

Walking with a Cane Provides Pain Relief and Reduces Joint Loading in Patients with Hip Osteoarthritis

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[Background and aims]

Patients with hip osteoarthritis complain about pain during walking and disturbed gait ability. The use of a walking cane is a self-management strategy recommended for people with hip osteoarthritis. The aim of this study is to investigate the effects of cane use on pain relief and the reduction of joint loading during walking in patients with hip osteoarthritis.

[Methods]

Fifteen patients with severe hip osteoarthritis were recruited. Participants were evaluated using a 3-dimensional motion analysis system. They were instructed to walk along a 5-m walkway with and without a cane. Ground reaction force data were collected using a force plate located in the center of the walkway. We asked about the pain that they experienced using a 100-mm visual analog scale (VAS) after each walking trial. We compared the walking data (walking speed, cadence, step length, peak vertical ground reaction force, and peak hip adduction moment) measured during walking with and without the use of a cane.

[Results]

The walking speed did not differ between the two measurements (with and without a cane). Cadence was significantly reduced when walking with a cane (mean, 87 steps/minute vs. 94 steps/minute). The vertical ground reaction force and hip adduction moment were significantly decreased when walking with a cane (mean, 510 N vs. 597 N, 0.61Nm/kg vs. 0.72Nm/kg, respectively). The VAS of pain during walking with a cane was also reduced in comparison to walking without a cane (mean, 27 vs. 38).

[Conclusions]

Although the use of a cane reduced cadence, it increased the stride, and thus did not reduce the walking speed in patients with. The use of cane during walking reduced pain in patients with hip osteoarthritis. This would be due to a reduction in the vertical ground reaction force and hip adduction moment.