 1.88 cm, $p=0.05$). Displacement along anterior-posterior axes with eyes open (0.29 ± 1.39 vs. 1.68 ± 1.02 cm, $p=0.01$) and closed (0.29 ± 1.46 vs. 1.91 ± 1.05 cm, $p=0.00$) is also greater in the injury group. We found neck injuries could have a harmful influence on cervical afferent input and cervical muscle spindle sensitivity.

Conclusion

Neck injuries could influence on the static standing balance in rugby players by causing changes in the sensorimotor control system.

References

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