

原 著

高齢者の自由歩行に関する一考察；足向角と歩隔を中心に

A study on normal walking in elderly people with special reference to
foot angle and step width

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Abstract

The purpose of this study was to understand the characteristics of gait patterns in elderly people compared with those in young people. The foot angle and step width were measured using their footprints while elderly people were walking at their voluntary speeds. 356 elderly people including 170 men and 186 women aged 75.0 ± 6.2 , and 206 young people including 88 men and 118 women aged 20.4 ± 1.3 , participated this study. The mean foot angle, which was defined as the angle between the right and left foot, in the male elderly group was $21.2 \pm 8.7^\circ$ and that in the female elderly group was $9.6 \pm 9.2^\circ$. There was a significant difference between the mean foot angle in the elderly and young group. The mean step width in the male and female elderly group was 0.072 m and 0.060 m, respectively. The mean step width in the elderly group was greater than that in the young group. In the elderly group, the foot angle showed no change with increasing age, while the step width increased significantly with increasing age. The elderly who walked with a wider foot angle and step width showed a tendency to walk at slower speed and to have the lower muscle strength, body balance and quickness. These findings would contribute to understand the changes of gait patterns with an increase in age in the elderly people.

キーワード 高齢者, 歩行, 足向角, 歩隔, 体力テスト

Elderly, Walking, Foot Angle, Step Width, Physical Fitness Test

I. 緒言

歩行は人類学的な見地からみて最も基本的な動作の移動運動 (Locomotion) である。これまで人類学や生態学, 体力科学的アプローチ (木村ほか, 1989; 衣笠ほか, 1994), 臨床的リハビリテーション (ダクロケット, 1973), バイオメカニクス的研究 (Murry et al., 1964, 1966,

1969, 1970; Kaneko et al., 1991; 淵本ほか, 1998; 長谷川ほか, 1999; 柳川ほか, 2002, 2003; 宮辻ほか, 2007a) など, 幅広い分野から多岐にわたる取り組みがなされてきた。高齢者に限らず歩行能力はADL (Activities of Daily Living) やQOL (Quality of Life) を維持する上で必要不可欠な能力であるため, 自由歩行

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