IJASC 15-1-13

Study of quake wavelength of dynamic movement with posture

Jeong-lae Kim*, Kyu-sung Hwang**

*Department of Biomedical Engineering Eulji University, Seoul, Korea jlkim@eulji.ac.kr **Department of Funeral Science Eulji University, Seoul, Korea hks@eulji.ac.kr

Abstract

Quake wavelength technique was designed of the sway by the body. There was presented a concept of the dangle wavelength by twisting condition of posture. We compared to the twisting condition for an average variation and maximum variation with the movement. There was used a combination system and correlation system of the posture. Their correlation signal was presented a control data by the dynamic movement. The quake wavelength system was to be formation of activity aspects by posture. The correlation of wavelength technique was applied to the a little action of posture variation signal.

Quake wavelength by the dynamic movement was determined to a variation of vision condition of the $Vi-\alpha_{AVG}$ with $(-1.27)\pm(-0.34)$ units, that vestibular condition of the $Ve-\alpha_{AVG}$ with $(-0.49)\pm(-0.4)$ units, that somatosensory condition of the $So-\alpha_{AVG}$ with 0.037 ± 0.269 units, that CNS condition of the $C-\alpha_{AVG}$ with $(-0.049)\pm0.015$ units.

As the study of the quake wavelength technique was depended on the action system of body movement that a maximum and averag values was used a movement of combination data. The system was required an action signal for the form of actual signal on the basis of a little movement condition in the body. The human action systemwas compared to maximum and average from the movement derived the body. Therefore, their system was controlled to evaluate posture condition for the body correlation.

Keywords: quake wavelength, dynamic movement, little actual station, physical activity

1. Introduction

Body cues are used to control locomotion that snare function are maintained dynamic stability of the body, modulated the gait pattern with respect to the swing conditions and guided motion towards axial point, and in cases of evaluated motion and course planning [1]. Only few studies, the changes in reference posture function could differentially affect the several motor patterns and the body trajectory. We used the analysis of several motions to investigate body condition before and after dynamic sway in a motion task performed swagger and dangle function [2].

In addition posture function specifically aimed to predict falls and balance, mainly in human people.

Manuscript Received: Jan. 23, 2015 / Revised: Feb. 17, 2015 / Accepted: Mar. 22, 2015

Corresponding Author: hks@eulji.ac.kr Tel:+82-31-740-7224, Fax: +81-31-740-7364 Dept. of Funeral Science, Eulji Univ., Korea Their outcome measure that was felt to be check included sway velocity – particularly in the anterior-posterior body axis – because this is in groups of measuring subjects. Sway velocity during static and dynamic conditions was correlated with the twisting of falls in the wavelength [3].

The effect of balance swagger function was investigated in different characteristic movement, usually with the evaluation as primary outcome. Their balance improved performance on the several motions, particularly for the more difficult conditions [4]. The correlation of difficult conditions was detected during the dynamic subjects with otherwise specified physical function [5].

We are to be suggested the results that swagger snare condition as a regulator factor of posture parameters is crucial in human movement before as well as after physical function, and particularly for the acute disorder [6].

2. Proposed method of swagger snare function signal

A. System of swagger snare function signal

This quake wavelength technique system keeps when the dynamic movement was deal with to generate a swagger snare function case. To detect effects of posture, character of movement data achieved a posture control with dangle function and daggle function. The proposed system in Figure 1 are adverted the architecture.

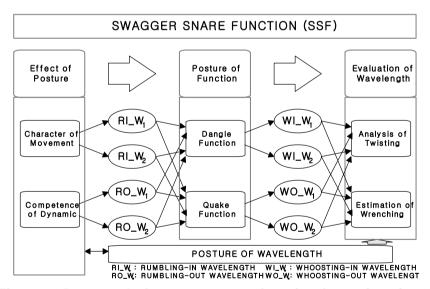


Figure 1. Proposed of swagger snare function for active signal on the quake wavelength technique

3. Results and Discussion

A. Database and comparison of of Ssf- α_{MAX} and Ssf - $\alpha_{MAX-AVG}$

Swagger snare function (Ssf) of the vision (Vi- α) condition was checked a variation for the Ssf-Vi- α_{MAX} and Ssf-Vi- $\alpha_{MAX-AVG}$ (Figure 2). The greatest difference of the Ssf-Vi- α_{MAX} was showed with swagger snare motion (Table 1). Ssf of vision(Vi- α) condition was verified more greater variation with Ssf-Vi- α_{MAX} of swagger snare motion. Ssf of Vi- $\alpha_{MAX-AVG}$ was sighted to a variation at 7.89±(-1.45) unit. Ssf of vision

maximum showed to a variation at $6.6\pm(-1.79)$ unit with Ssf-Vi- α_{MAX} . So, swagger snare motion of vision was displayed an influence of a dynamic sway on the swagger snare motion. This dynamic movement was showed more important for the postural control with the visual variance.

Swagger snare function (Ssf) of vestibular (Ve- α) condition was checked a variation for the Ssf-Ve- α_{MAX} and Ssf-Ve- $\alpha_{MAX-AVG}$ in the opposite direction (Figure 2). The little difference between Ssf-Ve- α_{MAX} was with swagger snare motion in the opposite direction (Table 1).

Ssf of vestibular(Ve- α) condition was verified tiny variation with Ssf-Ve- $\alpha_{MAX-MIN}$ of swagger snare motion. Ssf of Ve- $\alpha_{MAX-AVG}$ was sighted to a variation at (-0.65)±(-2.38) unit. Ssf of vision maximum showed to a variation at (-1.14)±(-2.78) unit with Ssf-Ve- α_{MAX} . Swagger snare motion of vestibular was less displayed an influence of a dynamic sway on the swagger snare motion. This dynamic movement was showed more important for the postural control with the vestibular variance.

Swagger snare function (Ssf) of somatosensory (So- α) condition was checked a variation for the Ssf-So- α_{MAX} and Ssf-So- $\alpha_{MAX-AVG}$ (Figure 3). The a little difference between Ssf-So- α_{MAX} was with swagger snare motion in the same directions.

Ssf of somatosensory(So- α) condition was verified slightly a little variation with Ssf -So- $\alpha_{MAX-MIN}$ of swagger snare motion. Ssf of So- $\alpha_{MAX-AVG}$ was sighted to a variation at 1.107±0.666 unit. Ssf of vision maximum showed to a variation at 1.144±0.943 unit with Ssf-So- α_{MAX} . So, Swagger snare motion of somatosensory was displayed lower less an influence of a dynamic sway on the swagger snare motion. This dynamic movement was showed more important for the postural control with the somatosensory variance in the opposite direction.

Swagger snare function (Ssf) of CNS (C- α) condition was checked a variation for the Ssf-C- α_{MAX} and Ssf-C- $\alpha_{MAX-AVG}$ (Figure 3). The lowest difference between Ssf-C- α_{MAX} was with swagger snare motion in the normal direction.

Ssf of CNS(C- α) condition was verified very small variation with Ssf-C- $\alpha_{MAX-MIN}$ of swagger snare motion. Ssf of C- $\alpha_{MAX-AVG}$ was sighted to a variation at 0.098±0.209 unit. Ssf of vision maximum showed to a variation at 0.049±0.223 unit with Ssf-C- α_{MAX} . So, Swagger snare motion of CNS was displayed very low less an influence of a dynamic sway on the swagger snare motion. This dynamic movement was showed more important for the postural control with the CNS of the different variance in the both direction.

Table 1. Average of quake wavelength measures to the various vision (Ssf-Vi α_{MAX-AV}), vestibular (Ssf-Ve α_{MAX-AV}), somatosensory (Ssf-So α_{MAX-AV}) and CNS (Ssf-C α_{MAX-AV}) condition. Average of Ssf- α_{MAX} and Ssf- α_{MAX-AV}

Average α	$Vi \; \alpha_{Avg}$	Ve α_{Avg}	So α_{Avg}	$C \; \alpha_{Avg}$
Ssf α _{MAX-AV}	7.89±(-1.45)	(-0.65)±(-2.38)	1.107±0.666	0.098±0.209
Ssf α_{MAX}	6.6±(-1.79)	(-1.14)±(-2.78)	1.144±0.943	0.049±0.223

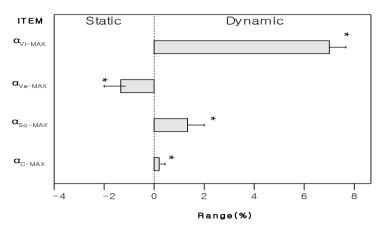


Figure 2. Average data of swagger snare function of max and average data for the static and dynamic motion condition

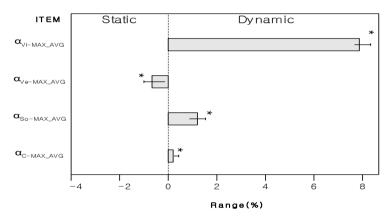


Figure 3. Average data of swagger snare function of max and average data for the static and dynamic with the motion condition

4. Conclusion

The Quake wavelength function was identified to the condition of the movement by the body. This system was presented an item of the combination data by action condition on the dynamic function. There was compared the correlation a maximum and average values of the dynamic condition. This system was showed the form of the physical activity and combination condition. Their using data was showed the evaluation of posture condition. As the effect evaluation was depended on the physical action for movement, the correlation a maximum and average values was controlled a comparison data. Their study indicated to be the actual function of actual signal on the basis of the formation condition.

References

- [1] L. Nashner, "A Systems Approach to Understanding and Assessing Orientation and Balance," *NeuroCom International, Clackamas, OR*, 1987.
- [2] L. Borel, F. Harlay, C. Lopez, J. Magnan, A.Chays, M. Lacour, "Walking performance of vestibular-defective patients before and after unilateral vestibular neurotomy," *Behavioural Brain Research*, Vol. 150, pp. 191–200, 2004.

- [3] R.W. Baloh, T.D. Fife, L. Zwerling, T. Socotch, K. Jacobson, T. Bell, et al., "Comparison of static and dynamic posturography in young and older normal people," *J Am Geriatr Soc*, Vol. 42, No. 4, pp. 405–12, April 1994.
- [4] M.A. Hirsch, T. Toole, C.G. Maitland, R.A. Rider, "The effects of balance training and highintensity resistance training on persons with idiopathic Parkinson's disease," *Arch Phys Med Rehabil*, Vol. 84, No. 8, pp. 1109–1117, August 2003.
- [5] A.S. Kammerlind, J.K. Hakansson, M.C. Skogsberg, "Effects of balance training in elderly people with nonperipheral vertigo and unsteadiness," *Clin Rehabil*, Vol. 15, No. 5, pp. 463–470, October 2001.
- [6] A. Bronstein, M. Guerraz, "Visual-vestibular control of posture and gait: physiological mechanisms and disorders," *Curr Opin Neurol*, Vol. 12, pp. 5–11. 1999.
- [7] J.L. Kim, K.S. Hwang, Y. S. Nam, "Assessment of the Posture Function by Head Movement," *The Journal of IIBC*, Vol.14, No. 5, pp.131-135, 2014.